MÝTY A PRAVDY O GMO

11.09.2025

Prinášame slovenský preklad úryvkov z knihy GMO Myths and Truths od dlhodobej aktivistky proti GMO Claire Robinsonovej, profesora molekulárnej genetiky Michaela Antonioua a podnikateľa a zakladateľa viacerých organizácií venujúcich sa zdravému, bezpečnému a udržateľnému poľnohospodárstvu Johna Fagana.

UPOZORNENIE – DÔLEŽITÉ INFORMÁCIE

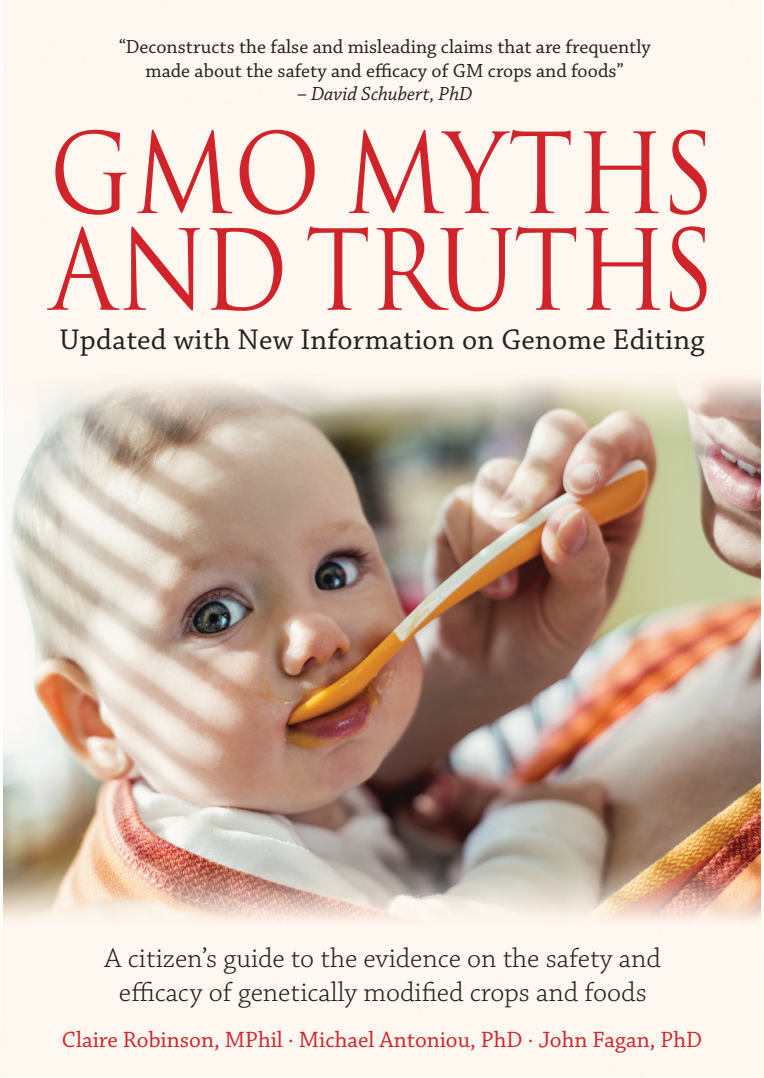
O KNIHE

Na Slovensku, bohužiaľ, nie je dostupná literatúra pre tých, ktorí by sa chceli o problematike GMO a s ňou spojených rizikách prečítať viac. Preto sme sa rozhodli predstaviť aspoň základné informácie, ktoré prinášajú zahraniční aktivisti a experti na GMO a ich riziká.

Kniha GMO Myths and Truths (Mýty a pravdy o GMO) z roku 2018 je už štvrtým vydaním a napriek roku vydania zostáva naďalej aktuálnou. Štvrté vydanie je doplnené o NGT (nové genomické technológie, v knihe: NPBT) GMO, ktoré sú teraz snahy deregulovať na úrovni EÚ. Celá kniha je rozdelená do kapitol; každá začína tzv. mýtom, pravdou a stručným vysvetlením, po ktorom nasleduje argumentácia opierajúca sa o množstvo vedeckej literatúry. So súhlasom autorov nižšie predstavujeme vlastný preklad každého mýtu, pravdy a krátkeho úvodu k mýtu z knihy a na koniec aj zoznam použitej literatúry pre každú kapitolu.

Ak máte záujem dozvedieť sa o GMO viac, môžete si knihu v angličtine zakúpiť priamo od autorov na stránke GMWatch za výhodnejšiu cenu než vo veľkých internetových obchodoch.

Upozorňujeme, že ide o vlastný necertifikovaný preklad, pre referencie odporúčame obrátiť sa na originál.



Obálka štvrtého vydania knihy Mýty a pravdy o GMO

O AUTOROCH KNIHY

Claire Robinson, MPhil je redaktorkou v GMWatch, verejnej spravodajskej a informačnej službe o geneticky modifikovaných (GM) potravinách a plodinách a s nimi súvisiacich pesticídoch.

John Fagan, PhD je poprednou autoritou v oblasti udržateľnosti potravinového a poľnohospodárskeho systému, biologickej bezpečnosti a bezpečnosti a autenticity potravín. Je úspešným podnikateľom v oblasti biotechnológií, založil, vybudoval a predal spoločnosť Global ID Group, ktorá patrila medzi priekopníkov vo vývoji molekulárno-biologických nástrojov na overovanie a podporu čistoty, bezpečnosti a udržateľnosti potravín. Dr. Fagan je spoluzakladateľom a hlavným vedcom **Health Research Institute**, neziskovej výskumnej a vzdelávacej inštitúcie, ktorá využíva najmodernejšie analytické metódy na skúmanie vzťahov medzi poľnohospodárskymi

praktikami, hladinami mikronutrientov a chemických rezíduí v plodinách a zdravím spotrebiteľov. Je výkonným riaditeľom **Earth Open Source Institute**, neziskovej organizácie podporujúcej environmentálnu udržateľnosť a sociálnu zodpovednosť potravinového a poľnohospodárskeho systému, kde vedie výskum a riadi projekty poľnohospodárskeho rozvoja.

Michael Antoniou, PhD je Reader (docent) molekulárnej genetiky a vedúci skupiny pre génovú expresiu a terapiu na Katedre lekárskej a molekulárnej genetiky, Lekárska fakulta King's College London, Spojené kráľovstvo. Má 34 rokov skúseností s využívaním technológií genetického inžinierstva, vrátane nástrojov na úpravu genómu, pri skúmaní organizácie a regulácie génov a publikoval viac než 100 recenzovaných vedeckých článkov. Je uvedený ako vynálezca na patentoch z oblasti biotechnológií génovej expresie. Jeho objavy v mechanizmoch regulácie génov sa používajú vo výskume aj pri vývoji diagnostických a terapeutických produktov pre genetické poruchy. Dr. Antoniou sa aktívne zaujíma o bezpečnosť GM plodín a s nimi spojených pesticídov. V posledných rokoch publikoval práce, ktoré preukazujú nerovnocennosť kukurice tolerantnej voči glyphosátu oproti ne-GM kukurici, ako aj závažnú toxicitu obličiek a pečene pri chronickej expozícii ultra-nízkej dávke prípravku Roundup.

1. MÝTUS: Genetické inžinierstvo je len rozšírením prirodzeného šľachtenia a nie je o nič rizikovejšie.

PRAVDA: Genetické inžinierstvo sa zásadne líši od prirodzeného šľachtenia a prináša konkrétne riziká.

MÝTUS V SKRATKE:
Táto kapitola sa zaoberá technikami genetickej modifikácie využívajúcimi rekombinantnú DNA. Takzvané „nové GM" techniky, ktoré zástancovia GMO zvyčajne označujú ako **Nové techniky rastlinného šľachtenia** (New Plant Breeding Techniques – NPBT), sú pokryté v kapitole 2.

Zástancovia geneticky modifikovaných (GM) plodín tvrdia, že genetické inžinierstvo je len rozšírením prirodzeného rastlinného šľachtenia. Tvrdia, že GM je presnejšie a umožňuje vložiť gény kódujúce požadovanú vlastnosť (charakteristiku alebo znak) do hostiteľskej rastliny s minimálnymi neočakávanými účinkami.

Avšak proces GM transformácie je úplne umelý a v prírode by sa nikdy neudial. Postup GM, ktorý sa uplatňuje na väčšine bežne pestovaných GM rastlín – **transgenéza** – zahŕňa prenos génov medzi rôznymi druhmi a/alebo rôznymi ríšami živých organizmov. Spočíva v pestovaní rastlinných buniek na miskách v laboratóriu (tkanivové kultúry rastlinných buniek) a náhodnom

vkladaní umelo skonštruovanej cudzej génovej jednotky do týchto buniek, čo následne mení genóm (celkovú DNA) hostiteľa. Pri tomto postupe neexistujú žiadne hranice – gény môžu byť prenášané medzi rôznymi druhmi a dokonca aj medzi ríšami.

Tieto procesy nie sú presné. Vklady génov sú náhodné a vysoko **mutagénne** (poškodzujú DNA). Vedú k nepredvídateľným zmenám v DNA a následne aj v proteínoch a celkovej biochemickej skladbe výslednej GM rastliny. To môže viesť k tomu, že GM rastlina bude mať neočakávané toxické alebo alergénne účinky a zmenenú nutričnú hodnotu, ako aj nepredvídateľné účinky na životné prostredie.

Cisgenéza – prenos génov medzi členmi toho istého alebo príbuzného druhu – sa často prezentuje ako bezpečnejšia než transgenéza, pretože vraj zahŕňa prenos genetického materiálu len medzi členmi toho istého alebo príbuzného druhu a nezavádzajú sa cudzie gény. Toto je však zavádzajúci argument, pretože väčšina faktorov, ktoré prispievajú k nekontrolovaným a nepredvídateľným účinkom GM, je vlastná základnej technológii rekombinantnej DNA, a teda spoločná pre cisgenézu aj transgenézu.

Navyše, génová kazeta použitá na prenos cisgénu je umelý konštrukt obsahujúci DNA sekvencie z iných druhov – čo robí tento proces transgénnym. Vkladanie cisgénovej kazety do DNA hostiteľskej rastliny je náhodné a mutagénne. Cisgenéza zahŕňa tkanivové kultúry, ktoré sú taktiež mutagénne. Dôkazy ukazujú, že cisgenéza môže viesť k významným neočakávaným zmenám v rastline.

2. MÝTUS: Takzvané „Nové techniky rastlinného šľachtenia“ – úprava genómu a RNA interferencia – sú presné, kontrolovateľné a bezpečné.

PRAVDA: Techniky úpravy genómu a RNA interferencie môžu mať neúmyselné účinky a výsledné produkty predstavujú riziká pre zdravie a/alebo životné prostredie.

MÝTUS V SKRATKE:
Techniky úpravy genómu, ako **CRISPR-Cas9, TALENs, ZFNs a oligonukleotidmi riadená mutagenéza,** ako aj techniky **RNA interferencie,** sa čoraz viac používajú na manipuláciu s potravinovými plodinami a hospodárskymi zvieratami.

Zástancovia tvrdia, že tieto techniky – ktoré označujú ako **Nové techniky rastlinného šľachtenia (NPBTs)** – sú presné, kontrolovateľné a prinášajú predvídateľné výsledky.

Tiež tvrdia, že zmeny génov dosiahnuté určitými aplikáciami úpravy genómu sú takého typu, ktorý by sa mohol vyskytnúť prirodzene.

Na tomto základe argumentujú, že potravinové produkty získané týmito technológiami by mali byť vyňaté z regulácie GMO alebo podliehať iba „miernej“ regulácii.

Avšak rastúci počet vedeckých výskumov ukazuje, že technológie úpravy genómu **nie sú presné ani kontrolovateľné**, ale spôsobujú väčšie než očakávané **delécie DNA** v cieľových miestach a poškodenia mimo cieľov, s nepredvídateľnými výsledkami.

RNA interferencia môže narušiť fungovanie aj iných génov než tých, na ktoré boli pôvodne zamerané. Navyše sa ukázalo, že molekuly RNA interferencie prežijú trávenie a vstupujú do tela konzumenta, kde môžu potenciálne zasahovať do kľúčových génových funkcií a viesť k nepriaznivým zdravotným účinkom.

V prípade potravinových rastlín vyrobených týmito technológiami môžu tieto účinky zmeniť biochémiu organizmu, čo môže viesť k objaveniu sa **neočakávaných toxínov alebo alergénov** alebo k zmenenej nutričnej hodnote.

3. MÝTUS: GM potraviny sú prísne testované a regulované z hľadiska bezpečnosti.

PRAVDA: Regulácia sa spolieha na testy bezpečnosti GM potravín vykonávané samotnými vývojárskymi spoločnosťami a regulačné procesy sú slabé.

MÝTUS V SKRATKE:
Tvrdenia, že GM potraviny sú rozsiahlo testované a prísne regulované, sú nepravdivé. V najlepšom prípade sú testované na bezpečnosť pred uvedením na trh samotnými spoločnosťami, ktoré majú z ich predaja zisk. Tieto testy sú však príliš slabé na to, aby preukázali bezpečnosť, najmä pokiaľ ide o dlhodobú konzumáciu týchto produktov.

GM potraviny boli prvýkrát povolené v potravinovom reťazci v USA na základe tvrdenia, že sú **všeobecne uznávané ako bezpečné (GRAS)** – no žiadna GM potravina nikdy nespĺňala prísne kritériá GRAS.

V mnohých krajinách sú GM potraviny schvaľované regulátormi ako **„podstatne ekvivalentné“** ne-GM plodinám. Keď sa však toto tvrdenie testuje priamymi experimentmi, GM plodiny často vykazujú neočakávané a

neúmyselné rozdiely. Tieto rozdiely môžu spôsobiť, že GM potravina bude toxickejšia alebo alergénnejšia než jej ne-GM rodičovská odroda.

4. MÝTUS: Genetické inžinierstvo plodín nie je rizikovejšie než mutačné šľachtenie, ktoré je široko akceptované a nepodlieha regulácii.

PRAVDA: Genetické inžinierstvo aj mutačné šľachtenie sú rizikové a mali by byť prísne regulované.

MÝTUS V SKRATKE:
Zástancovia GM často porovnávajú genetickú modifikáciu s mutačným šľachtením vyvolaným žiarením alebo chemikáliami (**mutagenézou**) a tvrdia, že tieto metódy sú ešte mutagénnejšie než GM a prinajmenšom rovnako narúšajú génovú expresiu. Tvrdia, že plodiny vyvinuté mutačným šľachtením sú všeobecne považované za bezpečné a nespôsobili zdravotné problémy, a preto by GM plodiny nemali podliehať prísnejšej regulácii než plodiny získané mutačným šľachtením.

Niektorí zástancovia GM dokonca naznačujú, že mutagenéza je ekvivalentná konvenčnému šľachteniu.

Avšak hoci sa mutagenéza v konvenčnom šľachtení používa, **mutačné šľachtenie nie je to isté ako konvenčné šľachtenie**. Mutačné šľachtenie je nepredvídateľné a rizikové a plodiny vyprodukované týmto spôsobom by mali byť rovnako prísne regulované ako GM plodiny.

Mutačné šľachtenie sa nikdy nerozšírilo do širokého a trvalého používania, pretože je neefektívne. Štúdie na ovocných muškách ukazujú, že asi **70 % mutácií má škodlivé účinky**, pričom zvyšok je buď neutrálny, alebo len slabo prospešný.

V 50. rokoch 20. storočia prebiehalo koordinované úsilie využiť žiarenie v rastlinnom šľachtení v rámci snáh jadrového priemyslu propagovať „mierové využitie atómu“. To prinieslo niekoľko užitočných alebo zaujímavých nových vlastností, ako napríklad **polotrpasličí znak v ryži**, ktoré sa používajú dodnes. No počet užitočných vlastností vytvorených mutagenézou je **zanedbateľne malý** v porovnaní s počtom znakov vytvorených konvenčným šľachtením.

Tvrdiť, že GM plodiny by sa nemali testovať na bezpečnosť, pretože GM je rovnako bezpečné ako mutagenéza, je ako porovnávať hru ruská ruleta hranú s jedným typom pištole s hrou ruskej rulety hranou s iným typom pištole. **Ani jedna nie je odporúčaná.**

5. MÝTUS: Nezávislé štúdie potvrdzujú, že GM potraviny a plodiny sú bezpečné.

PRAVDA: Nezávislý výskum GM potravín je ťažko realizovateľný alebo nemožný, no existujúce štúdie odhalili problémy a výskumníci boli za svoju prácu často napádaní.

MÝTUS V SKRATKE:
Hlbkové štúdie bezpečnosti potravín vyrobených z GM plodín, ktoré vykonávajú vedci nezávislí od GMO priemyslu, sú zriedkavé. Ich realizáciu sťažuje **nedostatok financovania pre skutočne nezávislý výskum** a **ťažkosti s prístupom k GM semenám a ne-GM rodičovským odrodám**.

Vedci, ktorí sa podarilo takýto výskum uskutočniť a odhalili riziká spojené s testovaným geneticky modifikovaným organizmom (GMO), často **čelili prenasledovaniu**. Niektorí zaplatili svojou kariérou alebo stratou financovania.

Tvrdenia, že sa v posledných rokoch zlepšilo prostredie pre nezávislých výskumníkov, **neboli dokázané**. Verejnosti nie sú známe žiadne príklady dohôd medzi výskumníkmi a spoločnosťami vyrábajúcimi GMO semená, takže verejnosť **nemôže vidieť, aké obmedzenia sú výskumníkom ukladané**.

6. MÝTUS: GM potraviny sú bezpečné na konzumáciu.

PRAVDA: GM plodiny majú toxické a alergénne účinky na laboratórne a hospodárske zvieratá.

MÝTUS V SKRATKE:
Často sa tvrdí, že neexistujú dôkazy o nebezpečenstve pre zdravie z GM plodín a potravín. **Toto je však nepravda.** Recenzované vedecké štúdie našli známky toxicity a toxické aj alergénne účinky u laboratórnych a hospodárskych zvierat kŕmených GMO.

Väčšina kŕmnych štúdií so zvieratami na GMO je iba krátkodobá alebo strednodobá. Potrebné sú **dlhodobé a viacgeneračné štúdie**, aby sa ukázalo, či zmeny zistené v kratších štúdiách prerastú do vážnych ochorení, predčasného úmrtia alebo problémov s reprodukciou a vývinom. Takéto štúdie však **regulátori nikde na svete nevyžadujú**.

Priemysel a regulačné orgány často odmietajú zistenia toxicity v kŕmnych pokusoch s tvrdením, že nie sú „biologicky významné/relevantné“. Tieto pojmy však nikdy neboli presne definované a sú vedecky bezvýznamné.

Tvrdenia, že Američania zjedli milióny jedál obsahujúcich GMO bez nepriaznivých účinkov, sú **nevedecké a zavádzajúce**. Neboli urobené žiadne epidemiologické štúdie, ktoré by ukázali, či GM potraviny ovplyvňujú zdravie Američanov. Navyše, v USA neboli GM potraviny označované, takže neexistuje spôsob, ako vysledovať akékoľvek účinky.

Je však známe, že zdravie Američanov sa od zavedenia GM potravín zhoršilo. **Príčina nie je známa**, no GM potraviny a/alebo pesticídy s nimi spojené nemožno vylúčiť.

7. MÝTUS: Mnohé dlhodobé štúdie dokazujú, že GM potraviny sú bezpečné.

PRAVDA: Vykonalo sa len málo dlhodobých štúdií, pričom niektoré ukazujú toxické účinky GM potravín.

MÝTUS V SKRATKE:
Niektorí zastáncovia GMO a vedci tvrdia, že mnohé dlhodobé štúdie na zvieratách ukázali, že GM potraviny sú bezpečné. Toto však nie je pravda. Vykonalo sa len **málo dlhodobých a dôkladných štúdií**, a z tých, ktoré sa uskutočnili, niektoré ukázali toxické účinky.

Dlhodobé štúdie na zvieratách sú dôležité, pretože môžu odhaliť nepriaznivé účinky GMO stravy, ktoré sa prejavia až po určitom čase, napríklad poškodenie orgánov a rakovina. Väčšina štúdií na GM potravinách je krátkodobá alebo strednodobá. Žiadny regulačný orgán na svete nevyžaduje štúdie na zvieratách dlhšie ako 90 dní u potkanov (čo zodpovedá iba 7–8 rokom u človeka).

Správa od Snella a kolegov, ktorá má prezentovať dlhodobé štúdie dokazujúce bezpečnosť GM potravín, je **zavádzajúca**. Mnohé zo štúdií nie sú skutočne dlhodobé a autori používajú dvojité štandardy: odmietajú zistenia škodlivých účinkov, ale prijímajú zistenia bezpečnosti bez ďalšej kritiky.

Zdravotné účinky zistené v dlhodobých štúdiách na zvieratách nemožno predpovedať len analýzou zloženia GM potraviny.

V skutočnosti bolo vykonaných len málo dlhodobých a dôkladných štúdií, a z tých, ktoré existujú, niektoré ukázali toxické účinky GM potravín. Navyše, mnohé štúdie, ktoré sú označované ako dlhodobé, **v skutočnosti dlhodobé nie sú**. Nasleduje analýza niekoľkých skutočne dlhodobých štúdií a recenzia, ktorá sa snaží preskúmať dlhodobé štúdie na GMO.

8. MÝTUS: Správa Nicoliaho zhromažďuje viac ako 1 700 štúdií, ktoré dokazujú, že GMO sú bezpečné.

PRAVDA: Mnohé z týchto prác nedokazujú bezpečnosť GMO, niektoré ukazujú, že niektoré GMO sú škodlivé, a dôležité štúdie relevantné pre bezpečnosť GMO sú vynechané alebo ignorované.

MÝTUS V SKRATKE:
Správa od Nicoliaho a kolegov, publikovaná v roku 2013, sa často používa na tvrdenie, že viac ako 1 700 štúdií ukazuje, že GMO sú bezpečné. Toto však nie je pravda.

Väčšina štúdií uvedených v recenzii neposkytuje žiadne pevné údaje o **bezpečnosti GMO** pre zdravie alebo životné prostredie.

Niektoré zo štúdií uvedených v recenzii dokonca ukazujú **riziká alebo skutočné škody** spôsobené GMO, čo autori zhodnotenia neuvádzajú. Iné štúdie, ktoré poskytujú užitočné údaje o bezpečnosti GMO, sú **vynechané**.

Recenzia navyše zavádzajúco popisuje údajnú vedeckú kontroverziu okolo výskumu, ktorý ukazuje, že **Bt toxíny v GM Bt plodinách poškodzujú organizmy**, ktoré nie sú ich cieľom. Vedecky opodstatnený záver z experimentálnej literatúry na túto tému je, že Bt toxíny majú škodlivé účinky na tieto necieľové organizmy. Napriek tomu recenzia Nicoliaho naznačuje, že sú pre tieto organizmy bezpečné.

9. MÝTUS: Správa Van Eenennaamovej pracovalo s údajmi o 100 miliardách zvierat a zistila, že GMO sú bezpečné.

PRAVDA: Správa neobsahuje žiadne údaje, ktoré by dokazovali bezpečnosť GMO.

MÝTUS V SKRATKE:
Recenzia Van Eenennaamovej a Youngovej (2014) bola citovaná ako dôkaz bezpečnosti GMO. Recenzia zohľadnila **29 rokov údajov o produktivite hospodárskych zvierat** v USA pred a po zavedení GMO, predstavujúc viac ako 100 miliárd farmárskych zvierat. Tieto údaje **neukazujú zhoršenie zdravia zvierat** po zavedení GM krmiva, a preto sa tvrdí, že GMO nespôsobujú zdravotné problémy zvieratám.

Avšak recenzia nám poskytuje veľmi málo informácií o **bezpečnosti GMO**. Údaje o „100 miliardách zvierat“ nie sú kontrolovateľné pre množstvo premenných. Nie je ani známe, koľko z týchto zvierat skutočne konzumovalo GMO a ako dlho. Neuveriteľných 98,45 % zo 100 miliárd citovaných zvierat

sú **hydina**, ktorá nie je vhodným modelom pre posudzovanie zdravotných rizík u cicavcov vrátane ľudí. Celkovo 92,17 % zvierat sú brojlery, s maximálnou komerčnou dĺžkou života iba 49 dní (len zlomok prirodzenej dĺžky života kurčaťa).

Tieto údaje teda **nedávajú žiadne informácie o dlhodobých zdravotných účinkoch GMO** u hydiny a ani o akýchkoľvek zdravotných účinkoch, krátkodobých alebo dlhodobých, u cicavcov vrátane ľudí.

10. MÝTUS: GM plodiny zvyšujú potenciálnu úrodu.

PRAVDA: GM plodiny nezvyšujú potenciálnu úrodu.

MÝTUS V SKRATKE:
Zastáncovia GMO tvrdia, že GM plodiny zvýšili **úrodu plodín**. Toto však nie je pravda**.** Hoci nárast úrody bol zaznamenaný u hlavných plodín v 20. storočí, bol spôsobený **vylepšeniami tradičným šľachtením**, nie GM vlastnosťami. V niektorých prípadoch GM plodiny **dávajú menšiu úrodu** než ne-GM plodiny.

Veľká úroda je **komplexná genetická vlastnosť**, založená na viacerých génoch, a nemožno ju jednoducho geneticky vylepšiť. Prakticky všetky komerčne dostupné GM vlastnosti poskytujú **odolnosť voči herbicídom alebo hmyzu**, alebo oboje. Vysoko úrodné GM odrody sú v podstate **vysoko úrodné ne-GM plodiny**, ku ktorým boli pridané GM vlastnosti ako odolnosť voči herbicídom alebo hmyzu.

Tvrdenia, že GM **Bt bavlna** zvýšila úrodu bavlny v Indii, **neobstojí** pri dôkladnej analýze, pretože nárast úrody nastal ešte pred širokým zavedením Bt bavlny. Po tom, ako Bt bavlna začala dominovať indickej produkcii, úroda klesla. Teraz, keď Bt bavlna padla za obeť škodcom, farmári sa vracajú k **ne-GM bavlne**.

11. MÝTUS: GM plodiny znižujú používanie pesticídov.

PRAVDA: GM plodiny zvyšujú používanie pesticídov.

MÝTUS V SKRATKE:
Zastáncovia GM plodín tvrdia, že **znižujú používanie pesticídov** (pojem „pesticíd“ zahŕňa herbicídy, insekticídy a fungicídy). **Toto však nie je pravda.**

Od zavedenia GM plodín v USA sa celkové používanie pesticídov **zvýšilo približne o 183 miliónov kg** (404 miliónov libier), alebo asi o 7 % v porovnaní s tým, čo by sa použilo na rovnakých plochách ne-GM plodín.

Malé počiatočné zníženie používania chemických insekticídnych postrekov v dôsledku GM **Bt plodín** sa stalo ireleventným, kvôli veľkému nárastu používania herbicídov v dôsledku zvýšenia používania GM **herbicídom odolných plodín**.

Široké používanie plodín odolných voči glyphosatu viedlo k šíreniu **superburín odolných voči glyphosatu** na amerických farmách. Odpoveďou GMO priemyslu bolo vyvinúť plodiny odolné voči iným herbicídom, vrátane 2,4-D a dicamby.

Tento model poľnohospodárstva, nazývaný **„chemický bežiaci pás“**, je neudržateľný a obzvlášť nevhodný pre farmárov v Globálnom Juhu.

GM **Bt plodiny** sú samy osebe insekticídom, takže celkovo **neodstraňujú ani neznižujú insekticídy**, iba menia typ a spôsob ich použitia – z postreku na vlastnú tvorbu. Navyše tvrdenia o znížení používania insekticídov pri zavedení Bt plodín nezohľadňujú **insekticídne ošetrenie semien neonicotinoidmi**, ktoré sa zvýšilo spolu s Bt plodinami. Tiež nezohľadňujú **rýchlo sa vyvíjajúcu rezistenciu škodcov na Bt toxíny** v GM Bt plodinách.

12. MÝTUS: Pesticídy spojené s GM plodinami sú bezpečné.

PRAVDA: Pesticídy spojené s GM plodinami predstavujú riziká pre zdravie a životné prostredie.

MÝTUS V SKRATKE:
GM plodiny odolné voči herbicídom **absorbujú herbicídy do svojich tkanív**. Ľudia a zvieratá, ktoré tieto plodiny konzumujú, teda prijímajú **rezíduá herbicídov**.

Štúdie ukazujú, že herbicídy používané na GM plodinách – **glyphosate** (najčastejšie predávaný ako Roundup), glufosinate, 2,4-D a dicamba – sú **toxické pre ľudí a zvieratá**.

V roku 2015 agentúra pre rakovinu Svetovej zdravotníckej organizácie vyhlásila, že **glyphosate**, ktorý sa aplikuje na viac ako 85 % GM plodín na svete, je **pravdepodobný karcinogén pre ľudí**.

Hodnotenia bezpečnosti pesticídov vykonávané regulátormi vychádzajú zo starej predstavy, že **toxickosť vždy rastie s dávkou** a nízke úrovne, ktorým sme vystavení, sú bezpečné. Toto je v rozpore s výskumom, ktorý ukazuje, že pesticídy môžu spôsobovať **endokrinné (hormonálne) poruchy** a poškodzovať zdravie aj pri nízkych dávkach, ktoré regulátori považujú za bezpečné.

Okrem hlavnej účinnej látky (napr. **glyphosate v Roundupe**) pesticídne zmesy obsahujú prídavné látky alebo „adjuvanty“. Tieto zmesy **nie sú dostatočne testované na bezpečnosť** pri reguláciách, no akademickými štúdiami sa zistilo, že sú **vo všeobecnosti toxickejšie než izolované účinné látky**.

Bt insekticídne toxíny tvorené v GM **Bt plodinách** sa líšia od prírodného Bt, ktorý aplikujú organickí a konvenční farmári, a boli zistené **toxické účinky na necieľové hmyzy a cicavce**. Podľa patentu Monsanto boli tieto toxíny geneticky upravené, aby boli **„super toxíny“**.

13. MÝTUS: GM plodiny odolné voči herbicídom sú šetrné k životnému prostrediu.

PRAVDA: GM plodiny odolné voči herbicídom sú pokračovaním chemicky náročného poľnohospodárstva a predstavujú ohrozenie pre životné prostredie.

MÝTUS V SKRATKE:
Zastáncovia GMO tvrdia, že **GM plodiny odolné voči herbicídom** (najmä tie s odolnosťou voči glyphosatu) sú klimaticky šetrné, pretože umožňujú farmárom používať **systém bez obrábania pôdy (no-till)**, v ktorom sa buriny kontrolujú herbicídmi namiesto orby. No-till má šetriť pôdu a vodu a údajne znižovať emisie oxidu uhličitého tým, že sa v pôde viaže viac uhlíka.

Avšak údaje ukazujú, že:

- Zavedenie GM plodín v USA **výrazne nezvýšilo používanie no-till systému;**
- Keď sa zohľadní **ekologické poškodenie spôsobené herbicídmi**, GM sója je pre životné prostredie horšia než ne-GM sója, či už v systémoch no-till alebo orby;
- Polia s no-till **nezväzujú viac uhlíka** než oraná pôda, ak sa berú do úvahy hĺbky pôdy väčšie ako 30 cm.

Farmárske skúšky vo Veľkej Británii ukázali, že GM plodiny odolné voči herbicídom sú vo všeobecnosti **horšie pre biodiverzitu** než ne-GM plodiny pestované konvenčnými chemicky náročnými metódami.

Dnes je všeobecne akceptované, že GM plodiny odolné voči glyphosatu sú **hlavným faktorom** masívneho poklesu populácie **motýľa monarcha** v USA. Dôvodom je, že **vŕbovka (milkweed)**, jediná potrava lariev monarcha, bola z poľnohospodárskych polí vyhladená postrekovaním glyphosatom na týchto GM plodinách.

14. MÝTUS: GM plodiny môžu „koexistovať“ s ne-GM a organickými plodinami.

PRAVDA: Koexistencia v praxi znamená šírenie kontaminácie ne-GM a organických plodín.

MÝTUS V SKRATKE:
„Koexistencia“ GM plodín s ne-GM a organickými plodinami **nevyhnutne vedie ku kontaminácii** ne-GM a organických plodín. To odoberá možnosť voľby farmárom aj spotrebiteľom a núti všetkých **produkovať a konzumovať plodiny, ktoré môžu byť GM kontaminované** do neurčitej budúcnosti.

Od prvého uvedenia GMO došlo k **množstvu prípadov kontaminácie GM** plodín, pretože GMO priemysel nedokáže kontrolovať šírenie svojich patentovaných génov. Tieto udalosti stáli potravinársky a GMO priemysel aj vládu USA **miliardy dolárov** v dôsledku stratených trhov, súdnych odškodnení, kompenzácií pre producentov a stiahnutia produktov z trhu.

GM plodiny **nemusia byť komerčne pestované**, aby spôsobili kontamináciu. Došlo k mnohým incidentom kontaminácie ne-GM plodín a potravín z údajne kontrolovaných pokusných polí a obmedzených uvoľnení. Mnohé z týchto incidentov sa stali v **USA**.

Prieskum organických farmárov v USA zistil, že **jeden z troch farmárov** sa stretol s kontamináciou GMO na svojej farme. Z tejto kontaminovanej produkcie malo 52 % farmárov **zásielky odmietnuté kupujúcim** kvôli obsahu GMO. **Priemerná strata** z odmietnutia zásielky pre prítomnosť GMO počas jednej sezóny bola 4 500 USD.

15. MÝTUS: GM plodiny sú potrebné pre uživenie sveta.

PRAVDA: GM plodiny sú bezvýznamné z hľadiska potravinovej bezpečnosti

MÝTUS V SKRATKE:
Zastáncovia GMO opakovane tvrdia, že GM plodiny sú potrebné na **uživenie rastúcej svetovej populácie**. **Toto však nie je pravda.** Už dnes vyrábame dosť potravín pre **14 miliárd ľudí**, čo je oveľa viac, než bude potrebné na kŕmenie predpokladanej svetovej populácie 9 miliárd v roku 2050.

Ľudia sú hladní nie kvôli nedostatku potravín, ale kvôli **chudobe**: nemôžu si dovoliť kúpiť jedlo a nemajú pôdu, na ktorej by ho mohli pestovať.

Konvenčné šľachtenie rastlín **naďalej prekonáva GMO** pri produkcii plodín s vyššou úrodou a ďalšími užitočnými vlastnosťami, ako je odolnosť voči extrémnemu počasiu a cnekvalitnej pôde, odolnosť voči chorobám s komplexnými znakmi a zvýšená nutričná hodnota.

Experimenty s GM plodinami zamerané na **chudobných a malých farmárov v Afrike** skončili neúspechom. Medzitým boli ne-GM alternatívy vyvinuté za **zlomok nákladov a oveľa kratší čas** než bolo potrebné na vytvorenie GM verzií.

POUŽITÉ ZDROJE PRE 1. KAPITOLU:

1. GeneWatch UK. ASA rules that Monsanto adverts were misleading: GeneWatch UK complaints upheld [press release].http://www.genewatch.org/article.shtml?als[cid]=492860&als[itemid]=507856. Published August 10, 1999.

2. European Parliament and Council. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC. Off J Eur Communities. April 2001:1–38. http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32001L0018.

3. Secretariat of the Convention on Biological Diversity. Cartagena Protocol on Biosafety to the Convention on Biological Diversity. Montreal; 2000. http://bch.cbd.int/protocol/text/.

4. United Nations Convention on Biological Diversity. List of parties: Cartagena Protocol. https://www.cbd.int/information/parties.shtml. Published 2018.

5. Codex Alimentarius. Foods Derived from Modern Biotechnology (2nd Ed.). Rome, Italy: World Health Organization/Food and Agriculture Organization of the United Nations; 2009. ftp://ftp.fao.org/codex/Publications/Booklets/Biotech/Biotech_2009e.pdf.

6. Codex Alimentarius. Guideline for the Conduct of Food Safety Assessment of Foods Derived from Recombinant-DNA Plants: CAC/GL 45-2003.; 2003.

7. Bawden T. GM crops are safer than conventional crops, says Environment Secretary Owen Paterson. The Independent. http://www.independent.co.uk/life-style/food-and-drink/news/gm-crops-are-safer-than-conventional-crops-says-environment-secretary-owen-paterson-8665872.html. Published June 20, 2013. Accessed August 13, 2014.

8. Rush T. Europe “must switch to GM for precision.” Farmers Guardian. http://www.farmersguardian.com/home/arable/arable-news/europe-%E2%80%98must-switch-to-gm-for-precision%E2%80%99/28657.article. Published November 6, 2009.

9. Latham JR, Wilson AK, Steinbrecher RA. The mutational consequences of plant transformation. J Biomed Biotechnol. 2006;2006:1–7. doi:10.1155/JBB/2006/25376

10. Wilson AK, Latham JR, Steinbrecher RA. Transformation-induced mutations in transgenic plants: Analysis and biosafety implications. Biotechnol Genet Eng Rev. 2006;23:209–238. http://www.ncbi.nlm.nih.gov/pubmed/22530509.

11. Phillips McDougall. The Cost and Time Involved in the Discovery, Development and Authorisation of a New Plant Biotechnology Derived Trait: A Consultancy Study for Crop Life International. Pathhead, Midlothian; 2011.

12. Goodman MM. New sources of germplasm: Lines, transgenes, and breeders. In: Martinez JM, ed. Memoria Congresso Nacional de Fitogenetica. Univ Autonimo Agr Antonio Narro, Saltillo, Coah, Mexico; 2002:28–41. http://www.cropsci.ncsu.edu/maize/publications/NewSources.pdf.

13. Academics Review. The use of tissue culture in plant breeding is not new. http://bit.ly/I7fPc9. Published 2014.

14. Coghlan A. Monsanto’s Roundup-Ready soy beans cracking up. New Sci. November 1999. http://www.biosafety-info.net/article.php?aid=250.

15. Pusztai A, Bardocz S, Ewen SWB. Genetically modified foods: Potential human health effects. In: D’Mello JPF, ed. Food Safety: Contaminants and Toxins. Wallingford, Oxon: CABI Publishing; 2003:347–372. http://www.leopold.iastate.edu/sites/default/files/events/Chapter16.pdf.

16. Stauffer C. UPDATE 1-Brazil farmers say GMO corn no longer resistant to pests. Reuters. http://www.reuters.com/article/2014/07/28/brazil-corn-pests-idUSL2N0Q327P20140728. Published July 28, 2014.

17. MASIPAG (Philippines). 10 Years of Failure, Farmers Deceived by GM Corn.; 2013. https://www.youtube.com/watch?v=hCuWs8K9-kI&list=LL6feir9VTqIG5CV3-V29IcQ&feature=mh_lolz.

18. Patel R. Making up Makhatini. In: Stuffed and Starved. London, UK: Portobello Books; 2007:153–158.

19. Hammadi S. Bangladeshi farmers caught in row over $600,000 GM aubergine trial. The Guardian. http://www.theguardian.com/environment/2014/jun/05/gm-crop-bangladesh-bt-brinjal. Published June 5, 2014. Accessed July 27, 2014.

20. Gillam C. Scientists warn EPA on Monsanto corn rootworm. Reuters. http://www.reuters.com/article/2012/03/09/us-monsanto-corn-idUSBRE82815Z20120309. Published March 9, 2012.

21. Gurian-Sherman D. Failure to Yield: Evaluating the Performance of Genetically Engineered Crops. Cambridge, MA: Union of Concerned Scientists; 2009. http://www.ucsusa.org/assets/documents/food_and_agriculture/failure-to-yield.pdf.

22. Abel CA, Adamczyk JJ. Relative concentration of Cry1A in maize leaves and cotton bolls with diverse chlorophyll content and corresponding larval development of fall armyworm (Lepidoptera: Noctuidae) and southwestern corn borer (Lepidoptera: Crambidae) on maize whorl leaf profiles. J Econ Entomol. 2004;97(5):1737-1744.

23. Bruns HA, Abel CA. Effects of nitrogen fertility on Bt endotoxin levels in maize. J Entomol Sci. 2007;42(1):35–43. http://wiki.pestinfo.org/wiki/Journal_of_Entomological_Science_%282007%29_42,_35-43.

24. Jones JDG, Witek K, Verweij W, et al. Elevating crop disease resistance with cloned genes. Philos Trans R Soc B Biol Sci. 2014;369(1639):20130087. doi:10.1098/rstb.2013.0087

25. Rommens CM. Intragenic crop improvement: Combining the benefits of traditional breeding and genetic engineering. J Agric Food Chem. 2007;55:4281-4288. doi:10.1021/jf0706631

26. Rommens CM, Haring MA, Swords K, Davies HV, Belknap WR. The intragenic approach as a new extension to traditional plant breeding. Trends Plant Sci. 2007;12:397-403. doi:10.1016/j.tplants.2007.08.001

27. Schouten HJ, Krens FA, Jacobsen E. Cisgenic plants are similar to traditionally bred plants. EMBO Rep. 2006;7(8):750-753. doi:10.1038/sj.embor.7400769

28. Schouten HJ, Krens FA, Jacobsen E. Do cisgenic plants warrant less stringent oversight? Nat Biotechnol. 2006;24(7):753-753. doi:10.1038/nbt0706-753

29. Viswanath V, Strauss SH. Modifying plant growth the cisgenic way. ISB News. September 2010.

30. Rommens CM. All-native DNA transformation: a new approach to plant genetic engineering. Trends Plant Sci. 2004;9(9):457-464. doi:10.1016/j.tplants.2004.07.001

31. Wilson A, Latham J. Cisgenic plants: Just Schouten from the hip? Indep Sci News. February 2007. http://www.independentsciencenews.org/health/cisgenic-plants/.

32. Rommens CM, Humara JM, Ye J, et al. Crop improvement through modification of the plant's own genome. Plant Physiol. 2004;135(1):421-431. doi:10.1104/pp.104.040949

33. Schubert D, Williams D. “Cisgenic” as a product designation: Letter to Nature Biotechnology. Nat Biotechnol. 2006;24(11):1327-1329. doi:10.1038/nbt1106-1327

34. Bergelson J, Purrington CB, Palm CJ, Lopez-Gutierrez JC. Costs of resistance: A test using transgenic Arabidopsis thaliana. Proc Biol Sci. 1996;263:1659-1663. doi:10.1098/rspb.1996.0242

35. Purrington CB, Bergelson J. Fitness consequences of genetically engineered herbicide and antibiotic resistance in Arabidopsis thaliana. Genetics. 1997;145(3):807-814.

36. Bergelson J, Purrington CB, Wichmann G. Promiscuity in transgenic plants. Nature. 1998;395:25. doi:10.1038/25626

37. Bergelson J, Purrington C. Factors affecting the spread of resistant Arabidopsis thaliana populations. In: Letourneau D, Elpern Burrows B, eds. Genetically Engineered Organisms. CRC Press; 2001:17-31. http://www.crcnetbase.com/doi/abs/10.1201/9781420042030.ch2. Accessed March 22, 2014.

POUŽITÉ ZDROJE PRE 2. KAPITOLU:

1. Adli M. The CRISPR tool kit for genome editing and beyond. Nat Commun. 2018;9(1):1911. doi:10.1038/s41467-018-04252-2

2. Waryah CB, Moses C, Arooj M, Blancafort P. Zinc fingers, TALEs, and CRISPR systems: A comparison of tools for epigenome editing. Methods Mol Biol Clifton NJ. 2018;1767:19-63. doi:10.1007/978-1-4939-7774-1_2

3. Kim J-S. Precision genome engineering through adenine and cytosine base editing. Nat Plants. 2018;4(3):148-151. doi:10.1038/s41477-018-0115-z

4. Lowder LG, Paul JW, Qi Y. Multiplexed transcriptional activation or repression in plants using CRISPR-dCas9-based systems. Methods Mol Biol Clifton NJ. 2017;1629:167-184. doi:10.1007/978-1-4939-7125-1_12

5. Kumar S, Fladung M. Controlling transgene integration in plants. Trends Plant Sci. 2001;6:155–9. http://www.ncbi.nlm.nih.gov/pubmed/11286920.

6. Ow DW. Recombinase-directed plant transformation for the post-genomic era. Plant Mol Biol. 2002;48:183-200. http://www.ncbi.nlm.nih.gov/pubmed/11860209.

7. Li Z, Moon BP, Xing A, et al. Stacking multiple transgenes at a selected genomic site via repeated recombinase-mediated DNA cassette exchanges. Plant Physiol. 2010;154:622-631. doi:10.1104/pp.110.160093

8. Shukla VK, Doyon Y, Miller JC, et al. Precise genome modification in the crop species Zea mays using zinc-finger nucleases. Nature. 2009;459(7245):437-441. doi:10.1038/nature07992

9. Townsend JA, Wright DA, Winfrey RJ, et al. High-frequency modification of plant genes using engineered zinc-finger nucleases. Nature. 2009;459(7245):442-445. doi:10.1038/nature07845

10. Shen H. CRISPR technology leaps from lab to industry. Nature. December 2013. doi:10.1038/nature.2013.14299

11. Carroll D, Van Eenennaam AL, Taylor JF, Seger J, Voytas DF. Regulate genome-edited products, not genome editing itself. Nat Biotechnol. 2016;34(5):477-479. doi:10.1038/nbt.3566

12. Le Page M. Judge gene-edited crops by what they do, not how they are made. New Sci. April 2016. https://www.newscientist.com/article/2085611-judge-gene-edited-crops-by-what-they-do-not-how-they-are-made/. Accessed July 5, 2017.

13. Ryffel GU. I have a dream: Organic movements include gene manipulation to improve sustainable farming. Sustainability. 2017;9(3):392. http://www.mdpi.com/2071-1050/9/3/392/htm. Accessed July 5, 2017.

14. European Parliament and Council. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC. Off J Eur Communities. April 2001:1–38. http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32001L0018.

15. Mussolino C, Morbitzer R, Lutge F, Dannemann N, Lahaye T, Cathomen T. A novel TALE nuclease scaffold enables high genome editing activity in combination with low toxicity. Nucleic Acids Res. 2011;39(21):9283-9293. doi:10.1093/nar/gkr597

16. Pattanayak V, Ramirez CL, Joung JK, Liu DR. Revealing off-target cleavage specificities of zinc-finger nucleases by in vitro selection. Nat Methods. 2011;8(9):765-770. doi:10.1038/nmeth.1670

17. Gabriel R, Lombardo A, Arens A, et al. An unbiased genome-wide analysis of zinc-finger nuclease specificity. Nat Biotechnol. 2011;29(9):816-823. doi:10.1038/nbt.1948

18. Fu Y, Foden JA, Khayter C, et al. High-frequency off-target mutagenesis induced by CRISPR-Cas nucleases in human cells. Nat Biotechnol. 2013;31(9):822-826. doi:10.1038/nbt.2623

19. Yang L, Grishin D, Wang G, et al. Targeted and genome-wide sequencing reveal single nucleotide variations impacting specificity of Cas9 in human stem cells. Nat Commun. 2014;5. doi:10.1038/ncomms6507

20. Bortesi L, Zhu C, Zischewski J, et al. Patterns of CRISPR/Cas9 activity in plants, animals and microbes. Plant Biotechnol J. 2016;14(12):2203-2216. doi:10.1111/pbi.12634

21. Mehta D, Stürchler A, Hirsch-Hoffmann M, Gruissem W, Vanderschuren H. CRISPR-Cas9 interference in cassava linked to the evolution of editing-resistant geminiviruses. bioRxiv. May 2018:314542. doi:10.1101/314542

22. Unckless RL, Clark AG, Messer PW. Evolution of resistance against CRISPR/Cas9 gene drive. Genetics. 2017;205(2):827-841. doi:10.1534/genetics.116.197285

23. Braatz J, Harloff H-J, Mascher M, Stein N, Himmelbach A, Jung C. CRISPR-Cas9 targeted mutagenesis leads to simultaneous modification of different homoeologous gene copies in polyploid oilseed rape (Brassica napus). Plant Physiol. 2017;174(2):935-942. doi:10.1104/pp.17.00426

24. Shin HY, Wang C, Lee HK, et al. CRISPR/Cas9 targeting events cause complex deletions and insertions at 17 sites in the mouse genome. Nat Commun. 2017;8. doi:10.1038/ncomms15464

25. Mou H, Smith JL, Peng L, et al. CRISPR/Cas9-mediated genome editing induces exon skipping by alternative splicing or exon deletion. Genome Biol. 2017;18:108. doi:10.1186/s13059-017-1237-8

26. Wang Z, Wang S, Li D, et al. Optimized paired-sgRNA/Cas9 cloning and expression cassette triggers high-efficiency multiplex genome editing in kiwifruit. Plant Biotechnol J. January 2018. doi:10.1111/pbi.12884

27. Li R, Li R, Li X, et al. Multiplexed CRISPR/Cas9-mediated metabolic engineering of γ-aminobutyric acid levels in Solanum lycopersicum. Plant Biotechnol J. 2018;16(2):415-427. doi:10.1111/pbi.12781

28. Li X, Wang Y, Chen S, et al. Lycopene is enriched in tomato fruit by CRISPR/Cas9-mediated multiplex genome editing. Front Plant Sci. 2018;9:559. doi:10.3389/fpls.2018.00559

29. Shen L, Hua Y, Fu Y, et al. Rapid generation of genetic diversity by multiplex CRISPR/Cas9 genome editing in rice. Sci China Life Sci. 2017;60(5):506-515. doi:10.1007/s11427-017-9008-8

30. Cibus. BASF and Cibus achieve development milestone in CLEARFIELD® production system [press release]. http://www.cibus.com/press/press012709.php. Published Undated.

31. Calyxt. Improved quality potato. http://www.calyxt.com/products/improved-quality-potato/. Published 2017. Accessed July 9, 2017.

32. Robinson C. The superfluous GMO potato. GMWatch. March 2015. http://gmwatch.org/en/news/latest-news/15988-the-superfluous-gmo-potato. Accessed July 10, 2017.

33. Vivanti V, Finotti E, Friedman M. Level of acrylamide precursors asparagine, fructose, glucose, and sucrose in potatoes sold at retail in Italy and in the United States. J Food Sci. 2006;71(2):C81-C85. doi:10.1111/j.1365-2621.2006.tb08886.x

34. CIGAN AM, Gadlage MJ, Gao H, Meeley RB, Young JK. Waxy corn. August 2017. https://patents.google.com/patent/WO2017132239A1/en. Accessed July 7, 2018.

35. Sander J, Jeschke M. CRISPR-Cas Advanced Plant Breeding. pioneer.com. https://www.pioneer.com/home/site/us/agronomy/library/crispr-cas/. Published 2018. Accessed July 7, 2018.

36. Waltz E. Gene-edited CRISPR mushroom escapes US regulation. Nature. 2016;532(7599). https://www.nature.com/news/gene-edited-crispr-mushroom-escapes-us-regulation-1.19754. Accessed July 6, 2018.

37. Benz-Schwarzburg J, Ferrari A. The problem with super-muscly pigs. Slate. June 2016. http://www.slate.com/articles/technology/future_tense/2016/06/the_ethical_problems_with_super_muscly_pigs.html?via=gdpr-consent&via=gdpr-consent. Accessed July 6, 2018.

38. Cyranoski D. Super-muscly pigs created by small genetic tweak. Nat News. 2015;523(7558):13. doi:10.1038/523013a

39. Cibus. The evolution of plant breeding: RTDSTM versus other technologies. Undated. http://web.archive.org/web/20160820030839/http://www.cibus.com/pdfs/RtdsSketch4_LoRes.pdf.

40. Food Ingredients First. FDA concludes Arctic Apples and Innate Potatoes are safe for consumption. foodingredientsfirst.com. http://www.foodingredientsfirst.com/news/FDA-Concludes-Arctic-Apples-and-Innate-Potatoes-Are-Safe-for-Consumption.html. Published March 23, 2015. Accessed July 7, 2018.

41. Zhang J, Khan SA, Heckel DG, Bock R. Next-generation insect-resistant plants: RNAi-mediated crop protection. Trends Biotechnol. May 2017. doi:10.1016/j.tibtech.2017.04.009

42. San Miguel K, Scott JG. The next generation of insecticides: dsRNA is stable as a foliar-applied insecticide. Pest Manag Sci. 2016;72(4):801-809. doi:10.1002/ps.4056

43. Heinemann J, Agapito-Tenfen SZ, Carman J. A comparative evaluation of the regulation of GM crops or products containing dsRNA and suggested improvements to risk assessments.

Environ Int. 2013;55:43–55. http://www.sciencedirect.com/science/article/pii/S0160412013000494#.

44. Lundgren JG, Duan JJ. RNAi-based insecticidal crops: Potential effects on nontarget species. Bioscience. 2013;63:657–665.

45. Zhang L, Hou D, Chen X, et al. Exogenous plant MIR168a specifically targets mammalian LDLRAP1: Evidence of cross-kingdom regulation by microRNA. Cell Res. 2012;22(1):107-126. doi:10.1038/cr.2011.158

46. Dickinson B, Zhang Y, Petrick JS, Heck G, Ivashuta S, Marshall WS. Lack of detectable oral bioavailability of plant microRNAs after feeding in mice. Nat Biotechnol. 2013;31(11):965-967. doi:10.1038/nbt.2737

47. Chen X, Zen K, Zhang C-Y. Reply to Lack of detectable oral bioavailability of plant microRNAs after feeding in mice. Nat Biotechnol. 2013;31(11):967-969. doi:10.1038/nbt.2741

48. Liu Y-C, Chen WL, Kung W-H, Huang H-D. Plant miRNAs found in human circulating system provide evidences of cross kingdom RNAi. BMC Genomics. 2017;18(2):112. doi:10.1186/s12864-017-3502-3

49. Witwer KW, Zhang C-Y. Diet-derived microRNAs: unicorn or silver bullet? Genes Nutr. 2017;12. doi:10.1186/s12263-017-0564-4

50. Zhao Y, Cong L, Lukiw WJ. Plant and animal microRNAs (miRNAs) and their potential for inter-kingdom communication. Cell Mol Neurobiol. 2018;38(1):133-140. doi:10.1007/s10571-017-0547-

POUŽITÉ ZDROJE PRE 3. KAPITOLU:

1. European Commission. GMOs in a nutshell. https://web.archive.org/web/20130325065426/http://ec.europa.eu/food/food/biotechnology/qanda/a1_en.print.htm. Published April 30, 2009.

2. Monsanto. Commonly asked questions about the food safety of GMOs. http://www.monsanto.com/newsviews/Pages/food-safety.aspx. Published 2013.

3. Tokar B. Deficiencies in Federal Regulatory Oversight of Genetically Engineered Crops. Institute for Social Ecology Biotechnology Project; 2006. http://environmentalcommons.org/RegulatoryDeficiencies.html.

4. Freese W, Schubert D. Safety testing and regulation of genetically engineered foods. Biotechnol Genet Eng Rev. 2004:299-324. http://www.saveourseeds.org/downloads/schubert_safety_reg_us_11_2004.pdf.

5. Michaels D. Doubt Is Their Product: How Industry's Assault on Science Threatens Your Health. Oxford University Press; 2008.

6. Barnes DE, Bero LA. Why review articles on the health effects of passive smoking reach different conclusions. JAMA. 1998;279:1566-1570. http://www.ncbi.nlm.nih.gov/pubmed/9605902.

7. Lexchin J, Bero LA, Djulbegovic B, Clark O. Pharmaceutical industry sponsorship and research outcome and quality: systematic review. Br Med J. 2003;326:1167. doi:10.1136/bmj.326.7400.1167

8. Lexchin J. Those who have the gold make the evidence: How the pharmaceutical industry biases the outcomes of clinical trials of medications. Sci Eng Ethics. February 2011. doi:10.1007/s11948-011-9265-3

9. Bekelman JE, Li Y, Gross CP. Scope and impact of financial conflicts of interest in biomedical research: a systematic review. JAMA. 2003;289:454-465. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12533125.

10. Huss A, Egger M, Hug K, Huweiler-Müntener K, Röösli M. Source of funding and results of studies of health effects of mobile phone use: Systematic review of experimental studies. Environ Health Perspect. 2007;115:1–4.

11. Diels J, Cunha M, Manaia C, Sabugosa-Madeira B, Silva M. Association of financial or professional conflict of interest to research outcomes on health risks or nutritional assessment studies of genetically modified products. Food Policy. 2011;36:197–203. http://www.sciencedirect.com/science/article/pii/S0306919210001302.

12. Guillemaud T, Lombaert E, Bourguet D. Conflicts of interest in GM Bt crop efficacy and durability studies. PLOS ONE. 2016;11(12):e0167777. doi:10.1371/journal.pone.0167777

13. Kahl L. Memorandum to Dr James Maryanski, FDA Biotechnology Coordinator, about the Federal Register Document, "Statement of Policy: Foods from Genetically Modified Plants." US Food & Drug Administration; 1992. http://www.biointegrity.org.

14. Guest GB. Memorandum to Dr James Maryanski, Biotechnology Coordinator: Regulation of Transgenic Plants – FDA Draft Federal Register Notice on Food Biotechnology. US Department of Health & Human Services; 1992. http://www.biointegrity.org.

15. Matthews EJ. Memorandum to Toxicology Section of the Biotechnology Working Group: "Safety of Whole Food Plants Transformed by Technology Methods." US Food & Drug Administration; 1991. http://www.biointegrity.org.

16. Shibko SL. Memorandum to James H. Maryanski, Biotechnology Coordinator, CFSAN: Revision of Toxicology Section of the "Statement of Policy: Foods Derived from Genetically Modified Plants." US Food & Drug Administration; 1992. http://www.biointegrity.org.

17. Pribyl LJ. Comments on the March 18, 1992 Version of the Biotechnology Document. US Food & Drug Administration; 1992. http://www.biointegrity.org.

18. Pribyl LJ. Comments on Biotechnology Draft Document, 2/27/92. US Food & Drug Administration; 1992. http://www.biointegrity.org.

19. Sudduth MA. Genetically engineered foods – fears and facts: An interview with FDA's Jim Maryanski. FDA Consum. January 1993:11–14. http://web.archive.org/web/20090202053904/http://www.fda.gov/bbs/topics/consumer/Con00191.html.

20. Bittman M. Why aren't GMO foods labeled? New York Times. http://opinionator.blogs.nytimes.com/2011/02/15/why-arent-g-m-o-foods-labeled/. Published February 15, 2011.

21. Nestle M. Food Politics: How the Food Industry Influences Nutrition and Health. Revised 15 October 2007. University of California Press; 2002.

22. US Food and Drug Administration (FDA). Meet Michael R. Taylor, J.D., deputy commissioner for foods. http://www.fda.gov/AboutFDA/CentersOffices/OfficeofFoods/ucm196721.htm. Published January 30, 2013.

23. FAS (Federation of American Scientists). US Regulation of genetically modified crops. FAS: Case Studies in Agricultural Biosecurity. https://fas.org/biosecurity/education/dualuse-

agriculture/2.-agricultural-biotechnology/us-regulation-of-genetically-engineered-crops.html. Published 2011.

24. US EPA. Summary of the Federal Insecticide, Fungicide, and Rodenticide Act 7 U.S.C. §136 et seq. (1996). epa.gov. https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act. Published 2017.

25. Acosta L. Restrictions on genetically modified organisms: United States. Library of Congress. https://www.loc.gov/law/help/restrictions-on-gmos/usa.php. Published March 2014. Accessed July 13, 2017.

26. Pew Initiative on Food and Biotechnology. Guide to US Regulation of Genetically Modified Food and Agricultural Biotechnology Products. Washington, DC: Pew Initiative on Food and Biotechnology; 2001. http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/food_and_biotechnology/hhsbiotech0901pdf.pdf.

27. Robinson C, Antoniou M. The Impossible Burger: Boon or risk to health and environment? GMO Science. https://www.gmoscience.org/impossible-burger-boon-risk-health-environment/. Published May 16, 2018. Accessed July 8, 2018.

28. US Food and Drug Administration (FDA). Biotechnology Consultation Agency Response Letter BNF No. 000001.; 1995. https://www.fda.gov/Food/IngredientsPackagingLabeling/GEPlants/Submissions/ucm161129.htm.

29. Gurian-Sherman D. A hole in the regulation of GMOs that kudzu could fit through. Union of Concerned Scientists. http://blog.ucsusa.org/doug-gurian-sherman/a-hole-in-the-regulation-of-gmos-that-kudzu-could-fit-through-402. Published February 3, 2014. Accessed July 13, 2017.

30. Montgomery E. Genetically modified plants and regulatory loopholes and weaknesses under the Plant Protection Act. Vt Law Rev. 2012;37:351–379. lawreview.vermontlaw.edu/wp-content/uploads/2013/02/03-Montgomery1.pdf.

31. Euractiv.com. US lobbied EU to back GM crops: WikiLeaks.http://www.euractiv.com/global-europe/us-lobbied-eu-back-gm-crops-wikileaks-news-500960. Published January 4, 2011.

32. EINNEWS. Wikileaks document pushes genetically modified food for African countries.http://www.einnews.com/pr-news/248883-wikileaks-document-pushes-genetically-modified-food-for-african-countries. Published December 1, 2010.

33. Laskawy T. Wikileaks: State Dept wants intel on African acceptance of GMOs. GRIST. http://www.grist.org/article/2010-11-29-wikileaks-state-dept-wants-intel-on-african-acceptance-of-gmos. Published November 30, 2010.

34. Pollan M. Playing God in the garden. New York Times Magazine. http://www.nytimes.com/1998/10/25/magazine/playing-god-in-the-garden.html. Published October 25, 1998.

35. US Food and Drug Administration (FDA). Statement of policy: Foods derived from new plant varieties. FDA Fed Regist. 1992;57(104):22984. http://www.fda.gov/food/guidanceregulation/guidancedocumentsregulatoryinformation/biotechnology/ucm096095.htm.

36. European Food Safety Authority (EFSA). Frequently asked questions on EFSA GMO risk assessment. May 2006. http://www.cibpt.org/docs/faq-efsa-gmo-risk-assessment.pdf.

37. Food & Water Watch. 64 Countries label GMOs. Guess which one doesn't? foodandwaterwatch.org. https://www.foodandwaterwatch.org/impact/64-countries-label-gmos-guess-which-one-doesn't. Published February 29, 2016.

38. Plumer B. The controversial GMO labeling bill that just passed Congress, explained. Vox. https://www.vox.com/2016/7/7/12111346/gmo-labeling-bill-congress. Published July 7, 2016. Accessed July 4, 2018.

39. US Food and Drug Administration (FDA). CFR - Code of Federal Regulations Title 21, Volume 3 (Revised 1 April 2013): 21CFR170.30. April 2013. http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfCFR/CFRSearch.cfm?fr=170.30.

40. Maryanski J. Letter from Dr James Maryanski, Biotechnology Coordinator, to Dr Bill Murray, Chairman of the Food Directorate, Canada. Subject: the safety assessment of foods and food ingredients developed through new biotechnology. October 1991. http://www.biointegrity.org/FDAdocs/06/view1.html.

41. Royal Society of Canada. Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada. An Expert Panel Report on the Future of Food Biotechnology.; 2001. https://rsc-src.ca/sites/default/files/pdf/GMreportEN.pdf.

42. Hilbeck A, Binimelis R, Defarge N, et al. No scientific consensus on GMO safety. Environ Sci Eur. 2015;27(1):4. doi:10.1186/s12302-014-0034-1

43. Millstone E, Brunner E, Mayer S. Beyond “substantial equivalence.” Nature. 1999;401:525–6. doi:10.1038/44006

44. Howard CV. GM crops inquiry: Testimony of Prof C. Vyvyan Howard to the Scottish Parliament Health and Community Care Committee, meeting no. 31, 27 November 2002. 2002. http://archive.scottish.parliament.uk/business/committees/historic/health/or-02/he02-3102.htm.

45. Organisation for Economic Cooperation and Development (OECD). Safety Evaluation of Foods Derived by Modern Biotechnology: Concepts and Principles. OECD Publishing; 1993. http://dbtbiosafety.nic.in/guideline/OACD/Concepts_and_Principles_1993.pdf.

46. Then C, Bauer-Panskus A. European Food Safety Authority: A Playing Field for the Biotech Industry. Munich, Germany: Testbiotech; 2010. http://www.testbiotech.de/en/node/431.

47. Levidow L, Murphy J, Carr S. Recasting “substantial equivalence”: Transatlantic governance of GM food. Sci Technol Hum Values. 2007;32:26–64.

48. European Parliament and Council. Commission implementing regulation (EU) no. 503/2013 of 3 April 2013 on applications for authorisation of genetically modified food and feed in accordance with Regulation (EC) No 1829/2003 of the European Parliament and of the Council and amending Commission Regulations (EC) No 641/2004 and (EC) No 1981/2006. Off J Eur Union. June 2013. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:157:0001:0048:EN:PDF.

49. Séralini GE, Clair E, Mesnage R, et al. [RETRACTED:] Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. Food Chem Toxicol. 2012;50:4221-4231. http://www.sciencedirect.com/science/article/pii/S0278691512005637.

50. de Vendomois JS, Roullier F, Cellier D, Séralini GE. A comparison of the effects of three GM corn varieties on mammalian health. Int J Biol Sci. 2009;5:706–26. http://www.ncbi.nlm.nih.gov/pubmed/20011136 http://www.biolsci.org/v05p0706.htm.

51. Pusztai A. Genetically modified foods: Are they a risk to human/animal health? Actionbioscience.org. http://www.actionbioscience.org/biotech/pusztai.html. Published June 2001.

52. Pusztai A, Bardocz S. GMO in animal nutrition: Potential benefits and risks. In: Mosenthin R, Zentek J, Zebrowska T, eds. Biology of Nutrition in Growing Animals. Vol 4. Elsevier Limited; 2006:513–540. http://www.sciencedirect.com/science/article/pii/S1877182309701043.

53. Lotter D. The genetic engineering of food and the failure of science – Part 1: The development of a flawed enterprise. Int Jrnl Soc Agr Food. 2008;16:31–49. http://www.ijsaf.org/archive/16/1/lotter1.pdf.

54. Mesnage R, Agapito-Tenfen SZ, Vilperte V, et al. An integrated multi-omics analysis of the NK603 Roundup-tolerant GM maize reveals metabolism disturbances caused by the transformation process. Sci Rep. 2016;6:37855. doi:10.1038/srep37855

55. Lappé M, Bailey B, Childress C, Setchell KDR. Alterations in clinically important phytoestrogens in genetically modified herbicide-tolerant soybean. J Med Food. 1999;1:241–245. http://www.mindfully.org/GE/Phytoestrogen-Alteration-GM-Soybeans1jul99.htm.

56. Padgette SR, Taylor NB, Nida DL, et al. The composition of glyphosate-tolerant soybean seeds is equivalent to that of conventional soybeans [Supplementary information from Puerto Rico trials, excluded from the main publication but deposited with the American Society for Information Science, National Auxiliary Publication Service (NAPS) and in the archives of the Journal of Nutrition]. J Nutr. 1996;126(3):702-716.

57. Shewmaker C, Sheehy JA, Daley M, Colburn S, Ke DY. Seed-specific overexpression of phytoene synthase: Increase in carotenoids and other metabolic effects. Plant J. 1999;20:401–412X.

58. Jiao Z, Si XX, Li GK, Zhang ZM, Xu XP. Unintended compositional changes in transgenic rice seeds (Oryza sativa L.) studied by spectral and chromatographic analysis coupled with chemometrics methods. J Agric Food Chem. 2010;58:1746-1754. doi:10.1021/jf902676y

59. Zolla L, Rinalducci S, Antonioli P, Righetti PG. Proteomics as a complementary tool for identifying unintended side effects occurring in transgenic maize seeds as a result of genetic modifications. J Proteome Res. 2008;7:1850-1861. doi:10.1021/pr0705082

60. Abdo EM, Barbary OM, Shaltout OE. Chemical analysis of Bt corn "Mon-810: Ajeeb-YG®" and its counterpart non-Bt corn "Ajeeb." IOSR J Appl Chem. 2013;4(1):55–60.

61. Hernández-Terán A, Wegier A, Benítez M, Lira R, Escalante AE. Domesticated, genetically engineered, and wild plant relatives exhibit unintended phenotypic differences: A comparative meta-analysis profiling rice, canola, maize, sunflower, and pumpkin. Front Plant Sci. 2017;8:2030. doi:10.3389/fpls.2017.02030

62. Gab-Alla AA, El-Shamei ZS, Shatta AA, Moussa EA, Rayan AM. Morphological and biochemical changes in male rats fed on genetically modified corn (Ajeeb YG). J Am Sci. 2012;8(9):1117–1123. https://www.academia.edu/3138607/Morphological_and_Biochemical_Changes_in_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

63. El-Shamei ZS, Gab-Alla AA, Shatta AA, Moussa EA, Rayan AM. Histopathological changes in some organs of male rats fed on genetically modified corn (Ajeeb YG). J Am Sci. 2012;8(10):684–696. https://www.academia.edu/3405345/Histopathological_Changes_in_Some_Organs_of_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

64. Kok EJ, Kuiper HA. Comparative safety assessment for biotech crops. Trends Biotechnol. 2003;21:439–444. http://www.ncbi.nlm.nih.gov/pubmed/14512230.

65. European Food Safety Authority (EFSA). Annual Declaration of Interests – Esther Kok. Parma, Italy: EFSA; 2010.

66. International Life Sciences Institute (ILSI). Nutritional and safety assessments of foods and feeds nutritionally improved through biotechnology, prepared by a task force of the ILSI International Food Biotechnology Committee. Compr Rev Food Sci Food Saf. 2004;3:38–104.

67. European Parliament and Council. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC. Off J Eur Communities. April 2001:1–38. http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32001L0018.

68. Padgette SR, Taylor NB, Nida DL, et al. The composition of glyphosate-tolerant soybean seeds is equivalent to that of conventional soybeans. J Nutr. 1996;126:702-716. http://www.ncbi.nlm.nih.gov/pubmed/8598556.

69. Taylor NB, Fuchs RL, MacDonald J, Shariff AR, Padgette SR. Compositional analysis of glyphosate-tolerant soybeans treated with glyphosate. J Agric Food Chem. 1999;47:4469-4473. http://www.ncbi.nlm.nih.gov/pubmed/10552835.

70. Hammond B, Dudek R, Lemen J, Nemeth M. Results of a 13 week safety assurance study with rats fed grain from glyphosate tolerant corn. Food Chem Toxicol. 2004;42:1003-1014. doi:10.1016/j.fct.2004.02.013

71. Hammond B, Lemen J, Dudek R, et al. Results of a 90-day safety assurance study with rats fed grain from corn rootworm-protected corn. Food Chem Toxicol. 2006;44:147-160. doi:10.1016/j.fct.2005.06.008

72. Hilbeck A, Meier M, Römbke J, Jänsch S, Teichmann H, Tappeser B. Environmental risk assessment of genetically modified plants - concepts and controversies. Environ Sci Eur. 2011;23. doi:10.1186/2190-4715-23-13

73. International Life Sciences Institute (ILSI). ILSI crop composition database: Version 6. 2018. http://www.cropcomposition.org/query/index.html.

74. European Food Safety Authority (EFSA). Guidance on the submission of applications for authorisation of genetically modified food and feed and genetically modified plants for food or feed uses under Regulation (EC) No 1829/2003. EFSA J. 2011;9:1–27. doi:10.2903/j.efsa.2011.2311

POUŽITÉ ZDROJE PRE 4. KAPITOLU:

1. European Parliament and Council. Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC. Off J Eur Communities. April 2001:1–38. http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32001L0018.

2. European Council. Council Directive 90/220/EEC of 23 April 1990 on the deliberate release into the environment of genetically modified organisms. May 1990. http://data.europa.eu/eli/dir/1990/220/oj/eng. Accessed July 5, 2018.

3. Anon. Atomic gardens: Interview with Paige Johnson. Pruned. http://pruned.blogspot.com/2011/04/atomic-gardens.html. Published April 20, 2011.

4. Food and Agriculture Organization (FAO) and International Atomic Energy Agency (IAEA). Mutant variety database (MVGS). http://mvgs.iaea.org/. Published 2010.

5. Kodym A, Afza R. Physical and chemical mutagenesis. Methods Mol Biol. 2003;236:189-204. doi:10.1385/1-59259-413-1:189

6. Novak FJ, Brunner H. Plant breeding: Induced mutation technology for crop improvement. IAEA Bull. 1992;4:25–33. http://www.google.co.uk/url?sa=t&source=web&cd=1&ved=0CCEQFjAA&url=http%3A%2F%2Fwww.iaea.org%2FPublications%2FMagazines%2FBulletin%2FBull344%2F34405682533.pdf&ei=17hLTrXOAYfLhAfj4uTrBw&usg=AFQjCNHXEE-6-U8MMn3gIX8HLk2wrM565Q&sig2=swTwYBNHqUpJ63Dll1tj-g.

7. Jain SM. Mutagenesis in crop improvement under the climate change. Romanian Biotechnol Lett. 2010;15:88–106.

8. Ministry of Agriculture and Food (Norway). Svalbard Globale frøhvelv sikrer fremtidens såfrø [Svalbard Global Seed Vault secures future seed]. http://bit.ly/GF2cqY. Published March 5, 2013.

9. BBC News. More seeds for "doomsday vault."http://news.bbc.co.uk/1/hi/sci/tech/7912543.stm. Published February 26, 2009.

10. Sawyer SA, Parsch J, Zhang Z, Hartl DL. Prevalence of positive selection among nearly neutral amino acid replacements in Drosophila. Proc Natl Acad Sci USA. 2007;104:6504-6510. doi:10.1073/pnas.0701572104

11. Acquaah G. Principles of Plant Genetics and Breeding. Oxford, UK: Wiley-Blackwell; 2007. http://bit.ly/17GGkBG.

12. Van Harten AM. Mutation Breeding: Theory and Practical Applications. London: Cambridge University Press; 1998.

13. GM Science Review Panel. First Report: An Open Review of the Science Relevant to GM Crops and Food Based on Interests and Concerns of the Public.; 2003.

14. Ahloowalia BS, Maluszynski M, Nichterlein K. Global impact of mutation-derived varieties. Euphytica. 2004;135:187–204.

15. Maluszynski M, Szarejko I. Induced mutations in the Green and Gene Revolutions. In: Tuberosa R, Phillips RL, Gale M, eds. Bologna, Italy: Avenue Media; 2003.

16. Batista R, Saibo N, Lourenco T, Oliveira MM. Microarray analyses reveal that plant mutagenesis may induce more transcriptomic changes than transgene insertion. Proc Natl Acad Sci USA. 2008;105:3640-3645. doi:10.1073/pnas.0707881105

17. National Research Council. Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects. Washington D.C.: The National Academies Press; 2004. http://www.nap.edu/openbook.php?isbn=0309092094.

18. Latham JR, Wilson AK, Steinbrecher RA. The mutational consequences of plant transformation. J Biomed Biotechnol. 2006;2006:1–7. doi:10.1155/JBB/2006/25376

19. Coghlan A. Monsanto's Roundup-Ready soy beans cracking up. New Sci. November 1999. http://www.biosafety-info.net/article.php?aid=250.

POUŽITÉ ZDROJE PRE 5. KAPITOLU:

1. von Mogel KH. Announcing the launch of the GENERA beta test. Biology Fortified, Inc. http://www.biofortified.org/2014/08/announcing-the-launch-of-the-genera-beta-test/. Published August 25, 2014. Accessed May 5, 2018.

2. Schwab T. Pro-GMO database: Monsanto is most common funder of GMO research. Food & Water Watch. http://www.foodandwaterwatch.org/blogs/pro-gmo-database-monsanto-most-common-funder-gmo-research/. Published September 16, 2014. Accessed January 13, 2015.

3. Food & Water Watch. Public Research, Private Gain: Corporate Influence over University Agricultural Research. Washington, DC: Food & Water Watch; 2012. http://www.foodandwaterwatch.org/news/public-research-private-gain-corporate-influence-over-university-agricultural-research.

4. University of Florida Foundation. 2013/2014 Honor Roll of Donors: President's Council – Gold Level. https://www.uff.ufl.edu/honorroll/Organizations.asp?LN=Gold. Published November 5, 2014. Accessed January 27, 2015.

5. University of Florida Foundation. 2013/2014 Honor Roll of Donors. https://www.uff.ufl.edu/HonorRoll/Default.asp. Published November 5, 2014.

6. Iowa State University Foundation. Monsanto. Iowa State University. http://www.foundation.iastate.edu/s/1463/index.aspx?pgid=1027&gid=1&cid=3248. Published 2013.

7. GeneWatch UK. Commercial interests. GeneWatch UK. http://www.genewatch.org/sub-568236. Published 2015.

8. Rothamsted Research. Collaborators: Monsanto UK Ltd. Rothamsted Research. https://web.archive.org/web/20170327005126/http://www.rothamsted.ac.uk/collaborators/monsanto-uk-ltd. Published 2015.

9. Waltz E. Battlefield. Nature. 2009;461:27–32. doi:10.1038/461027a

10. Waltz E. Under wraps – Are the crop industry's strong-arm tactics and close-fisted attitude to sharing seeds holding back independent research and undermining public acceptance of transgenic crops? Nat Biotechnol. 2009;27(10):880–882. doi:10.1038/nbt1009-880

11. The editors of Scientific American. Do seed companies control GM crop research? Scientific American. http://www.scientificamerican.com/article.cfm?id=do-seed-companies-control-gm-crop-research. Published August 1, 2009.

12. Pollack A. Crop scientists say biotechnology seed companies are thwarting research. New York Times. http://www.nytimes.com/2009/02/20/business/20crop.html. Published February 19, 2009.

13. Waltz E. Monsanto relaxes restrictions on sharing seeds for research. Nat Biotechnol. 2010;28:996. doi:10.1038/nbt1010-996c

14. Sudduth MA. Genetically engineered foods – fears and facts: An interview with FDA's Jim Maryanski. FDA Consum. January 1993:11–14. http://web.archive.org/web/20090202053904/http://www.fda.gov/bbs/topics/consumer/Con00191.html.

15. Johnson N. Food for bots: Distinguishing the novel from the knee-jerk in the GMO debate. Grist. August 2013. http://grist.org/food/dodging-argument-bot-crossfire-to-revisit-some-gm-research-controversies/.

16. Carman JA, Vlieger HR, Ver Steeg LJ, et al. A long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM maize diet. J Org Syst. 2013;8:38–54. http://www.organic-systems.org/journal/81/8106.pdf.

17. Monsanto. 2011 Monsanto technology/stewardship agreement (limited use license). December 2010. http://thefarmerslife.files.wordpress.com/2012/02/scan_doc0004.pdf.

18. GMOJudyCarman. How easy is it for researchers to access the materials for GM biosafety research?http://gmojudycarman.org/how-easy-is-it-for-researchers-to-access-the-materials-for-gm-biosafety-research/. Published September 1, 2013.

19. Carman J. Accessing GM seeds and non-GM isolines for GMO safety research [personal email communication]. January 2014.

20. Séralini GE. Tous Cobayes! Paris, France: Flammarion; 2012.

21. Lotter D. The genetic engineering of food and the failure of science – Part 2: Academic capitalism and the loss of scientific integrity. Int Jrnl Soc Agr Food. 2008;16:50–68. http://www.ijsaf.org/archive/16/1/lotter2.pdf.

22. Séralini GE, Clair E, Mesnage R, et al. [RETRACTED:] Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. Food Chem Toxicol. 2012;50:4221-4231. http://www.sciencedirect.com/science/article/pii/S0278691512005637.

23. Matthews J. Smelling a corporate rat. Spinwatch. http://www.spinwatch.org/index.php/issues/science/item/164-smelling-a-corporate-rat. Published December 11, 2012.

24. Sourice B. OGM: La guerre secrète pour décrédibiliser l'étude Séralini [The covert war to discredit Séralini's study]. Rue 89/Le Nouvel Observateur. http://blogs.rue89.nouvelobs.com/de-interet-conflit/2012/11/12/ogm-la-guerre-secrete-pour-decredibiliser-letude-seralini-228894. Published November 12, 2012.

25. Hayes AW. Letter to Professor GE Séralini. November 2013. http://www.gmwatch.org/files/Letter_AWHayes_GES.pdf.

26. Hayes AW. Editor in chief of Food and Chemical Toxicology answers questions on retraction. Food Chem Toxicol. 2014. doi:10.1016/j.fct.2014.01.006

27. EndScienceCensorship.org. Statement: Journal retraction of Séralini GMO study is invalid and an attack on scientific integrity. 2014. http://www.endsciencecensorship.org/en/page/Statement#.UwUSP14vFY4. Accessed February 19, 2014.

28. Institute of Science in Society. Open letter on retraction and pledge to boycott Elsevier. http://www.i-sis.org.uk/Open_letter_to_FCT_and_Elsevier.php#form. Published December 4, 2013. Accessed February 19, 2014.

29. Schubert D. Science study controversy impacts world health. U-T San Diego. http://www.utsandiego.com/news/2014/jan/08/science-food-health/. Published January 8, 2014.

30. Krimsky S. An illusory consensus behind GMO health assessment. Sci Technol Hum Values. August 2015:0162243915598381. doi:10.1177/0162243915598381

31. Fagan J, Traavik T, Bøhn T. The Séralini affair: Degeneration of science to re-science? Environ Sci Eur. 2015;27(1). doi:10.1186/s12302-015-0049-2

32. Heinemann J. Let's give the scientific literature a good clean up. Biosafetycooperative.newsvine.com. December 2013. http://bit.ly/1aeULiB.

33. Séralini G-E, Clair E, Mesnage R, et al. Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. Environ Sci Eur. 2014;26(14). doi:10.1186/s12302-014-0014-5

34. Robinson C. Was Séralini's republished paper peer-reviewed? GMWatch. http://gmwatch.org/index.php/news/archive/2014/15511. Published June 28, 2014.

35. Baum Hedlund Aristei Goldman. Monsanto Papers: Secret documents: page two. August 2017. https://www.baumhedlundlaw.com/toxic-tort-law/monsanto-roundup-lawsuit/monsanto-secret-documents-page-two/.

36. Novotny E. Retraction by corruption: The 2012 Séralini paper. J Biol Phys Chem. 2018;18:32–56. http://www.seralini.fr/wp-content/uploads/2018/06/Novotny-JBPC-2018-On-Seralini-FCT-retraction.pdf.

37. European Food Safety Authority (EFSA). Review of the Séralini et al. (2012) publication on a 2-year rodent feeding study with glyphosate formulations and GM maize NK603 as published

online on 19 September 2012 in Food and Chemical Toxicology. EFSA J. 2012;10:2910. http://www.efsa.europa.eu/en/efsajournal/doc/2910.pdf.

38. Meyer H, Hilbeck A. Rat feeding studies with genetically modified maize - a comparative evaluation of applied methods and risk assessment standards. Environ Sci Eur. 2013;25(33). http://www.enveurope.com/content/pdf/2190-4715-25-33.pdf.

39. Corporate Europe Observatory. Unhappy Meal: The European Food Safety Authority's Independence Problem.; 2013. http://corporateeurope.org/sites/default/files/attachments/unhappy_meal_report_23_10_2013.pdf. Accessed October 28, 2013.

40. Corporate Europe Observatory. Recruitment errors. Corporate Europe Observatory. https://corporateeurope.org/efsa/2017/06/recruitment-errors. Published June 11, 2017. Accessed July 13, 2017.

41. Vecchio L, Cisterna B, Malatesta M, Martin TE, Biggiogera M. Ultrastructural analysis of testes from mice fed on genetically modified soybean. Eur J Histochem. 2004;48:448-454. http://www.ncbi.nlm.nih.gov/pubmed/15718213.

42. Malatesta M, Caporaloni C, Gavaudan S, et al. Ultrastructural morphometrical and immunocytochemical analyses of hepatocyte nuclei from mice fed on genetically modified soybean. Cell Struct Funct. 2002;27:173–80. http://www.ncbi.nlm.nih.gov/pubmed/12441651.

43. Malatesta M, Caporaloni C, Rossi L, et al. Ultrastructural analysis of pancreatic acinar cells from mice fed on genetically modified soybean. J Anat. 2002;201:409–15. http://www.ncbi.nlm.nih.gov/pubmed/12448776.

44. Malatesta M, Biggiogera M, Manuali E, Rocchi MBL, Baldelli B, Gazzanelli G. Fine structural analyses of pancreatic acinar cell nuclei from mice fed on genetically modified soybean. Eur J Histochem. 2003;47:385–388. http://www.ejh.it/index.php/ejh/article/viewFile/851/971.

45. Robin M-M. The World According to Monsanto: Pollution, Corruption, and the Control of the World's Food Supply. The New Press; 2013.

46. Rosi-Marshall EJ, Tank JL, Royer TV, et al. Toxins in transgenic crop byproducts may affect headwater stream ecosystems. Proc Natl Acad Sci USA. 2007;104:16204-16208. doi:10.1073/pnas.0707177104

47. Ruskin G. Henry Miller dropped by Forbes for Monsanto ghostwriting scandal. US Right Know. August 2017. https://usrtk.org/hall-of-shame/why-you-cant-trust-henry-miller-on-gmos/. Accessed July 5, 2018.

48. Hakim D. Monsanto emails raise issue of influencing research on Roundup weed killer. The New York Times. https://www.nytimes.com/2017/08/01/business/monsantos-sway-over-research-is-seen-in-disclosed-emails.html?smprod=nytcore-ipad&smid=nytcore-ipad-share. Published August 1, 2017. Accessed March 13, 2018.

49. International Agency for Research on Cancer. IARC Monographs Volume 112: Evaluation of Five Organophosphate Insecticides and Herbicides. Lyon, France: World Health Organization; 2015. http://monographs.iarc.fr/ENG/Monographs/vol112/.

50. Rowell A. Don't Worry, It's Safe to Eat. London, UK: Earthscan Ltd; 2003.

51. Ewen SW, Pusztai A. Effect of diets containing genetically modified potatoes expressing Galanthus nivalis lectin on rat small intestine. Lancet. 1999;354:1353-1354. doi:10.1016/S0140-6736(98)05860-7

52. Pusztai A. Home page. https://web.archive.org/web/20150720185952/http://www.freenetpages.co.uk/hp/a.pusztai/. Published November 16, 2003. Accessed February 10, 2014.

53. GM-FREE magazine. Why I cannot remain silent: Interview with Dr Arpad Pusztai. GM-FREE Mag. 1999;1(3). https://www.gmwatch.org/en/?option=com_content&view=article&id=13856.

54. Powerbase. Arpad Pusztai. http://www.powerbase.info/index.php/Arpad_Pusztai. Published June 18, 2009. Accessed February 10, 2014.

55. Rowell A. The sinister sacking of the world's leading GM expert – and the trail that leads to Tony Blair and the White House. Daily Mail. http://www.gmwatch.org/latest-listing/42-2003/4305. Published July 7, 2003.

56. Verhaag B. Scientists Under Attack. Mercurymedia; 2009. http://www.scientistsunderattack.com/.

57. Pusztai A. Regarding "Response to GM Myths"/Dr Roger Morton to AgBioView - 12/12/00 [Email to Jonathan Matthews, GMWatch].; 2000. http://www.gmwatch.org/latest-listing/39-2000/9016.

58. Enserink M. The Lancet scolded over Pusztai paper. Science. 1999;286.

59. Higgins TJ. "Disturbing" GM findings were not based on sound science. Canberra Times. http://www.gmwatch.org/latest-listing/1-news-items/3781. Published June 4, 2005.

60. Pusztai A, Grant G, Bardocz S, et al. Expression of the insecticidal bean a-amylase inhibitor transgene has minimal detrimental effect on the nutritional value of peas fed to rats at 30% of the diet. J Nutr. 1999;129:1597–1603. http://www.ncbi.nlm.nih.gov/pubmed/10419997.

61. Pusztai A. Comment on T. J. Higgins' attack. http://gmwatch.org/index.php/news/archive/2005/3781. Published June 9, 2005.

62. Martinelli L, Karbarz M, Siipi H. Science, safety, and trust: the case of transgenic food. Croat Med J. 2013;54:91-96. http://www.ncbi.nlm.nih.gov/pubmed/23444254.

63. Malatesta M, Boraldi F, Annovi G, et al. A long-term study on female mice fed on a genetically modified soybean: effects on liver ageing. Histochem Cell Biol. 2008;130:967–977. http://www.springerlink.com/content/cw661u3345p6q464/.

64. Domingo JL. Toxicity studies of genetically modified plants: a review of the published literature. Crit Rev Food Sci Nutr. 2007;47:721-733. doi:10.1080/10408390601177670

65. BBC Radio 4. Seeds of trouble. January 2002.

66. BBC Newsnight. Row over GM crops – Mexican scientist tells Newsnight he was threatened because he wanted to tell the truth. June 2002.

67. Quist D, Chapela IH. Transgenic DNA introgressed into traditional maize landraces in Oaxaca, Mexico. Nature. 2001;414:541-543. doi:10.1038/35107068

68. Mann C. Has GM corn "invaded" Mexico? Science. 2002;295(5560):1617–1619.

69. Kinderlerer J. Regarding AgBioView: Chapela and Mexican corn, China, New Zealand support up, Lomborg, Peanut map [listserv post]. December 2001.

70. Monbiot G. The fake persuaders. The Guardian (UK). http://www.monbiot.com/archives/2002/05/14/the-fake-persuaders/. Published May 14, 2002.

71. Campbell P. Editorial. Nature. 2002;416:600.

72. Campbell P. Editorial. Nature. 2002;417(6892):898.

73. Serratos-Hernández J-A, Gómez-Olivares J-L, Salinas-Arreortua N, Buendía-Rodríguez E, Islas-Gutiérrez F, de-Ita A. Transgenic proteins in maize in the Soil Conservation area of Federal District, Mexico. Front Ecol Environ. 2007;5(5):247-252. doi:10.1890/1540-9295(2007)5[247:TPIMIT]2.0.CO;2

74. Ortiz-Garcia S, Ezcurra E, Schoel B, Acevedo F, Soberon J, Snow AA. Absence of detectable transgenes in local landraces of maize in Oaxaca, Mexico. Proc Natl Acad Sci. 2005;102:18242.

75. Dyer GA, Serratos-Hernández JA, Perales HR, et al. Dispersal of transgenes through maize seed systems in Mexico. PLoS ONE. 2009;4(5):e5734. doi:10.1371/journal.pone.0005734

POUŽITÉ ZDROJE PRE 6. KAPITOLU:

1. Butelli E, Titta L, Giorgio M, et al. Enrichment of tomato fruit with health-promoting anthocyanins by expression of select transcription factors. *Nat Biotechnol*. 2008;26:1301-1308. doi:10.1038/nbt.1506

2. Martin C. How my purple tomato could save your life. *Mail Online*. http://bit.ly/10JsmlO. Published November 8, 2008.

3. Heinemann J, Agapito-Tenfen SZ, Carman J. A comparative evaluation of the regulation of GM crops or products containing dsRNA and suggested improvements to risk assessments. *Environ Int*. 2013;55:43–55. http://www.sciencedirect.com/science/article/pii/S0160412013000494#.

4. Zhang L, Hou D, Chen X, et al. Exogenous plant MIR168a specifically targets mammalian LDLRAP1: Evidence of cross-kingdom regulation by microRNA. *Cell Res*. 2012;22(1):107-126. doi:10.1038/cr.2011.158

5. Bøhn T, Cuhra M, Traavik T, Sanden M, Fagan J, Primicerio R. Compositional differences in soybeans on the market: glyphosate accumulates in Roundup Ready GM soybeans. *Food Chem*. 2014;153(2014):207–215. doi:10.1016/j.foodchem.2013.12.054

6. Gab-Alla AA, El-Shamei ZS, Shatta AA, Moussa EA, Rayan AM. Morphological and biochemical changes in male rats fed on genetically modified corn (Ajeeb YG). *J Am Sci*. 2012;8(9):1117–1123. https://www.academia.edu/3138607/Morphological_and_Biochemical_Changes_in_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

7. El-Shamei ZS, Gab-Alla AA, Shatta AA, Moussa EA, Rayan AM. Histopathological changes in some organs of male rats fed on genetically modified corn (Ajeeb YG). *J Am Sci*. 2012;8(10):684–696. https://www.academia.edu/3405345/Histopathological_Changes_in_Some_Organs_of_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

8. Hines FA. *Memorandum to Linda Kahl on the Flavr Savr Tomato (Pathology Review PR–152; FDA Number FMF–000526): Pathology Branch's Evaluation of Rats with Stomach Lesions from Three Four-Week Oral (Gavage) Toxicity Studies (IRDC Study Nos. 677–002, 677–004, and 677–005) and an Expert Panel's Report*. US Department of Health & Human Services; 1993. http://www.biointegrity.org.

9. Pusztai A. Witness Brief – Flavr Savr tomato study in Final Report (IIT Research Institute, Chicago, IL 60616 USA) cited by Dr Arpad Pusztai before the New Zealand Royal Commission on Genetic Modification. 2000. http://www.gmcommission.govt.nz/.

10. Pusztai A. Can science give us the tools for recognizing possible health risks of GM food? *Nutr Health*. 2002;16:73-84. http://www.ncbi.nlm.nih.gov/pubmed/12102369.

11. Zdziarski IM, Carman JA, Edwards JW. Histopathological investigation of the stomach of rats fed a 60% genetically modified corn diet. *Food Nutr Sci*. 2018;9(6):763–796. doi:10.4236/fns.2018.96058

12. Prescott VE, Campbell PM, Moore A, et al. Transgenic expression of bean alpha-amylase inhibitor in peas results in altered structure and immunogenicity. *J Agric Food Chem*. 2005;53:9023–30. doi:10.1021/jf050594v

13. Lee RY, Reiner D, Dekan G, Moore AE, Higgins TJV, Epstein MM. Genetically modified α-amylase inhibitor peas are not specifically allergenic in mice. *PloS One*. 2013;8:e52972. doi:10.1371/journal.pone.0052972

14. Higgins TJ. *Presentation at the GMSAFOOD Conference, Vienna, Austria, 6-8 March 2012 [Video]*.; 2012. http://www.youtube.com/watch?v=yKda722clq8.

15. Higgins TJ. *GMSAFOOD Project Press Conference [Video]*.; 2012. http://www.youtube.com/watch?v=gHUKE_luMR8.

16. Finamore A, Roselli M, Britti S, et al. Intestinal and peripheral immune response to MON810 maize ingestion in weaning and old mice. *J Agric Food Chem*. 2008;56:11533–39. doi:10.1021/jf802059w

17. Kroghsbo S, Madsen C, Poulsen M, et al. Immunotoxicological studies of genetically modified rice expressing PHA-E lectin or Bt toxin in Wistar rats. *Toxicology*. 2008;245:24-34. doi:10.1016/j.tox.2007.12.005

18. Krzyzowska M, Wincenciak M, Winnicka A, et al. The effect of multigenerational diet containing genetically modified triticale on immune system in mice. *Pol J Vet Sci*. 2010;13:423-430. http://www.ncbi.nlm.nih.gov/pubmed/21033555.

19. Malatesta M, Biggiogera M, Manuali E, Rocchi MBL, Baldelli B, Gazzanelli G. Fine structural analyses of pancreatic acinar cell nuclei from mice fed on genetically modified soybean. *Eur J Histochem*. 2003;47:385–388. http://www.ejh.it/index.php/ejh/article/viewFile/851/971.

20. Malatesta M, Caporaloni C, Gavaudan S, et al. Ultrastructural morphometrical and immunocytochemical analyses of hepatocyte nuclei from mice fed on genetically modified soybean. *Cell Struct Funct*. 2002;27:173–80. http://www.ncbi.nlm.nih.gov/pubmed/12441651.

21. Vecchio L, Cisterna B, Malatesta M, Martin TE, Biggiogera M. Ultrastructural analysis of testes from mice fed on genetically modified soybean. *Eur J Histochem*. 2004;48:448-454. http://www.ncbi.nlm.nih.gov/pubmed/15718213.

22. Malatesta M, Boraldi F, Annovi G, et al. A long-term study on female mice fed on a genetically modified soybean: effects on liver ageing. *Histochem Cell Biol*. 2008;130:967–977. http://www.springerlink.com/content/cw661u3345p6q464/.

23. Séralini G-E, Clair E, Mesnage R, et al. Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Environ Sci Eur*. 2014;26(14). doi:10.1186/s12302-014-0014-5

24. Hammond B, Dudek R, Lemen J, Nemeth M. Results of a 13 week safety assurance study with rats fed grain from glyphosate tolerant corn. *Food Chem Toxicol*. 2004;42:1003-1014. doi:10.1016/j.fct.2004.02.013

25. Mesnage R, Arno M, Costanzo M, Malatesta M, Séralini G-E, Antoniou MN. Transcriptome profile analysis reflects rat liver and kidney damage following chronic ultra-low dose Roundup exposure. *Environ Health*. 2015;14(1):70. doi:10.1186/s12940-015-0056-1

26. Mesnage R, Renney G, Séralini G-E, Ward M, Antoniou MN. Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide. *Sci Rep*. 2017;7:39328. doi:10.1038/srep39328

27. Mesnage R, Arno M, Séralini G-E, Antoniou MN. Transcriptome and metabolome analysis of liver and kidneys of rats chronically fed NK603 Roundup-tolerant genetically modified maize. *Environ Sci Eur*. 2017;29(1):6. doi:10.1186/s12302-017-0105-1

28. Séralini GE, Mesnage R, Clair E, Gress S, de Vendômois JS, Cellier D. Genetically modified crops safety assessments: Present limits and possible improvements. *Environ Sci Eur*. 2011;23. doi:10.1186/2190-4715-23-10

29. de Vendomois JS, Roullier F, Cellier D, Séralini GE. A comparison of the effects of three GM corn varieties on mammalian health. *Int J Biol Sci*. 2009;5:706–26. http://www.ncbi.nlm.nih.gov/pubmed/20011136 http://www.biolsci.org/v05p0706.htm.

30. Kilic A, Akay MT. A three generation study with genetically modified Bt corn in rats: Biochemical and histopathological investigation. *Food Chem Toxicol*. 2008;46:1164–70. doi:10.1016/j.fct.2007.11.016

31. US Food and Drug Administration (FDA). *Biotechnology Consultation Note to the File BNF No 00077*. Office of Food Additive Safety, Center for Food Safety and Applied Nutrition; 2002. http://bit.ly/ZUmiAF.

32. Trabalza-Marinucci M, Brandi G, Rondini C, et al. A three-year longitudinal study on the effects of a diet containing genetically modified Bt176 maize on the health status and performance of sheep. *Livest Sci*. 2008;113:178–190. doi:10.1016/j.livsci.2007.03.009

33. Ewen SW, Pusztai A. Effect of diets containing genetically modified potatoes expressing Galanthus nivalis lectin on rat small intestine. *Lancet*. 1999;354:1353-1354. doi:10.1016/S0140-6736(98)05860-7

34. Pusztai A, Bardocz S. GMO in animal nutrition: Potential benefits and risks. In: Mosenthin R, Zentek J, Zebrowska T, eds. *Biology of Nutrition in Growing Animals*. Vol 4. Elsevier Limited; 2006:513–540. http://www.sciencedirect.com/science/article/pii/S1877182309701043.

35. Fares NH, El-Sayed AK. Fine structural changes in the ileum of mice fed on delta-endotoxin-treated potatoes and transgenic potatoes. *Nat Toxins*. 1998;6(6):219-233. http://www.ncbi.nlm.nih.gov/pubmed/10441029.

36. European Food Safety Authority (EFSA). Scientific Opinion of the Panel on Genetically Modified Organisms on applications (EFSA-GMO-RX-MON810) for the renewal of authorisation for the continued marketing of (1) existing food and food ingredients produced from genetically modified insect resistant maize MON810; (2) feed consisting of and/or containing maize MON810, including the use of seed for cultivation; and of (3) food and feed additives, and feed materials produced from maize MON810, all under Regulation (EC) No 1829/2003 from Monsanto. *EFSA J*. 2009;2009(1149):1–85. http://www.efsa.europa.eu/en/scdocs/doc/1149.pdf.

37. Brasil FB, Soares LL, Faria TS, Boaventura GT, Sampaio FJ, Ramos CF. The impact of dietary organic and transgenic soy on the reproductive system of female adult rat. *Anat Rec Hoboken*. 2009;292:587–94. doi:10.1002/ar.20878

38. Carman JA, Vlieger HR, Ver Steeg LJ, et al. A long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM maize diet. *J Org Syst*. 2013;8:38–54. http://www.organic-systems.org/journal/81/8106.pdf.

39. Lynas M. GMO pigs study – more junk science. *marklynas.org*. June 2013. http://www.marklynas.org/2013/06/gmo-pigs-study-more-junk-science/.

40. Poulsen M, Kroghsbo S, Schroder M, et al. A 90-day safety study in Wistar rats fed genetically modified rice expressing snowdrop lectin Galanthus nivalis (GNA). *Food Chem Toxicol*. 2007;45:350-363. doi:10.1016/j.fct.2006.09.002

41. Schrøder M, Poulsen M, Wilcks A, et al. A 90-day safety study of genetically modified rice expressing Cry1Ab protein (Bacillus thuringiensis toxin) in Wistar rats. *Food Chem Toxicol*. 2007;45:339-349. doi:10.1016/j.fct.2006.09.001

42. Dona A, Arvanitoyannis IS. Health risks of genetically modified foods. *Crit Rev Food Sci Nutr*. 2009;49:164–75. doi:10.1080/10408390701855993

43. Tyl RW, Crofton K, Moretto A, Moser V, Sheets LP, Sobotka TJ. Identification and interpretation of developmental neurotoxicity effects: a report from the ILSI Research Foundation/Risk Science Institute expert working group on neurodevelopmental endpoints. *Neurotoxicol Teratol*. 2008;30:349-381. doi:10.1016/j.ntt.2007.07.008

44. Snell C, Aude B, Bergé J, et al. Assessment of the health impact of GM plant diets in long-term and multigenerational animal feeding trials: A literature review. *Food Chem Toxicol*. 2012;50(3–4):1134-1148. http://www.sciencedirect.com/science/article/pii/S0278691511006399.

45. Hilbeck A, Meier M, Römbke J, Jänsch S, Teichmann H, Tappeser B. Environmental risk assessment of genetically modified plants - concepts and controversies. *Environ Sci Eur*. 2011;23. doi:10.1186/2190-4715-23-13

46. Breyer H. *EFSA Definition of "Biological Relevance" in Connection with GMO Tests: Written Question by Hiltrud Breyer (Verts/ALE) to the Commission*.; 2008. http://bit.ly/M6UFyn.

47. European Food Safety Authority (EFSA). Scientific opinion: Statistical significance and biological relevance. *EFSA J*. 2011;9:2372.

48. International Life Sciences Institute (ILSI). Nutritional and safety assessments of foods and feeds nutritionally improved through biotechnology, prepared by a task force of the ILSI International Food Biotechnology Committee. *Compr Rev Food Sci Food Saf*. 2004;3:38–104.

49. International Life Sciences Institute (ILSI). *Risk Assessment of Genotoxic Carcinogens Task Force*. Brussels, Belgium; 2011. http://bit.ly/1i8n8qk.

50. Constable A, Barlow S. *Application of the Margin of Exposure Approach to Compounds in Food Which Are Both Genotoxic and Carcinogenic: Summary Report of a Workshop Held in October 2008 Organised by the ILSI Europe Risk Assessment of Genotoxic Carcinogens in Food Task Force*. Brussels, Belgium: ILSI Europe; 2009. http://www.ilsi.org.ar/administrador/panel/newsletter/news27/moe_ws_report.pdf.

51. Corporate Europe Observatory. *The International Life Sciences Institute (ILSI), a Corporate Lobby Group*. Brussels, Belgium: Corporate Europe Observatory; 2012. http://corporateeurope.org/sites/default/files/ilsi-article-final.pdf.

52. European Commission Directorate-General for Research and Innovation, Biotechnologies, Agriculture, Food. *A Decade of EU-Funded GMO Research (2001–2010)*. Brussels, Belgium;

2010. http://ec.europa.eu/research/biosociety/pdf/a_decade_of_eu-funded_gmo_research.pdf.

53. Poulsen M, Schrøder M, Wilcks A, et al. Safety testing of GM-rice expressing PHA-E lectin using a new animal test design. *Food Chem Toxicol Int J Publ Br Ind Biol Res Assoc*. 2007;45(3):364-377. doi:10.1016/j.fct.2006.09.003

54. Knudsen I, Poulsen M. Comparative safety testing of genetically modified foods in a 90-day rat feeding study design allowing the distinction between primary and secondary effects of the new genetic event. *Regul Toxicol Pharmacol*. 2007;49(1):53-62. doi:10.1016/j.yrtph.2007.07.003

55. Conrow J. European studies disprove Séralini's GMO maize tumor claims. Cornell Alliance for Science. https://allianceforscience.cornell.edu/blog/2018/06/european-studies-disprove-seralinis-gmo-maize-tumor-claims/. Published June 7, 2018. Accessed July 4, 2018.

56. AFBV. Trois expertises française et européennes invalident les résultats et conclusions de l'étude de GE Séralini sur les maïs OGM | http://www.biotechnologies-vegetales.com/. biotechnologies-vegetales.com. http://www.biotechnologies-vegetales.com/3-expertises-invalident-letude-seralini-sur-les-mais-ogm. Published June 11, 2018. Accessed July 4, 2018.

57. Schiemann J, Steinberg P, Salles B. Facilitating a transparent and tailored scientific discussion about the added value of animal feeding trials as well as in vitro and in silico approaches with whole food/feed for the risk assessment of genetically modified plants. *Arch Toxicol*. 2014;88(12):2067-2069. doi:10.1007/s00204-014-1375-7

58. Zeljenková D, Ambrušová K, Bartušová M, et al. Ninety-day oral toxicity studies on two genetically modified maize MON810 varieties in Wistar Han RCC rats (EU 7th Framework Programme project GRACE). *Arch Toxicol*. October 2014:1-26. doi:10.1007/s00204-014-1374-8

59. Zeljenková D, Aláčová R, Ondrejková J, et al. One-year oral toxicity study on a genetically modified maize MON810 variety in Wistar Han RCC rats (EU 7th Framework Programme project GRACE). *Arch Toxicol*. 2016;90(10):2531-2562. doi:10.1007/s00204-016-1798-4

60. G-TwYST. G-TwYST GM plants two year safety testing: Conclusions and recommendations. April 2018. https://www.g-twyst.eu/files/Conclusions-Recommendations/G-TwYSTConclusionsandrecommendations-final.pdf.

61. GRACE. Final results and recommendations of the EU research project GRACE: GRACE FP7. grace-fp7.eu. http://www.grace-fp7.eu/en/content/final-results-and-recommendations-eu-research-project-grace. Published 2012. Accessed July 4, 2018.

62. Bauer-Panskus A, Then C. *Comments Regarding the GRACE Publication "Ninety-Day Oral Toxicity Studies on Two Genetically Modified Maize MON810 Varieties in Wistar Han RCC Rats (EU 7th Framework Programme Project GRACE)"*. Munich, Germany: Testbiotech; 2014. https://www.testbiotech.org/sites/default/files/Testbiotech_Doubts_%20EU_Research_Project_GRACE_2.pdf.

63. National Toxicology Program. Toxicology/Carcinogenicity. https://ntp.niehs.nih.gov. http://ntp.niehs.nih.gov/?objectid=72015DAF-BDB7-CEBA-F9A7F9CAA57DD7F5. Published April 5, 2018.

64. Williams GM, Berry C, Burns M, de Camargo JLV, Greim H. Glyphosate rodent carcinogenicity bioassay expert panel review. *Crit Rev Toxicol*. 2016;46(sup1):44-55. doi:10.1080/10408444.2016.1214679

65. Swanson NL, Leu A, Abrahamson J, Wallett B. Genetically engineered crops, glyphosate and the deterioration of health in the United States of America. *J Org Syst*. 2014;9(2). http://www.organic-systems.org/journal/92/JOS_Volume-9_Number-2_Nov_2014-Swanson-et-al.pdf.

POUŽITÉ ZDROJE PRE 7. KAPITOLU:

1. Séralini G-E, Clair E, Mesnage R, et al. Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Environ Sci Eur*. 2014;26(14). doi:10.1186/s12302-014-0014-5

2. ANSES (French Agency for Food Environmental and Occupational Health & Safety). *Opinion Concerning an Analysis of the Study by Séralini et Al. (2012) "Long Term Toxicity of a ROUNDUP Herbicide and a ROUNDUP-Tolerant Genetically Modified Maize."* Maisons-Alfort, France: ANSES; 2012. http://www.anses.fr/sites/default/files/files/BIOT2012sa0227EN.pdf.

3. James C. *Global Status of Commercialized Biotech/GM Crops: 2012*. Ithaca, NY: ISAAA; 2012. http://www.isaaa.org/resources/publications/briefs/44/download/isaaa-brief-44-2012.pdf.

4. ANSES (French Agency for Food Environmental and Occupational Health & Safety). ANSES highlights the weaknesses of the study by Séralini et al., but recommends new research on the long-term effects of GMOs. http://www.anses.fr/en/content/anses-highlights-weaknesses-study-s%C3%A9ralini-et-al-recommends-new-research-long-term-effects. Published October 22, 2012. Accessed February 16, 2014.

5. Malatesta M, Boraldi F, Annovi G, et al. A long-term study on female mice fed on a genetically modified soybean: effects on liver ageing. *Histochem Cell Biol*. 2008;130:967–977. http://www.springerlink.com/content/cw661u3345p6q464/.

6. Sakamoto Y, Tada Y, Fukumori N, et al. [A 104-week feeding study of genetically modified soybeans in F344 rats]. *Shokuhin Eiseigaku Zasshi J Food Hyg Soc Jpn*. 2008;49:272-282. http://www.ncbi.nlm.nih.gov/pubmed/18787312.

7. Bøhn T, Cuhra M, Traavik T, Sanden M, Fagan J, Primicerio R. Compositional differences in soybeans on the market: glyphosate accumulates in Roundup Ready GM soybeans. *Food Chem*. 2014;153(2014):207–215. doi:10.1016/j.foodchem.2013.12.054

8. Bøhn T, Cuhra M. How "extreme levels" of Roundup in food became the industry norm. *Indep Sci News*. March 2014. http://www.independentsciencenews.org/news/how-extreme-levels-of-roundup-in-food-became-the-industry-norm/.

9. Snell C, Aude B, Bergé J, et al. Assessment of the health impact of GM plant diets in long-term and multigenerational animal feeding trials: A literature review. *Food Chem Toxicol*. 2012;50(3–4):1134-1148. http://www.sciencedirect.com/science/article/pii/S0278691511006399.

10. Brake J, Faust MA, Stein J. Evaluation of transgenic event Bt11 hybrid corn in broiler chickens. *Poult Sci*. 2003;82:551-559. http://www.ncbi.nlm.nih.gov/pubmed/12710473.

11. Steinke K, Guertler P, Paul V, et al. Effects of long-term feeding of genetically modified corn (event MON810) on the performance of lactating dairy cows. *J Anim Physiol Anim Nutr Berl*. 2010;94:e185-93. doi:10.1111/j.1439-0396.2010.01003.x

12. Flachowsky G, Aulrich K, Böhme H, Halle I. Studies on feeds from genetically modified plants (GMP) – Contributions to nutritional and safety assessment. *Anim Feed Sci Technol*. 2007;133:2–30.

13. AFP. Controversial Seralini study linking GM to cancer in rats is republished. *The Guardian (UK)*. http://www.theguardian.com/environment/2014/jun/24/controversial-seralini-study-gm-cancer-rats-republished. Published June 24, 2014. Accessed February 20, 2015.

14. Kilic A, Akay MT. A three generation study with genetically modified Bt corn in rats: Biochemical and histopathological investigation. *Food Chem Toxicol*. 2008;46:1164–70. doi:10.1016/j.fct.2007.11.016

15. Malatesta M, Biggiogera M, Manuali E, Rocchi MBL, Baldelli B, Gazzanelli G. Fine structural analyses of pancreatic acinar cell nuclei from mice fed on genetically modified soybean. *Eur J Histochem*. 2003;47:385–388. http://www.ejh.it/index.php/ejh/article/viewFile/851/971.

16. Malatesta M, Caporaloni C, Gavaudan S, et al. Ultrastructural morphometrical and immunocytochemical analyses of hepatocyte nuclei from mice fed on genetically modified soybean. *Cell Struct Funct*. 2002;27:173–80. http://www.ncbi.nlm.nih.gov/pubmed/12441651.

17. Vecchio L, Cisterna B, Malatesta M, Martin TE, Biggiogera M. Ultrastructural analysis of testes from mice fed on genetically modified soybean. *Eur J Histochem*. 2004;48:448-454. http://www.ncbi.nlm.nih.gov/pubmed/15718213.

18. Waltz E. Under wraps – Are the crop industry's strong-arm tactics and close-fisted attitude to sharing seeds holding back independent research and undermining public acceptance of transgenic crops? *Nat Biotechnol*. 2009;27(10):880–882. doi:10.1038/nbt1009-880

19. Williams AL, DeSesso JM. Genetically-modified soybeans: A critical evaluation of studies addressing potential changes associated with ingestion; Abstract 1154, Poster Board 424, Safety Concerns of Food and Natural Products. In: ; 2010. http://www.exponent.com/files/Uploads/Documents/news%20and%20features/SOT%20Presentation%20Handout_draft.pdf.

20. Williams AL, DeSesso JM. Genetically-modified soybeans: A critical evaluation of studies addressing potential changes associated with ingestion; Abstract 1154. *The Toxicologist*. 2010;114:246. http://www.toxicology.org/AI/Pub/Tox/2010Tox.pdf.

21. Williams AL, Watson RE, DeSesso JM. Developmental and reproductive outcomes in humans and animals after glyphosate exposure: A critical analysis. *J Toxicol Environ Health Part B*. 2012;15:39–96.

22. LinkedIn. Chelsea Snell. LinkedIn. https://www.linkedin.com/in/chelsea-snell-4b70074b/. Published 2018. Accessed July 5, 2018.

23. Gross L. Seeding doubt: How self-appointed guardians of "sound science" tip the scales toward industry. *The Intercept*. November 2016. https://theintercept.com/2016/11/15/how-self-appointed-guardians-of-sound-science-tip-the-scales-toward-industry/. Accessed July 5, 2018.

24. US Right to Know. Sense About Science Archives. *US Right Know*. June 2018. https://usrtk.org/tag/sense-about-science/. Accessed July 5, 2018.

25. US Right to Know. Monsanto relied on these "partners" to attack top cancer scientists. *US Right Know*. May 2018. https://usrtk.org/gmo/monsanto-relied-on-these-partners-to-attack-top-cancer-scientists/. Accessed July 5, 2018.

26. International Agency for Research on Cancer. *IARC Monographs Volume 112: Evaluation of Five Organophosphate Insecticides and Herbicides*. Lyon, France: World Health Organization; 2015. http://monographs.iarc.fr/ENG/Monographs/vol112/.

POUŽITÉ ZDROJE PRE 8. KAPITOLU:

1. Nicolia A, Manzo A, Veronesi F, Rosellini D. An overview of the last 10 years of genetically engineered crop safety research. *Crit Rev Biotechnol*. September 2013:1-12. doi:10.3109/07388551.2013.823595

2. Bailey P. GMOs are nothing to fear. *US News & World Report*. http://www.usnews.com/opinion/articles/2013/11/04/scientific-evidence-doesnt-show-gmos-are-harmful. Published November 4, 2013.

3. Wendel J. With 2000+ global studies confirming safety, GM foods among most analyzed subjects in science. *Genetic Literacy Project*. http://bit.ly/1bjhPQG. Published October 8, 2013.

4. Taylor M, Hartnell G, Lucas D, Davis S, Nemeth M. Comparison of broiler performance and carcass parameters when fed diets containing soybean meal produced from glyphosate-tolerant (MON 89788), control, or conventional reference soybeans. *Poult Sci*. 2007;86(12):2608-2614. doi:10.3382/ps.2007-00139

5. Bakke-McKellep AM, Sanden M, Danieli A, et al. Atlantic salmon (Salmo salar L.) parr fed genetically modified soybeans and maize: Histological, digestive, metabolic, and immunological investigations. *Res Vet Sci*. 2008;84:395-408. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=18561390.

6. Kok EJ, Keijer J, Kleter GA, Kuiper HA. Comparative safety assessment of plant-derived foods. *Regul Toxicol Pharmacol*. 2008;50:98-113. doi:10.1016/j.yrtph.2007.09.007

7. Kok EJ, Kuiper HA. Comparative safety assessment for biotech crops. *Trends Biotechnol*. 2003;21:439–444. http://www.ncbi.nlm.nih.gov/pubmed/14512230.

8. Chassy BM. Food safety evaluation of crops produced through biotechnology. *J Am Coll Nutr*. 2002;21(3 Suppl):166S-173S.

9. Konig A, Cockburn A, Crevel RW, et al. Assessment of the safety of foods derived from genetically modified (GM) crops. *Food Chem Toxicol*. 2004;42:1047-1088. doi:10.1016/j.fct.2004.02.019

10. International Life Sciences Institute (ILSI). Nutritional and safety assessments of foods and feeds nutritionally improved through biotechnology, prepared by a task force of the ILSI International Food Biotechnology Committee. *Compr Rev Food Sci Food Saf*. 2004;3:38–104.

11. Kroghsbo S, Madsen C, Poulsen M, et al. Immunotoxicological studies of genetically modified rice expressing PHA-E lectin or Bt toxin in Wistar rats. *Toxicology*. 2008;245:24-34. doi:10.1016/j.tox.2007.12.005

12. Poulsen M, Kroghsbo S, Schroder M, et al. A 90-day safety study in Wistar rats fed genetically modified rice expressing snowdrop lectin Galanthus nivalis (GNA). *Food Chem Toxicol*. 2007;45:350-363. doi:10.1016/j.fct.2006.09.002

13. Magnusson MK, Koivisto Hursti U-K. Consumer attitudes towards genetically modified foods. *Appetite*. 2002;39(1):9-24. doi:10.1006/appe.2002.0486

14. Domingo JL, Bordonaba JG. A literature review on the safety assessment of genetically modified plants. *Env Int*. 2011;37:734–742. http://www.ncbi.nlm.nih.gov/pubmed/21296423?dopt=Citation.

15. Malatesta M, Caporaloni C, Gavaudan S, et al. Ultrastructural morphometrical and immunocytochemical analyses of hepatocyte nuclei from mice fed on genetically modified

soybean. *Cell Struct Funct*. 2002;27:173–80. http://www.ncbi.nlm.nih.gov/pubmed/12441651.

16. Malatesta M, Caporaloni C, Rossi L, et al. Ultrastructural analysis of pancreatic acinar cells from mice fed on genetically modified soybean. *J Anat*. 2002;201:409–15. http://www.ncbi.nlm.nih.gov/pubmed/12448776.

17. Malatesta M, Biggiogera M, Manuali E, Rocchi MBL, Baldelli B, Gazzanelli G. Fine structural analyses of pancreatic acinar cell nuclei from mice fed on genetically modified soybean. *Eur J Histochem*. 2003;47:385–388. http://www.ejh.it/index.php/ejh/article/viewFile/851/971.

18. Malatesta M, Boraldi F, Annovi G, et al. A long-term study on female mice fed on a genetically modified soybean: effects on liver ageing. *Histochem Cell Biol*. 2008;130:967–977. http://www.springerlink.com/content/cw661u3345p6q464/.

19. Vecchio L, Cisterna B, Malatesta M, Martin TE, Biggiogera M. Ultrastructural analysis of testes from mice fed on genetically modified soybean. *Eur J Histochem*. 2004;48:448-454. http://www.ncbi.nlm.nih.gov/pubmed/15718213.

20. Kilic A, Akay MT. A three generation study with genetically modified Bt corn in rats: Biochemical and histopathological investigation. *Food Chem Toxicol*. 2008;46:1164–70. doi:10.1016/j.fct.2007.11.016

21. Dona A, Arvanitoyannis IS. Health risks of genetically modified foods. *Crit Rev Food Sci Nutr*. 2009;49:164–75. doi:10.1080/10408390701855993

22. Hilbeck A, Moar WJ, Pusztai-Carey M, Filippini A, Bigler F. Toxicity of Bacillus thuringiensis Cry1Ab toxin to the predator Chrysoperla carnea (Neuroptera: Chrysopidae). *Environ Entomol*. 1998;27(5):1255-1263.

23. Hilbeck A, Moar WJ, Pusztai-Carey M, Filippini A, Bigler F. Prey-mediated effects of Cry1Ab toxin and protoxin and Cry2A protoxin on the predator Chrysoperla carnea. *Entomol Exp Appl*. 1999;91:305–316. http://onlinelibrary.wiley.com/doi/10.1046/j.1570-7458.1999.00497.x/abstract.

24. Hilbeck A, Baumgartner M, Fried PM, Bigler F. Effects of transgenic Bt corn-fed prey on immature development of Chrysoperla carnea (Neuroptera: Chrysopidae). *Environ Entomol*. 1998;27(2):480–487. http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B7GVS-4DS333P-10&_user=10&_coverDate=01/01/2001&_rdoc=1&_fmt=high&_orig=search&_origin=search&_sort=d&_docanchor=&view=c&_searchStrId=1479158748&_rerunOrigin=scholar.google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=0e143cb4b9989880e9b50648a48ca8d0&searchtype=a.

25. Schmidt JE, Braun CU, Whitehouse LP, Hilbeck A. Effects of activated Bt transgene products (Cry1Ab, Cry3Bb) on immature stages of the ladybird Adalia bipunctata in laboratory ecotoxicity testing. *Arch Env Contam Toxicol*. 2009;56(2):221-228. doi:10.1007/s00244-008-9191-9

26. Hilbeck A, Meier M, Trtikova M. Underlying reasons of the controversy over adverse effects of Bt toxins on lady beetle and lacewing larvae. *Environ Sci Eur*. 2012;24(9). doi:10.1186/2190-4715-24-9

27. Dutton A, Klein H, Romeis J, Bigler F. Uptake of Bt-toxin by herbivores feeding on transgenic maize and consequences for the predator Chrysoperla carnea. *Ecol Entomol*. 2002;27:441–447. http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2311.2002.00436.x/full.

28. Dutton A, Klein H, Romeis J, Bigler F. Prey-mediated effects of Bacillus thuringiensis spray on the predator Chrysoperla carnea in maize. *Biol Control*. 2003;26(2):209-215. doi:10.1016/S1049-9644(02)00127-5

29. Romeis J, Dutton A, Bigler F. Bacillus thuringiensis toxin (Cry1Ab) has no direct effect on larvae of the green lacewing Chrysoperla carnea (Stephens) (Neuroptera: Chrysopidae). *J Insect Physiol*. 2004;50(2-3):175-183. doi:10.1016/j.jinsphys.2003.11.004

30. Alvarez-Alfageme F, Bigler F, Romeis J. Laboratory toxicity studies demonstrating no adverse effects of Cry1Ab and Cry3Bb1 to larvae of Adalia bipunctata (Coleoptera: Coccinellidae): the importance of study design. *Transgenic Res*. 2011;20:467-479.

31. Rauschen S. A case of "pseudo science"? A study claiming effects of the Cry1Ab protein on larvae of the two-spotted ladybird is reminiscent of the case of the green lacewing. *Transgenic Res*. 2010;19:13-16. doi:10.1007/s11248-009-9301-0

32. Ricroch A, Berge JB, Kuntz M. Is the German suspension of MON810 maize cultivation scientifically justified? *Transgenic Res*. 2010;19:1-12. doi:10.1007/s11248-009-9297-5

33. Hilbeck A, McMillan JM, Meier M, Humbel A, Schlaepfer-Miller J, Trtikova M. A controversy re-visited: Is the coccinellid Adalia bipunctata adversely affected by Bt toxins? *Environ Sci Eur*. 2012;24(10). doi:10.1186/2190-4715-24-10

POUŽITÉ ZDROJE PRE 9. KAPITOLU:

1. Eenennaam ALV, Young AE. Prevalence and impacts of genetically engineered feedstuffs on livestock populations. *J Anim Sci*. 2014;92(11):4255-4278. doi:10.2527/jas.2014-8124

2. US Food and Drug Administration (FDA). Alison Louise Van Eenennaam. http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/VeterinaryMedicineAdvisoryCommittee/UCM225072.pdf. Published Undated.

3. Entine J. The debate about GMO safety is over, thanks to a new trillion-meal study. Forbes. http://www.forbes.com/sites/jonentine/2014/09/17/the-debate-about-gmo-safety-is-over-thanks-to-a-new-trillion-meal-study/. Published September 17, 2014. Accessed September 22, 2014.

4. Valikov E. GMO junk science meets junk journalism. *Beachvet Blogspot*. October 2014. http://beachvetlbc.blogspot.com/2014/10/gmo-junk-science-meets-junk-journalism.html. Accessed July 18, 2017.

5. Food Safety and Inspection Service. Animal Disposition Reporting System (ADRS). FSIS–USDA. https://www.fsis.usda.gov/OPHS/adrsdata/adrsfydx.htm. Published 2003. Accessed July 18, 2017.

6. Carman JA, Vlieger HR, Ver Steeg LJ, et al. A long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM maize diet. *J Org Syst*. 2013;8:38–54. http://www.organic-systems.org/journal/81/8106.pdf.

7. Carman J. Personal communication with the authors. 2014.

8. Pedersen IB. Changing from GMO to non-GMO natural soy, experiences from Denmark. *Science in Society*. September 10, 2014.

9. Steinke K, Guertler P, Paul V, et al. Effects of long-term feeding of genetically modified corn (event MON810) on the performance of lactating dairy cows. *J Anim Physiol Anim Nutr Berl*. 2010;94:e185-93. doi:10.1111/j.1439-0396.2010.01003.x

10. Guertler P, Paul V, Steinke K, et al. Long-term feeding of genetically modified corn (MON810) — Fate of cry1Ab DNA and recombinant protein during the metabolism of the dairy cow. *Livest Sci*. 2010;131(2–3):250-259. doi:10.1016/j.livsci.2010.04.010

11. Guertler P, Brandl C, Meyer HHD, Tichopad A. Feeding genetically modified maize (MON810) to dairy cows: comparison of gene expression pattern of markers for apoptosis, inflammation and cell cycle. *J Verbr Leb*. 2012;7:195–202.

12. Buzoianu SG, Walsh MC, Rea MC, et al. High-throughput sequence-based analysis of the intestinal microbiota of weanling pigs fed genetically modified MON810 maize expressing Bacillus thuringiensis Cry1Ab (Bt maize) for 31 days. *Appl Env Microbiol*. 2012;78:4217-4224. doi:10.1128/AEM.00307-12

13. Buzoianu SG, Walsh MC, Rea MC, et al. The effect of feeding Bt MON810 maize to pigs for 110 days on intestinal microbiota. *PLoS ONE*. 2012;7:e33668. doi:10.1371/journal.pone.0033668

14. Buzoianu SG, Walsh MC, Rea MC, et al. Effects of feeding Bt maize to sows during gestation and lactation on maternal and offspring immunity and fate of transgenic material. *PLoS ONE*. 2012;7(10). doi:10.1371/journal.pone.0047851

15. Walsh MC, Buzoianu SG, Gardiner GE, et al. Fate of transgenic DNA from orally administered Bt MON810 maize and effects on immune response and growth in pigs. *PLoS ONE*. 2011;6:e27177. doi:10.1371/journal.pone.0027177

16. Buzoianu SG, Walsh MC, Rea MC, et al. Effect of feeding genetically modified Bt MON810 maize to ~40-day-old pigs for 110 days on growth and health indicators. *Anim Int J Anim Biosci*. 2012;6(10):1609-1619. doi:10.1017/S1751731112000249

POUŽITÉ ZDROJE PRE 10. KAPITOLU:

1. Benbrook C. Evidence of the Magnitude and Consequences of the Roundup Ready Soybean Yield Drag from University-Based Varietal Trials in 1998: Ag BioTech InfoNet Technical Paper Number 1. Sandpoint, Idaho; 1999. http://www.mindfully.org/GE/RRS-Yield-Drag.htm.

2. Elmore RW, Roeth FW, Nelson LA, et al. Glyphosate-resistant soyabean cultivar yields compared with sister lines. Agron J. 2001;93:408-412. http://www.mindfully.org/GE/GE2/RRS-Yields-Compared.htm.

3. Ma BL, Subedi KD. Development, yield, grain moisture and nitrogen uptake of Bt corn hybrids and their conventional near-isolines. Field Crops Res. 2005;93:199-211. http://www.saveourseeds.org/downloads/Btmaize_inferior_yield.pdf.

4. Bennett H. GM canola trials come a cropper. WA Business News. http://www.wabusinessnews.com.au/en-story/1/69680/GM-canola-trials-come-a-cropper. Published January 16, 2009.

5. Kaskey J. Monsanto facing “distrust” as it seeks to stop DuPont (update 3). Bloomberg. http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aii_24MDZ8SU. Published November 10, 2009.

6. Fernandez-Cornejo J, Wechsler S, Livingston M, Mitchell L. Genetically Engineered Crops in the United States. Washington, DC: US Department of Agriculture; 2014. https://www.ers.usda.gov/publications/pub-details/?pubid=45182.

7. National Academies of Sciences, Engineering, and Medicine. Genetically Engineered Crops: Experiences and Prospects. Washington, DC: National Academies of Sciences, Engineering, and Medicine; 2016. https://www.nap.edu/download/23395. Accessed July 18, 2017.

8. Heinemann JA, Massaro M, Coray DS, Agapito-Tenfen SZ, Wen JD. Sustainability and innovation in staple crop production in the US Midwest. Int J Agric Sustain. June 2013:1–18. http://www.tandfonline.com/doi/full/10.1080/14735903.2013.806408#.UrnaHfYnuUc.

9. Heinemann JA, Massaro M, Coray DS, Agapito-Tenfen SZ. Reply to comment on sustainability and innovation in staple crop production in the US Midwest. Int J Agric Sustain. 2014;12(4):387–390. doi:10.1080/14735903.2014.939843

10. University of Canterbury. GM a failing biotechnology in modern agro-ecosystems [press release]. June 2013. http://www.gmwatch.org/index.php/news/rss/14802.

11. Gurian-Sherman D. Failure to Yield: Evaluating the Performance of Genetically Engineered Crops. Cambridge, MA: Union of Concerned Scientists; 2009. http://www.ucsusa.org/assets/documents/food_and_agriculture/failure-to-yield.pdf.

12. Klümper W, Qaim M. A meta-analysis of the impacts of genetically modified crops. PLoS ONE. 2014;9(11):e111629. doi:10.1371/journal.pone.0111629

13. Qaim M, Zilberman D. Yield effects of genetically modified crops in developing countries. Science. 2003;299(5608):900-902. doi:10.1126/science.1080609

14. Sharma D. A scientific fairytale. India Together. http://indiatogether.org/scicoverup-op-ed. Published February 1, 2003.

15. Shantharam S. Outstanding performance of Bt cotton in India... really? AgBioIndia Bulletin. http://www.lobbywatch.org/archive2.asp?arcid=85. Published February 26, 2003.

16. Heinemann J. Correlation is not causation. RightBiotech. http://rightbiotech.tumblr.com/post/103665842150/correlation-is-not-causation. Published November 27, 2014.

17. Stone GD. Constructing facts: Bt cotton narratives in India. Econ Polit Wkly. 2012;47(38):62-70. http://www.epw.in/special-articles/constructing-facts.html. Accessed November 26, 2013.

18. Pellegrino E, Bedini S, Nuti M, Ercoli L. Impact of genetically engineered maize on agronomic, environmental and toxicological traits: A meta-analysis of 21 years of field data. Sci Rep. 2018;8(1):3113. doi:10.1038/s41598-018-21284-2

19. GMO Free USA. Media reporting on GMO safety is deceptive: Flawed 6,000 study GMO meta-analysis debunked. GMO Free USA. March 2018. https://gmofreeusa.org/news/articles/gmo-safety-meta-analysis-debunked/. Accessed July 8, 2018.

20. Guillemaud T, Lombaert E, Bourguet D. Conflicts of interest in GM Bt crop efficacy and durability studies. PLOS ONE. 2016;11(12):e0167777. doi:10.1371/journal.pone.0167777

21. Miller N. Value of modified corn is more in reducing losses than boosting yields. University of Wisconsin-Madison News. https://news.wisc.edu/value-of-modified-corn-is-more-in-reducing-losses-than-boosting-yields/. Published February 14, 2013. Accessed July 8, 2018.

22. AgBiosafety – University of Nebraska – Lincoln. Backcross breeding. http://agbiosafety.unl.edu. http://agbiosafety.unl.edu/education/backcross.htm. Published 2001. Accessed July 8, 2018.

23. Stone GD. Bt cotton, remarkable success, and four ugly facts. FieldQuestions.com. http://fieldquestions.com/2012/02/12/bt-cotton-remarkable-success-and-four-ugly-facts/. Published February 12, 2012.

24. Jha DK. Bt cotton losing steam, productivity at 5-yr low. Business Standard (India). http://www.business-standard.com/article/markets/bt-cotton-losing-steam-productivity-at-5-yr-low-113020601016_1.html. Published February 7, 2013.

25. Stone GD. Bt cotton is failing: Blame the farmers. FieldQuestions.com. February 2013. http://fieldquestions.com/2013/02/09/bt-cotton-is-failing-blame-the-farmers/.

26. Kranthi KR. Part II: 10 Years of Bt in India. Cotton Grower. http://www.cottongrower.com/uncategorized/part-ii-10-years-of-bt-in-india/. Published May 1, 2011. Accessed August 2, 2014.

27. Buradikatti K. Pink bollworm a nightmare for Bt cotton growers. The Hindu. http://www.thehindu.com/news/national/karnataka/pink-bollworm-a-nightmare-for-bt-cotton-growers/article7950687.ece. Published December 5, 2015. Accessed July 19, 2017.

28. Kurmanath KV. Wily pink bollworm survives Monsanto's Bollgard-II. The Hindu Business Line. http://www.thehindubusinessline.com/economy/agri-business/wily-pink-bollworm-survives-monsantos-bollgardii/article7814810.ece. Published October 28, 2015. Accessed July 19, 2017.

29. Kasabe N. Bt cotton fails, demand for desi cotton seeds growing for kharif season. The Financial Express. http://www.financialexpress.com/market/commodities/demand-for-domestic-cotton-seeds-growing/254123/. Published May 13, 2016. Accessed July 19, 2017.

POUŽITÉ ZDROJE PRE 11. KAPITOLU:

1. International Service for the Acquisition of Agri-biotech Applications (ISAAA). *ISAAA Brief 49-2014: Executive Summary: Global Status of Commercialized Biotech/GM Crops: 2014*. Ithaca, NY: International Service for the Acquisition of Agri-biotech Applications (ISAAA); 2014. http://www.isaaa.org/resources/publications/briefs/49/executivesummary/default.asp.

2. James C. *Global Status of Commercialized Biotech/GM Crops: 2012*. Ithaca, NY: ISAAA; 2012. http://www.isaaa.org/resources/publications/briefs/44/download/isaaa-brief-44-2012.pdf.

3. Mortensen DA, Egan JF, Maxwell BD, Ryan MR, Smith RG. Navigating a critical juncture for sustainable weed management. *BioScience*. 2012;62(1):75-84. http://bioscience.oxfordjournals.org/content/62/1/75.short.

4. Benbrook C. Impacts of genetically engineered crops on pesticide use in the US – The first sixteen years. *Environ Sci Eur*. 2012;24(24). doi:10.1186/2190-4715-24-24

5. Benbrook CM. *Rust, Resistance, Run down Soils, and Rising Costs – Problems Facing Soybean Producers in Argentina. Technical Paper No 8*. AgBioTech InfoNet; 2005. http://www.greenpeace.org/raw/content/international/press/reports/rust-resistence-run-down-soi.pdf.

6. Pengue W. El glifosato y la dominación del ambiente. *Biodiversidad*. 2003;37. http://www.grain.org/biodiversidad/?id=208.

7. MECON (Ministerio de Economia Argentina). Mercado argentino de fitosanitarios – Año 2001. http://bit.ly/1eqMudL. Published 2001.

8. CASAFE. Mercado Argentino de productos fitosanitarios 2012. 2012. http://www.casafe.org/pdf/estadisticas/Informe%20Mercado%20Fitosanitario%202012.pdf.

9. Benbrook CM. Trends in glyphosate herbicide use in the United States and globally. *Environ Sci Eur*. 2016;28(1):3. doi:10.1186/s12302-016-0070-0

10. Klümper W, Qaim M. A meta-analysis of the impacts of genetically modified crops. *PLoS ONE*. 2014;9(11):e111629. doi:10.1371/journal.pone.0111629

11. Nandula VK, Reddy KN, Duke SO, Poston DH. Glyphosate-resistant weeds: Current status and future outlook. *Outlooks Pest Manag*. 2005;16:183–187. http://www.ingentaconnect.com/content/resinf/opm/2005/00000016/00000004/art00012.

12. Syngenta. Syngenta module helps manage glyphosate-resistant weeds. *Delta Farm Press*. http://deltafarmpress.com/syngenta-module-helps-manage-glyphosate-resistant-weeds. Published May 30, 2008.

13. Robinson R. Resistant ryegrass populations rise in Mississippi. Delta Farm Press. http://deltafarmpress.com/resistant-ryegrass-populations-rise-mississippi. Published October 30, 2008.

14. Johnson B, Davis V. Glyphosate resistant horseweed (marestail) found in 9 more Indiana counties. *Pest Crop*. May 2005. http://extension.entm.purdue.edu/pestcrop/2005/issue8/index.html.

15. Nice G, Johnson B, Bauman T. A little burndown madness. *Pest & Crop*. http://extension.entm.purdue.edu/pestcrop/2008/issue1/index.html. Published March 7, 2008.

16. Nice G, Johnson B. Fall applied programs labeled in Indiana. *Pest Crop*. 2006;(23). http://extension.entm.purdue.edu/pestcrop/2006/issue23/table1.html.

17. Randerson J. Genetically-modified superweeds "not uncommon." *New Sci*. February 2002. http://www.newscientist.com/article/dn1882-geneticallymodified-superweeds-not-uncommon.html.

18. Kilman S. Superweed outbreak triggers arms race. *Wall Street Journal*. http://biolargo.blogspot.com/2010/06/round-up-weed-killer-and-acquired.html. Published June 4, 2010.

19. Brasher P. Monsanto paying farmers to increase herbicide use. *Des Moines Register*. http://bit.ly/az3fSo. Published October 19, 2010.

20. Fraser K. *Glyphosate Resistant Weeds – Intensifying*. Guelph, Ontario, Canada: Stratus Ag Research; 2013. http://stratusresearch.com/blog/glyphosate-resistant-weeds-intensifying/.

21. Neuman W, Pollack A. US farmers cope with Roundup-resistant weeds. *New York Times*. http://www.nytimes.com/2010/05/04/business/energy-environment/04weed.html?pagewanted=1&hp. Published May 3, 2010.

22. Caulcutt C. "Superweed" explosion threatens Monsanto heartlands. *France 24*. http://www.gmwatch.org/index.php/news/archive/2009/10923. Published April 19, 2009.

23. Osunsami S. Killer pig weeds threaten crops in the South.http://abcnews.go.com/WN/pig-weed-threatens-agricultureindustryovertaking-fields-crops/story?id=8766404&page=1. Published October 6, 2009.

24. Hollis P. Conservation tillage systems threatened by herbicide-resistant weeds. *Southeast Farm Press*. http://southeastfarmpress.com/management/conservation-tillage-systems-threatened-herbicide-resistant-weeds?page=1. Published March 11, 2015.

25. Gillam C. Dow launches multi-herbicide tolerant GM soybean. *Reuters*. http://bit.ly/qBR9a5. Published August 22, 2011.

26. Kimbrell A. "Agent Orange" corn: Biotech only winner in chemical arms race as herbicide resistant crops fail. *Huffington Post*. http://www.huffingtonpost.com/andrew-kimbrell/agent-orange-corn-biotech_b_1291295.html. Published February 22, 2012.

27. Food & Water Watch. USDA says “yes” to pesticide drift, approves dicamba-tolerant crops. *Food & Water Watch*. http://www.foodandwaterwatch.org/pressreleases/usda-says-yes-to-pesticide-drift-approves-dicamba-tolerant-crops%E2%80%A8/. Published January 15, 2015.

28. US Department of Agriculture (USDA). *Monsanto Petitions (10-188-01p and 12-185-01p) for Determinations of Nonregulated Status for Dicamba-Resistant Soybean and Cotton Varieties: Final Environmental Impact Statement*. Riverdale, MD: US Department of Agriculture; 2014. http://www.aphis.usda.gov/brs/aphisdocs/dicamba_feis.pdf.

29. Steed S. Worry over dicamba grips Arkansas farmers. *Northwest Arkansas Democrat Gazette*. http://www.nwaonline.com/news/2017/jul/02/worry-over-dicamba-grips-farmers-in-sta/. Published July 2, 2017. Accessed July 19, 2017.

30. K-State Agronomy. Dicamba drift to non-Xtend soybeans. Kansas State University. https://webapp.agron.ksu.edu/agr_social/eu_article.throck?article_id=1447. Published July 7, 2017. Accessed July 19, 2017.

31. Reuters. Tennessee joins states taking action on dicamba; Missouri imposes restrictions. *St Louis Post-Dispatch*. http://www.stltoday.com/business/local/tennessee-joins-states-taking-action-on-dicamba-missouri-imposes-restrictions/article_17321ec6-d8ea-5f4b-87f5-69b521bb87da.html. Published July 14, 2017. Accessed July 19, 2017.

32. Rahman A, James TK, Trolove MR. Chemical control options for the dicamba resistant biotype of fathen (Chenopodium album). *N Z Plant Prot*. 2008;61:287–291. http://www.weedscience.org/paper/DicambaResCalbum2.pdf.

33. Heap I. International Survey of Herbicide Resistant Weeds: Weeds resistant to synthetic auxins (O/4) by species and country. http://weedscience.org/Summary/MOA.aspx?MOAID=24. Published April 10, 2014.

34. Martin H. *Herbicide Resistant Weeds*. Ontario Ministry of Agriculture, Food and Rural Affairs; 2013. http://www.omafra.gov.on.ca/english/crops/facts/01-023.htm.

35. Howard P. Visualizing consolidation in the global seed industry: 1996–2008. *Sustainability*. 2009;1:1266-1287.

36. Howard P. Seed industry structure 1996–2013. Philip H. Howard Associate Professor, Michigan State University. https://www.msu.edu/~howardp/seedindustry.html. Published 2014.

37. Douglas MR, Tooker JF. Large-scale deployment of seed treatments has driven rapid increase in use of neonicotinoid insecticides and preemptive pest management in U.S. field crops. *Environ Sci Technol*. March 2015. doi:10.1021/es506141g

38. Naranjo SE. Impacts of Bt crops on non-target invertebrates and insecticide use patterns. *CAB Rev Perspect Agric Vet Sci Nutr Nat Resour*. 2009;4(011).

39. US Department of Agriculture (USDA) Economic Research Service. Recent trends in GE adoption. http://www.ers.usda.gov/data-products/adoption-of-genetically-engineered-crops-in-the-us/recent-trends-in-ge-adoption.aspx. Published July 14, 2014. Accessed April 3, 2015.

40. Tabashnik BE, Gassmann AJ, Crowder DW, Carriere Y. Insect resistance to Bt crops: Evidence versus theory. *Nat Biotechnol*. 2008;26:199–202. doi:10.1038/nbt1382

41. Tirado R. *Picking Cotton: The Choice between Organic and Genetically Engineered Cotton for Farmers in South India*. Amsterdam, The Netherlands: Greenpeace; 2010. http://www.greenpeace.org/international/Global/international/publications/agriculture/2010/Picking_Cotton.pdf.

42. Rensburg JBJ. First report of field resistance by the stem borer, Busseola fusca (Fuller) to Bt-transgenic maize. *Afr J Plant Soil*. 2007;24:147-151. http://www.eko.org.ee/gmo/images/stories/research/filed_resistance_to_bt_maize.pdf.

43. Huang F, Leonard BR, Wu X. Resistance of sugarcane borer to Bacillus thuringiensis Cry1Ab toxin. *Entomol Exp Appl*. 2007;124:117-123. http://agribiotech.free.fr/Huang_2007%20-%20Cry1Ab%20toxin%20-%20Bt%20resistant%20management.pdf.

44. Keim B. Voracious worm evolves to eat biotech corn engineered to kill it. *Wired.com*. March 2014. http://www.wired.com/2014/03/rootworm-resistance-bt-corn/.

45. Gassmann AJ, Petzold-Maxwell JL, Keweshan RS, Dunbar MW. Field-evolved resistance to Bt maize by Western corn rootworm. *PLoS ONE*. 2011;6:e22629. doi:10.1371/journal.pone.0022629

46. Associated Press. Monsanto shares slip on bug-resistant corn woes. *Bloomberg Businessweek*. http://www.businessweek.com/ap/financialnews/D9PDS5KO0.htm. Published August 29, 2011.

47. Gray M. Western corn rootworm resistance to Bt corn confirmed in more Illinois counties. *Aces News*. http://www.aces.uiuc.edu/news/stories/news5903.html. Published April 7, 2014.

48. Gillam C. GMO corn failing to protect fields from pest damage – report. *Reuters*. http://www.reuters.com/article/2013/08/28/usa-gmo-corn-rootworm-idUSL2N0GT1ED20130828. Published August 28, 2013.

49. Unglesbee E. Worm rebellion continues: Bollworm populations threaten Bt cotton again this year. *DTN Progressive Farmer*. https://www.dtnpf.com/agriculture/web/ag/news/crops/article/2017/07/20/bollworm-populations-threaten-bt. Published July 20, 2017. Accessed July 21, 2017.

50. Farias JR, Andow DA, Horikoshi RJ, et al. Field-evolved resistance to Cry1F maize by Spodoptera frugiperda (Lepidoptera: Noctuidae) in Brazil. *Crop Prot*. 2014;64:150-158. doi:10.1016/j.cropro.2014.06.019

51. Dorhout DL, Rice ME. Intraguild competition and enhanced survival of western bean cutworm (Lepidoptera: Noctuidae) on transgenic Cry1Ab (MON810) Bacillus thuringiensis corn. *J Econ Entomol*. 2010;103:54–62. http://www.bioone.org/doi/abs/10.1603/EC09247?prevSearch=&cookieSet=1.

52. Pearson H. Transgenic cotton drives insect boom. *Nature*. July 2006. doi:10.1038/news060724-5

53. Wang S, Just DR, Pinstrup-Andersen P. Bt-cotton and secondary pests. *Int J Biotechnol*. 2008;10:113–121. http://www.inderscience.com/info/inarticle.php?artid=18348.

54. Goswami B. Making a meal of Bt cotton. Infochange. http://infochangeindia.org/other/features/making-a-meal-of-bt-cotton.html?Itemid=. Published September 2007.

55. Ashk GKS. Bt cotton not pest resistant. *The Times of India*. http://timesofindia.indiatimes.com/Chandigarh/Bt_cotton_not_pest_resistant/articleshow/2305806.cms. Published August 24, 2007.

56. The Economic Times (India). Bug makes meal of Punjab cotton, whither Bt magic?http://www.gmwatch.org/latest-listing/46-2007/7640. Published September 2, 2007.

57. Rohini RS, Mallapur CP, Udikeri SS. Incidence of mirid bug, Creontiades biseratense (Distant) on Bt cotton in Karnataka. *Karnataka J Agric Sci*. 2009;22:680–681.

58. Zhao JH, Ho P, Azadi H. Benefits of Bt cotton counterbalanced by secondary pests? Perceptions of ecological change in China. *Env Monit Assess*. 2010;173:985-994. doi:10.1007/s10661-010-1439-y

59. Lu Y, Wu K, Jiang Y, et al. Mirid bug outbreaks in multiple crops correlated with wide-scale adoption of Bt cotton in China. *Science*. 2010;328:1151-1154. doi:10.1126/science.1187881

60. Buradikatti K. Pink bollworm a nightmare for Bt cotton growers. *The Hindu*. http://www.thehindu.com/news/national/karnataka/pink-bollworm-a-nightmare-for-bt-cotton-growers/article7950687.ece. Published December 5, 2015. Accessed July 19, 2017.

61. Kurmanath KV. Wily pink bollworm survives Monsanto's Bollgard-II. *The Hindu Business Line*. http://www.thehindubusinessline.com/economy/agri-business/wily-pink-bollworm-survives-monsantos-bollgardii/article7814810.ece. Published October 28, 2015. Accessed July 19, 2017.

62. Kasabe N. Bt cotton fails, demand for desi cotton seeds growing for kharif season. *The Financial Express*. http://www.financialexpress.com/market/commodities/demand-for-domestic-cotton-seeds-growing/254123/. Published May 13, 2016. Accessed July 19, 2017.

63. Stone GD, Flachs A. The ox fall down: path-breaking and technology treadmills in Indian cotton agriculture. *J Peasant Stud*. 2017;0(0):1-24. doi:10.1080/03066150.2017.1291505

64. Kouser S, Qaim M. Impact of Bt cotton on pesticide poisoning in smallholder agriculture: A panel data analysis. *Ecol Econ*. 2011.

65. Lokhande K. The fatal chain: Failure of Bt cotton, increased sprays, poisoning deaths. *The Hitavada*. http://thehitavada.com/Encyc/2017/10/13/The-Fatal-Chain--Failure-of-Bt-Cotton,-increased-sprays,-poisoning-deaths.aspx. Published October 13, 2017. Accessed July 8, 2018.

66. BBC News. The Indian farmers falling prey to pesticide. *BBC News*. https://www.bbc.com/news/world-asia-india-41510730. Published October 5, 2017. Accessed July 8, 2018.

67. Ghumman FA. The merits of tradition. *Dawn*. http://www.dawn.com/news/1297524. Published November 21, 2016. Accessed July 19, 2017.

68. Blaise D. Yield, boll distribution and fibre quality of hybrid cotton (Gossypium hirsutum L.) as influenced by organic and modern methods of cultivation. *J Agron Crop Sci*. 2006;192(4):248-256. doi:10.1111/j.1439-037X.2006.00218.x

69. Gutierrez AP, Ponti L, Herren HR, Baumgärtner J, Kenmore PE. Deconstructing Indian cotton: weather, yields, and suicides. *Environ Sci Eur*. 2015;27(1):12. doi:10.1186/s12302-015-0043-8

70. Kranthi KR. Cotton production systems - Need for a change in India. *Cotton Stat News*. December 2014:4–7. http://www.cicr.org.in/pdf/Kranthi_art/cotton_prod_system_dec_2014.pdf.

71. Heinemann JA, Massaro M, Coray DS, Agapito-Tenfen SZ, Wen JD. Sustainability and innovation in staple crop production in the US Midwest. *Int J Agric Sustain*. June 2013:1–18. http://www.tandfonline.com/doi/full/10.1080/14735903.2013.806408#.UrnaHfYnuUc.

POUŽITÉ ZDROJE PRE 12. KAPITOLU:

1. James C. *ISAAA Brief 46-2013: Slides & Tables: 2013 ISAAA Report on Global Status of Biotech/GM Crops*. Ithaca, NY: International Service for the Acquisition of Agri-biotech

Applications (ISAAA); 2013. http://www.isaaa.org/resources/publications/briefs/46/pptslides/default.asp.

2. Ford B, Bateman LA, Gutierrez-Palominos L, Park R, Nomura DK. Mapping proteome-wide targets of glyphosate in mice. *Cell Chem Biol*. 2017;24(2):133-140. doi:10.1016/j.chembiol.2016.12.013

3. Lee H-L, Kan C-D, Tsai C-L, Liou M-J, Guo H-R. Comparative effects of the formulation of glyphosate-surfactant herbicides on hemodynamics in swine. *Clin Toxicol Phila Pa*. 2009;47(7):651-658. doi:10.1080/15563650903158862

4. Adam A, Marzuki A, Abdul Rahman H, Abdul Aziz M. The oral and intratracheal toxicities of ROUNDUP and its components to rats. *Vet Hum Toxicol*. 1997;39(3):147-151.

5. Mesnage R, Defarge N, de Vendomois JS, Séralini GE. Major pesticides are more toxic to human cells than their declared active principles. *BioMed Res Int*. 2014;2014. doi:10.1155/2014/179691

6. Mesnage R, Antoniou MN. Ignoring adjuvant toxicity falsifies the safety profile of commercial pesticides. *Front Public Health*. 2018;5. doi:10.3389/fpubh.2017.00361

7. Séralini G-E, Clair E, Mesnage R, et al. Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Environ Sci Eur*. 2014;26(14). doi:10.1186/s12302-014-0014-5

8. Mesnage R, Arno M, Costanzo M, Malatesta M, Séralini G-E, Antoniou MN. Transcriptome profile analysis reflects rat liver and kidney damage following chronic ultra-low dose Roundup exposure. *Environ Health*. 2015;14(1):70. doi:10.1186/s12940-015-0056-1

9. Mesnage R, Renney G, Séralini G-E, Ward M, Antoniou MN. Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide. *Sci Rep*. 2017;7:39328. doi:10.1038/srep39328

10. Dedeke GA, Owagboriaye FO, Ademolu KO, Olujimi OO, Aladesida AA. Comparative assessment on mechanism underlying renal toxicity of commercial formulation of Roundup herbicide and glyphosate alone in male albino rat. *Int J Toxicol*. January 2018:1091581818779553. doi:10.1177/1091581818779553

11. Jayasumana C, Gunatilake S, Senanayake P. Glyphosate, hard water and nephrotoxic metals: Are they the culprits behind the epidemic of chronic kidney disease of unknown etiology in Sri Lanka? *Int J Environ Res Public Health*. 2014;11(2):2125-2147. doi:10.3390/ijerph110202125

12. Jayasumana C, Paranagama P, Agampodi S, Wijewardane C, Gunatilake S, Siribaddana S. Drinking well water and occupational exposure to herbicides is associated with chronic kidney disease, in Padavi-Sripura, Sri Lanka. *Environ Health*. 2015;14(1):6. doi:10.1186/1476-069X-14-6

13. Séralini GE, Clair E, Mesnage R, et al. [RETRACTED:] Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Food Chem Toxicol*. 2012;50:4221-4231. http://www.sciencedirect.com/science/article/pii/S0278691512005637.

14. Soso AB, Barcellos LJG, Ranzani-Paiva MJ, et al. Chronic exposure to sub-lethal concentration of a glyphosate-based herbicide alters hormone profiles and affects reproduction of female Jundiá (Rhamdia quelen). *Environ Toxicol Pharmacol*. 2007;23:308–313. http://www.biodinamica.org.br/Biosseguran%C3%A7a/Plantas_geneticam_modif/Files/PDFs/Soso%20et%20al,%202006,%20Env%20Toxico.pdf.

15. Walsh LP, McCormick C, Martin C, Stocco DM. Roundup inhibits steroidogenesis by disrupting steroidogenic acute regulatory (StAR) protein expression. *Env Health Perspect*. 2000;108:769-776. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=10964798.

16. Romano RM, Romano MA, Bernardi MM, Furtado PV, Oliveira CA. Prepubertal exposure to commercial formulation of the herbicide Glyphosate alters testosterone levels and testicular morphology. *Arch Toxicol*. 2010;84:309-317.

17. Gasnier C, Dumont C, Benachour N, Clair E, Chagnon MC, Séralini GE. Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines. *Toxicology*. 2009;262:184-191. doi:10.1016/j.tox.2009.06.006

18. Hokanson R, Fudge R, Chowdhary R, Busbee D. Alteration of estrogen-regulated gene expression in human cells induced by the agricultural and horticultural herbicide glyphosate. *Hum Exp Toxicol*. 2007;26:747-752. doi:10.1177/0960327107083453

19. Thongprakaisang S, Thiantanawat A, Rangkadilok N, Suriyo T, Satayavivad J. Glyphosate induces human breast cancer cells growth via estrogen receptors. *Food Chem Toxicol*. 2013;59:129-136. doi:10.1016/j.fct.2013.05.057

20. Mesnage R, Phedonos A, Biserni M, et al. Evaluation of estrogen receptor alpha activation by glyphosate-based herbicide constituents. *Food Chem Toxicol*. 2017. doi:10.1016/j.fct.2017.07.025

21. Dallegrave E, Mantese FD, Oliveira RT, Andrade AJ, Dalsenter PR, Langeloh A. Pre- and postnatal toxicity of the commercial glyphosate formulation in Wistar rats. *Arch Toxicol*. 2007;81:665–73. doi:10.1007/s00204-006-0170-5

22. Owagboriaye FO, Dedeke GA, Ademolu KO, Olujimi OO, Ashidi JS, Adeyinka AA. Reproductive toxicity of Roundup herbicide exposure in male albino rat. *Exp Toxicol Pathol Off J Ges Toxikol Pathol*. 2017;69(7):461-468. doi:10.1016/j.etp.2017.04.007

23. Savitz DA, Arbuckle T, Kaczor D, Curtis KM. Male pesticide exposure and pregnancy outcome. *Am J Epidemiol*. 1997;146:1025-1036. http://www.ncbi.nlm.nih.gov/pubmed/9420527.

24. Krüger M, Shehata AA, Schrödl W, Rodloff A. Glyphosate suppresses the antagonistic effect of Enterococcus spp. on Clostridium botulinum. *Anaerobe*. 2013;20:74–78.

25. Marc J, Mulner-Lorillon O, Belle R. Glyphosate-based pesticides affect cell cycle regulation. *Biol Cell*. 2004;96:245-249. doi:10.1016/j.biolcel.2003.11.010

26. Bellé R, Le Bouffant R, Morales J, Cosson B, Cormier P, Mulner-Lorillon O. Sea urchin embryo, DNA-damaged cell cycle checkpoint and the mechanisms initiating cancer development. *J Soc Biol*. 2007;201:317–27. http://www.ncbi.nlm.nih.gov/pubmed/18157084.

27. Marc J, Mulner-Lorillon O, Boulben S, Hureau D, Durand G, Bellé R. Pesticide Roundup provokes cell division dysfunction at the level of CDK1/cyclin B activation. *Chem Res Toxicol*. 2002;15(3):326-331. http://www.ncbi.nlm.nih.gov/pubmed/11896679.

28. Marc J, Bellé R, Morales J, Cormier P, Mulner-Lorillon O. Formulated glyphosate activates the DNA-response checkpoint of the cell cycle leading to the prevention of G2/M transition. *Toxicol Sci*. 2004;82:436-442. doi:10.1093/toxsci/kfh281

29. Mañas F, Peralta L, Raviolo J, et al. Genotoxicity of glyphosate assessed by the Comet assay and cytogenic tests. *Env Toxicol Pharmacol*. 2009;28:37–41. http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4VKDMVS-2&_user=10&_coverDate=07/31/2009&_rdoc=1&_f

mt=high&_orig=search&_origin=search&_sort=d&_docanchor=&view=c&_searchStrId=1513188373&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=391a5aaaabd715b32394f7e616054e0d&searchtype=a.

30. Mañas F, Peralta L, Raviolo J, et al. Genotoxicity of AMPA, the environmental metabolite of glyphosate, assessed by the Comet assay and cytogenetic tests. *Ecotoxicol Env Saf*. 2009;72:834-837. doi:10.1016/j.ecoenv.2008.09.019

31. Antoniou M, Habib MEM, Leifert C, et al. Teratogenic effects of glyphosate-based herbicides: Divergence of regulatory decisions from scientific evidence. *J Env Anal Toxicol*. 2012;S4:006. doi:10.4172/2161-0525.S4-006

32. Paganelli A, Gnazzo V, Acosta H, López SL, Carrasco AE. Glyphosate-based herbicides produce teratogenic effects on vertebrates by impairing retinoic acid signaling. *Chem Res Toxicol*. 2010;23:1586–1595. doi:10.1021/tx1001749

33. Dallegrave E, Mantese FD, Coelho RS, Pereira JD, Dalsenter PR, Langeloh A. The teratogenic potential of the herbicide glyphosate-Roundup in Wistar rats. *Toxicol Lett*. 2003;142:45-52. http://www.ncbi.nlm.nih.gov/pubmed/12765238.

34. Anadón A, del Pino J, Martínez MA, et al. Neurotoxicological effects of the herbicide glyphosate. *Toxicol Lett*. 2008;180S:S164.

35. Garry VF, Harkins ME, Erickson LL, Long-Simpson LK, Holland SE, Burroughs BL. Birth defects, season of conception, and sex of children born to pesticide applicators living in the Red River Valley of Minnesota, USA. *Env Health Perspect*. 2002;110 Suppl 3:441-449. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=12060842.

36. Barbosa ER, Leiros da Costa MD, Bacheschi LA, Scaff M, Leite CC. Parkinsonism after glycine-derivate exposure. *Mov Disord*. 2001;16:565–568.

37. Wang G, Fan XN, Tan YY, Cheng Q, Chen SD. Parkinsonism after chronic occupational exposure to glyphosate. *Park Relat Disord*. 2011;17:486-487. doi:10.1016/j.parkreldis.2011.02.003

38. Gui YX, Fan XN, Wang HM, Wang G, Chen SD. Glyphosate induced cell death through apoptotic and autophagic mechanisms. *Neurotoxicol Teratol*. 2012;34(3):344–349.

39. Eriksson M, Hardell L, Carlberg M, Akerman M. Pesticide exposure as risk factor for non-Hodgkin lymphoma including histopathological subgroup analysis. *Int J Cancer*. 2008;123:1657-1663. doi:10.1002/ijc.23589

40. International Agency for Research on Cancer. *IARC Monographs Volume 112: Evaluation of Five Organophosphate Insecticides and Herbicides*. Lyon, France: World Health Organization; 2015. http://monographs.iarc.fr/ENG/Monographs/vol112/.

41. George J, Prasad S, Mahmood Z, Shukla Y. Studies on glyphosate-induced carcinogenicity in mouse skin: A proteomic approach. *J Proteomics*. 2010;73:951–64. doi:10.1016/j.jprot.2009.12.008

42. Hardell L, Eriksson M. A case-control study of non-Hodgkin lymphoma and exposure to pesticides. *Cancer*. 1999;85:1353–60. doi:10.1002/(SICI)1097-0142(19990315)85:6<1353::AID-CNCR19>3.0.CO;2-1

43. Hardell L, Eriksson M, Nordstrom M. Exposure to pesticides as risk factor for non-Hodgkin's lymphoma and hairy cell leukemia: Pooled analysis of two Swedish case-control studies. *Leuk Lymphoma*. 2002;43:1043-1049. http://www.ncbi.nlm.nih.gov/pubmed/12148884.

44. Mills PJ, Kania-Korwel I, Fagan J, McEvoy LK, Laughlin GA, Barrett-Connor E. Excretion of the herbicide glyphosate in older adults between 1993 and 2016. *JAMA*. 2017;318(16):1610-1611. doi:10.1001/jama.2017.11726

45. Parvez S, Gerona RR, Proctor C, et al. Glyphosate exposure in pregnancy and shortened gestational length: A prospective Indiana birth cohort study. *Environ Health*. 2018;17:23. doi:10.1186/s12940-018-0367-0

46. American Liver Foundation. Non-alcoholic fatty liver disease. American Liver Foundation. https://www.liverfoundation.org/obesity-and-fatty-livers/. Published 2016. Accessed July 13, 2017.

47. Weiß J, Rau M, Geier A. Non-alcoholic fatty liver disease. *Dtsch Ärztebl Int*. 2014;111(26):447-452. doi:10.3238/arztebl.2014.0447

48. Baffy G. Hepatocellular carcinoma in non-alcoholic fatty liver disease: Epidemiology, pathogenesis, and prevention. *J Clin Transl Hepatol*. 2013;1(2):131-137. doi:10.14218/JCTH.2013.00005

49. White DL, Kanwal F, El-Serag HB. Non-alcoholic fatty liver disease and hepatocellular cancer: A systematic review. *Clin Gastroenterol Hepatol Off Clin Pract J Am Gastroenterol Assoc*. 2012;10(12):1342-1359.e2. doi:10.1016/j.cgh.2012.10.001

50. Council of the European Union. Council directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption. *Off J Eur Communities*. 1998;OJ L 330:32–54. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:330:0032:0054:EN:PDF.

51. US Environmental Protection Agency (EPA). National primary drinking water regulations: Glyphosate. October 1995.

52. Niemann L, Sieke C, Pfeil R, Solecki R. A critical review of glyphosate findings in human urine samples and comparison with the exposure of operators and consumers. *J Für Verbraucherschutz Leb*. January 2015:1-10. doi:10.1007/s00003-014-0927-3

53. Sustainable Pulse. UCSF presentation reveals glyphosate contamination in people across America. sustainablepulse.com. https://sustainablepulse.com/2016/05/31/ucsf-presentation-reveals-glyphosate-contamination-in-people-across-america-2/#.Wz_dQy3GzGa. Published May 31, 2016. Accessed July 6, 2018.

54. RMS Germany. *Final Addendum to the Renewal Assessment Report - Public Version - Risk Assessment Provided by the Rapporteur Member State Germany and Co-Rapporteur Member State Slovakia for the Active Substance GLYPHOSATE According to the Procedure for the Renewal of the Inclusion of a Second Group of Active Substances in Annex I to Council Directive 91/414/EEC Laid down in Commission Regulation (EU) No. 1141/2010. Volume 1*. Berlin, Germany; 2015. http://gmwatch.org/files/Final_addendum_to_the_Renewal_Assessment_Report.pdf.

55. RMS Germany. *Renewal Assessment Report Glyphosate. Addendum 1 to RAR, Assessment of IARC Monographs Volume 112 (2015): Glyphosate, 31 August 2015*. Berlin, Germany; 2015. http://gmwatch.org/files/Renewal_Assessment_Report_Glyphosate_Addendum1_RAR.pdf.

56. European Food Safety Authority (EFSA). Conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate. *EFSA J*. 2015;13(11):4302. doi:10.2903/j.efsa.2015.4302

57. JMPR. *Joint FAO/WHO Meeting on Pesticide Residues: Summary Report Issued 16 May 2016*. Geneva, Switzerland: FAO and WHO; 2016. www.who.int/foodsafety/jmprsummary2016.pdf.

58. ECHA Committee for Risk Assessment (RAC). *Opinion Proposing Harmonised Classification and Labelling at EU Level of Glyphosate (ISO); N-(Phosphonomethyl)Glycine: EC Number: 213-997-4; CAS Number: 1071-83-6; CLH-O-0000001412-86-149/F. Adopted 15 March 2017*. Helsinki, Finland: ECHA; 2017. https://echa.europa.eu/documents/10162/2d3a87cc-5ca1-31d6-8967-9f124f1ab7ae.

59. Portier CJ, Armstrong BK, Baguley BC, et al. Differences in the carcinogenic evaluation of glyphosate between the International Agency for Research on Cancer (IARC) and the European Food Safety Authority (EFSA). *J Epidemiol Community Health*. 2016;70(8). doi:10.1136/jech-2015-207005

60. Tarazona JV, Court-Marques D, Tiramani M, et al. Glyphosate toxicity and carcinogenicity: a review of the scientific basis of the European Union assessment and its differences with IARC. *Arch Toxicol*. 2017;91(8):2723-2743. doi:10.1007/s00204-017-1962-5

61. Portier CJ, Clausing P. Re: Tarazona et al. (2017): Glyphosate toxicity and carcinogenicity: a review of the scientific basis of the European Union assessment and its differences with IARC. *Arch Toxicol*. June 2017. doi:10.1007/s00204-017-2009-7

62. Clausing P, Robinson C, Burtscher-Schaden H. Pesticides and public health: an analysis of the regulatory approach to assessing the carcinogenicity of glyphosate in the European Union. *J Epidemiol Community Health*. March 2018:jech-2017-209776. doi:10.1136/jech-2017-209776

63. Clausing P. *Glyphosate and Cancer: Authorities Systematically Breach Regulations*. Vienna, Austria: GLOBAL 2000; 2017. http://www.gmwatch.org/files/GLO_02_Glyphosat_EN.pdf.

64. European Food Safety Authority. Glyphosate: EFSA shares raw data from risk assessment. EFSA. https://www.efsa.europa.eu/en/press/news/161209. Published December 9, 2016.

65. Portier CJ. Open letter: Review of the carcinogenicity of glyphosate by ECHA, EFSA and BfR. May 2017. http://gmwatch.org/files/Letter_Juncker_28_May_2017.pdf.

66. Rosenblatt J, Mulvany L, Waldman P. EPA official accused of helping Monsanto “kill” cancer study. *Bloomberg*. https://www.bloomberg.com/news/articles/2017-03-14/monsanto-accused-of-ghost-writing-papers-on-roundup-cancer-risk. Published March 14, 2017. Accessed July 24, 2017.

67. Foucart S. Glyphosate : discorde à l’Agence de protection de l’environnement américaine. *Le Monde*. http://www.lemonde.fr/planete/article/2017/03/14/glyphosate-discorde-a-l-agence-de-protection-de-l-environnement-americaine_5094158_3244.html. Published March 14, 2017. Accessed July 24, 2017.

68. GMWatch. Glyphosate: Discord at the US Environmental Protection Agency. http://95.211.238.147/en/news/latest-news/17505-glyphosate-discord-at-the-us-environmental-protection-agency. Published March 15, 2017. Accessed July 24, 2017.

69. Burtscher-Schaden H, Clausing P, Robinson C. *Glyphosate and Cancer: Buying Science*. Vienna, Austria: GLOBAL 2000; 2017. http://www.gmwatch.org/files/Glyphosate_and_cancer_Buying_science_EN_0.pdf.

70. Gillam C. Of mice, Monsanto and a mysterious tumor. *Environmental Health News*. http://www.environmentalhealthnews.org/ehs/news/2017/june/of-mice-monsanto-and-a-mysterious-tumor. Published June 8, 2017. Accessed July 24, 2017.

71. Staes B, Hautala H, Javor B, Rivasi M. Letter to Honorable Vince Chhabria, United States District Court, Northern District of California (San Francisco Division). July 2017. https://usrtk.org/wp-content/uploads/2017/07/Letter-from-MEPS.pdf.

72. BAuA (German Federal Institute for Occupational Safety and Health). *Proposal for Harmonised Classification and Labelling. Based on Regulation (EC) No 1272/2008 (CLP Regulation), Annex VI, Part 2. Substance Name: N-(Phosphonomethyl)Glycine; Glyphosate (ISO)*. Dortmund, Germany: European Chemicals Agency (ECHA); 2016. http://echa.europa.eu/documents/10162/13626/clh_report_glyphosate_en.pdf.

73. Corporate Europe Observatory. Did EFSA lie to the press on its glyphosate assessment? *Corporate Europe Observatory*. https://corporateeurope.org/food-and-agriculture/2017/06/did-efsa-lie-press-its-glyphosate-assessment. Published June 30, 2017. Accessed July 25, 2017.

74. Sritana N, Suriyo T, Kanitwithayanun J, Songvasin BH, Thiantanawat A, Satayavivad J. Glyphosate induces growth of estrogen receptor alpha positive cholangiocarcinoma cells via non-genomic estrogen receptor/ERK1/2 signaling pathway. *Food Chem Toxicol Int J Publ Br Ind Biol Res Assoc*. 2018;118:595-607. doi:10.1016/j.fct.2018.06.014

75. Comision Provincial de Investigación de Contaminantes del Agua. *Primer Informe [First Report]*. Resistencia, Chaco, Argentina; 2010. http://www.gmwatch.org/files/Chaco_Government_Report_Spanish.pdf ; English translation at http://www.gmwatch.org/files/Chaco_Government_Report_English.pdf.

76. Lopez SL, Aiassa D, Benitez-Leite S, et al. Pesticides used in South American GMO-based agriculture: A review of their effects on humans and animal models. In: Fishbein JC, Heilman JM, eds. *Advances in Molecular Toxicology*. Vol 6. New York: Elsevier; 2012:41–75.

77. Anadón A, Martinez-Larranaga MR, Martinez MA, et al. Toxicokinetics of glyphosate and its metabolite aminomethyl phosphonic acid in rats. *Toxicol Lett*. 2009;190:91-95. doi:10.1016/j.toxlet.2009.07.008

78. Brewster DW, Warren J, Hopkins WE. Metabolism of glyphosate in Sprague-Dawley rats: tissue distribution, identification, and quantitation of glyphosate-derived materials following a single oral dose. *Fundam Appl Toxicol Off J Soc Toxicol*. 1991;17(1):43-51. https://www.ncbi.nlm.nih.gov/pubmed/1916078.

79. Glyphosate Task Force. *Residual Traces of Glyphosate in Urine*. Glyphosate Task Force; Undated. http://www.glyphosate.eu/system/files/sidebox-files/residual_traces_of_glyphosate_in_urine_en.pdf.

80. Krüger M, Schledorn P, Schrödl W, Hoppe HW, Lutz W, Shehata AA. Detection of glyphosate residues in animals and humans. *J Env Anal Toxicol*. 2014;4(2). doi:10.4172/2161-0525.1000210

81. Krüger M, Schrödl W, Neuhaus J, Shehata AA. Field investigations of glyphosate in urine of Danish dairy cows. *J Env Anal Toxicol*. 2013;3(5). doi:http://dx.doi.org/10.4172/2161-0525.1000186

82. Majewski MS, Coupe, R. H., Foreman WT, Capel PD. Pesticides in Mississippi air and rain: A comparison between 1995 and 2007. *Env Toxicol Chem*. February 2014. doi:10.1002/etc.2550

83. Poulsen MS, Rytting E, Mose T, Knudsen LE. Modeling placental transport: Correlation of in vitro BeWo cell permeability and ex vivo human placental perfusion. *Toxicol Vitro*. 2009;23:1380–6. doi:10.1016/j.tiv.2009.07.028

84. European Commission. EU pesticides database. http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=homepage&language=EN. Published April 7, 2016.

85. Codex Alimentarius. *Pesticide Residues in Food and Feed: 158 Glyphosate*. Food and Agriculture Organization and World Health Organization; 2013. http://www.codexalimentarius.net/pestres/data/pesticides/details.html?id=158.

86. European Commission. EU Pesticides database: Glyphosate. http://ec.europa.eu. http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=activesubstance.detail&language=EN&selectedID=1438. Published 2018. Accessed July 9, 2018.

87. National Pesticide Information Center. *Glyphosate Technical Fact Sheet*. Corvallis, OR: NPIC, Oregon State University/US EPA; 2014. http://npic.orst.edu/factsheets/glyphotech.pdf.

88. Vandenberg LN, Colborn T, Hayes TB, et al. Hormones and endocrine-disrupting chemicals: Low-dose effects and nonmonotonic dose responses. *Endocr Rev*. 2012;33(3):378-455. doi:10.1210/er.2011-1050

89. Mesnage R, Defarge N, Spiroux de Vendômois J, Séralini GE. Potential toxic effects of glyphosate and its commercial formulations below regulatory limits. *Food Chem Toxicol*. 2015;84:133–153. doi:10.1016/j.fct.2015.08.012

90. Bøhn T, Cuhra M, Traavik T, Sanden M, Fagan J, Primicerio R. Compositional differences in soybeans on the market: glyphosate accumulates in Roundup Ready GM soybeans. *Food Chem*. 2014;153(2014):207–215. doi:10.1016/j.foodchem.2013.12.054

91. Bøhn T, Cuhra M. How “extreme levels” of Roundup in food became the industry norm. *Indep Sci News*. March 2014. http://www.independentsciencenews.org/news/how-extreme-levels-of-roundup-in-food-became-the-industry-norm/.

92. Testbiotech. *High Levels of Residues from Spraying with Glyphosate Found in Soybeans in Argentina*. Munich, Germany; 2013. http://www.testbiotech.org/sites/default/files/TBT_Background_Glyphosate_Argentina_0.pdf.

93. Krüger M, Schrödl W, Pedersen I, Shehata AA. Detection of glyphosate in malformed piglets. *J Environ Anal Toxicol*. 2014;4(5). doi:http://dx.doi.org/10.4172/2161-0525.1000230

94. Myers JP, Antoniou MN, Blumberg B, et al. Concerns over use of glyphosate-based herbicides and risks associated with exposures: a consensus statement. *Environ Health*. 2016;15(19). doi:10.1186/s12940-016-0117-0

95. Vandenberg LN, Blumberg B, Antoniou MN, et al. Is it time to reassess current safety standards for glyphosate-based herbicides? *J Epidemiol Community Health*. 2017;71(6):613-618. doi:10.1136/jech-2016-208463

96. Kimbrell A. “Agent Orange” corn: Biotech only winner in chemical arms race as herbicide resistant crops fail. *Huffington Post*. http://www.huffingtonpost.com/andrew-kimbrell/agent-orange-corn-biotech_b_1291295.html. Published February 22, 2012.

97. Food & Water Watch. USDA says “yes” to pesticide drift, approves dicamba-tolerant crops. *Food & Water Watch*. http://www.foodandwaterwatch.org/pressreleases/usda-says-yes-to-pesticide-drift-approves-dicamba-tolerant-crops%E2%80%A8/. Published January 15, 2015.

98. Zahm SH, Weisenburger DD, Babbitt PA, et al. A case-control study of non-Hodgkin’s lymphoma and the herbicide 2,4-dichlorophenoxyacetic acid (2,4-D) in eastern Nebraska. *Epidemiology*. 1990;1:349-356. http://www.ncbi.nlm.nih.gov/pubmed/2078610.

99. Hardell L, Eriksson M. The association between soft tissue sarcomas and exposure to phenoxyacetic acids. A new case-referent study. *Cancer*. 1988;62(3):652-656.

100. Shearer R. Public health effects of the aquatic use of herbicides – 2,4-D, dichlobenil, endothall and diquat. In: Shearer R, Halter M, eds. *Literature Reviews of Four Selected Herbicides: 2,4-D, Dichlobenil, Diquat & Endothall*. Seattle, WA: Municipality of Metropolitan Seattle; 1980.

101. PubChem Open Chemistry Database. Dicamba. PubChem Open Chemistry Database. http://pubchem.ncbi.nlm.nih.gov/compound/dicamba#section=Top. Published 2015.

102. Nosowitz D. EPA-approved dicamba Is an airborne menace and some states are banning it. *Modern Farmer*. http://modernfarmer.com/2017/07/dicamba-drift/. Published July 11, 2017. Accessed July 30, 2017.

103. Doohan D. Reducing 2,4-D and dicamba drift risk to fruits, vegetables and landscape plants. Ohioline – Ohio State University Extension. /factsheet/hyg-6105. Published January 21, 2016. Accessed July 30, 2017.

104. Séralini GE, Mesnage R, Clair E, Gress S, de Vendômois JS, Cellier D. Genetically modified crops safety assessments: Present limits and possible improvements. *Environ Sci Eur*. 2011;23. doi:10.1186/2190-4715-23-10

105. Székács A, Darvas B. Comparative aspects of Cry toxin usage in insect control. In: Ishaaya I, Palli SR, Horowitz AR, eds. *Advanced Technologies for Managing Insect Pests*. Dordrecht, Netherlands: Springer; 2012:195–230.

106. Freese W, Schubert D. Safety testing and regulation of genetically engineered foods. *Biotechnol Genet Eng Rev*. 2004:299-324. http://www.saveourseeds.org/downloads/schubert_safety_reg_us_11_2004.pdf.

107. Doyle MR, Amasino RM. A single amino acid change in the enhancer of zeste ortholog CURLY LEAF results in vernalization-independent, rapid flowering in Arabidopsis. *Plant Physiol*. 2009;151:1688-1697. doi:10.1104/pp.109.145581

108. Hanzawa Y, Money T, Bradley D. A single amino acid converts a repressor to an activator of flowering. *Proc Natl Acad Sci U A*. 2005;102:7748-7753. doi:10.1073/pnas.0500932102

109. Schünemann R, Knaak N, Fiuza LM. Mode of action and specificity of Bacillus thuringiensis toxins in the control of caterpillars and stink bugs in soybean culture. *ISRN Microbiol*. 2014;2014. doi:10.1155/2014/135675

110. Li H, Buschman LL, Huang F, Zhu KY, Bonning B, Oppert BA. Resistance to Bacillus thuringiensis endotoxins in the European corn borer. *Biopestic Int*. 2007;3:96–107.

111. Losey JE, Rayor LS, Carter ME. Transgenic pollen harms monarch larvae. *Nature*. 1999;399:214. doi:10.1038/20338

112. Jesse LCH, Obrycki JJ. Field deposition of Bt transgenic corn pollen: Lethal effects on the monarch butterfly. *J Oecologia*. 2000;125:241–248. http://adamoliverbrown.com/wp-content/uploads/2010/01/5-BT-corn-and-monarch.pdf.

113. Hilbeck A, Baumgartner M, Fried PM, Bigler F. Effects of transgenic Bt corn-fed prey on immature development of Chrysoperla carnea (Neuroptera: Chrysopidae). *Environ Entomol*. 1998;27(2):480–487. http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B7GVS-4DS333P-10&_user=10&_coverDate=01/01/2001&_rdoc=1&_fmt=high&_orig=search&_origin=search&_sort=d&_docanchor=&view=c&_searchStrId=1479158748&_rerunOrigin=scholar.google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=0e143cb4b9989880e9b50648a48ca8d0&searchtype=a.

114. Hilbeck A, McMillan JM, Meier M, Humbel A, Schlaepfer-Miller J, Trtikova M. A controversy re-visited: Is the coccinellid Adalia bipunctata adversely affected by Bt toxins? *Environ Sci Eur*. 2012;24(10). doi:10.1186/2190-4715-24-10

115. Hilbeck A, Meier M, Trtikova M. Underlying reasons of the controversy over adverse effects of Bt toxins on lady beetle and lacewing larvae. *Environ Sci Eur*. 2012;24(9). doi:10.1186/2190-4715-24-9

116. Hilbeck A, Moar WJ, Pusztai-Carey M, Filippini A, Bigler F. Prey-mediated effects of Cry1Ab toxin and protoxin and Cry2A protoxin on the predator Chrysoperla carnea. *Entomol Exp Appl*. 1999;91:305–316. http://onlinelibrary.wiley.com/doi/10.1046/j.1570-7458.1999.00497.x/abstract.

117. Marvier M, McCreedy C, Regetz J, Kareiva P. A meta-analysis of effects of Bt cotton and maize on nontarget invertebrates. *Science*. 2007;316:1475-1477. doi:10.1126/science.1139208

118. Lövei GL, Arpaia S. The impact of transgenic plants on natural enemies: A critical review of laboratory studies. *Entomol Exp Appl*. 2005;114:1–14. doi:10.1111/j.0013-8703.2005.00235.x

119. Ramirez-Romero R, Desneux N, Decourtye A, Chaffiol A, Pham-Delègue MH. Does Cry1Ab protein affect learning performances of the honey bee Apis mellifera L. (Hymenoptera, Apidae)? *Ecotoxicol Environ Saf*. 2008;70:327–333. http://www.ncbi.nlm.nih.gov/pubmed/18206234.

120. Rosi-Marshall EJ, Tank JL, Royer TV, et al. Toxins in transgenic crop byproducts may affect headwater stream ecosystems. *Proc Natl Acad Sci USA*. 2007;104:16204-16208. doi:10.1073/pnas.0707177104

121. Bøhn T, Traavik T, Primicerio R. Demographic responses of Daphnia magna fed transgenic Bt-maize. *Ecotoxicology*. 2010;19:419-430. doi:10.1007/s10646-009-0427-x

122. Castaldini M, Turrini A, Sbrana C, et al. Impact of Bt corn on rhizospheric and soil eubacterial communities and on beneficial mycorrhizal symbiosis in experimental microcosms. *Appl Env Microbiol*. 2005;71:6719-6729. doi:10.1128/AEM.71.11.6719-6729.2005

123. Latham JR, Love M, Hilbeck A. The distinct properties of natural and GM cry insecticidal proteins. *Biotechnol Genet Eng Rev*. 2017;33(1):62-96. doi:10.1080/02648725.2017.1357295

124. Hilbeck A, Otto M. Specificity and combinatorial effects of Bacillus thuringiensis Cry toxins in the context of GMO environmental risk assessment. *Environ Health*. 2015:71. doi:10.3389/fenvs.2015.00071

125. GMO Compass. Environmental safety: insects, spiders, and other animals. http://www.gmo-compass.org/eng/safety/environmental_safety/169.effects_gm_plants_insects_spiders_animals.html. Published December 11, 2006.

126. Mesnage R, Clair E, Gress S, Then C, Székács A, Séralini G-E. Cytotoxicity on human cells of Cry1Ab and Cry1Ac Bt insecticidal toxins alone or with a glyphosate-based herbicide. *J Appl Toxicol*. May 2011. http://www.ncbi.nlm.nih.gov/pubmed/22337346.

127. Séralini GE, Cellier D, Spiroux de Vendomois J. New analysis of a rat feeding study with a genetically modified maize reveals signs of hepatorenal toxicity. *Arch Environ Contam Toxicol*. 2007;52:596–602. http://www.rapaluruguay.org/transgenicos/Maiz/Genetically_Maize.pdf.

128. de Vendomois JS, Roullier F, Cellier D, Séralini GE. A comparison of the effects of three GM corn varieties on mammalian health. *Int J Biol Sci*. 2009;5:706–26. http://www.ncbi.nlm.nih.gov/pubmed/20011136 http://www.biolsci.org/v05p0706.htm.

129. Trabalza-Marinucci M, Brandi G, Rondini C, et al. A three-year longitudinal study on the effects of a diet containing genetically modified Bt176 maize on the health status and performance of sheep. *Livest Sci*. 2008;113:178–190. doi:10.1016/j.livsci.2007.03.009

130. Fares NH, El-Sayed AK. Fine structural changes in the ileum of mice fed on delta-endotoxin-treated potatoes and transgenic potatoes. *Nat Toxins*. 1998;6(6):219-233. http://www.ncbi.nlm.nih.gov/pubmed/10441029.

131. El-Shamei ZS, Gab-Alla AA, Shatta AA, Moussa EA, Rayan AM. Histopathological changes in some organs of male rats fed on genetically modified corn (Ajeeb YG). *J Am Sci*. 2012;8(10):684–696. https://www.academia.edu/3405345/Histopathological_Changes_in_Some_Organs_of_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

132. Gab-Alla AA, El-Shamei ZS, Shatta AA, Moussa EA, Rayan AM. Morphological and biochemical changes in male rats fed on genetically modified corn (Ajeeb YG). *J Am Sci*. 2012;8(9):1117–1123. https://www.academia.edu/3138607/Morphological_and_Biochemical_Changes_in_Male_Rats_Fed_on_Genetically_Modified_Corn_Ajeeb_YG_. Accessed January 14, 2014.

133. Finamore A, Roselli M, Britti S, et al. Intestinal and peripheral immune response to MON810 maize ingestion in weaning and old mice. *J Agric Food Chem*. 2008;56:11533–39. doi:10.1021/jf802059w

134. Vázquez-Padrón RI, Moreno-Fierros L, Neri-Bazan L, de la Riva GA, Lopez-Revilla R. Intragastric and intraperitoneal administration of Cry1Ac protoxin from Bacillus thuringiensis induces systemic and mucosal antibody responses in mice. *Life Sci*. 1999;64:1897-1912. http://www.ncbi.nlm.nih.gov/pubmed/10353588.

135. Vázquez-Padrón RI, Moreno-Fierros L, Neri-Bazan L, Martinez-Gil AF, de-la-Riva GA, Lopez-Revilla R. Characterization of the mucosal and systemic immune response induced by Cry1Ac protein from Bacillus thuringiensis HD 73 in mice. *Braz J Med Biol Res*. 2000;33:147-155. http://www.ncbi.nlm.nih.gov/pubmed/10657055.

136. Vázquez-Padrón RI, Gonzales-Cabrera J, Garcia-Tovar C, et al. Cry1Ac protoxin from Bacillus thuringiensis sp. kurstaki HD73 binds to surface proteins in the mouse small intestine. *Biochem Biophys Res Commun*. 2000;271:54-58. doi:10.1006/bbrc.2000.2584

137. Vázquez-Padron RI, Moreno-Fierros L, Neri-Bazan L, De La Riva GA, Lopez-Revilla R. Bacillus thuringiensis Cry1Ac protoxin is a potent systemic and mucosal adjuvant. *Scand J Immunol*. 1999;49:578-584. http://www.ncbi.nlm.nih.gov/pubmed/10354369.

138. Rubio-Infante N, Moreno-Fierros L. An overview of the safety and biological effects of Bacillus thuringiensis Cry toxins in mammals. *J Appl Toxicol*. 2016;36(5):630-648. doi:10.1002/jat.3252

139. US Environmental Protection Agency (EPA). *Bt Plant-Incorporated Protectants: October 15, 2001 Biopesticides Registration Action Document*. Washington, DC: US Environmental Protection Agency (EPA); 2001. https://www3.epa.gov/pesticides/chem_search/reg_actions/pip/bt_brad.htm.

140. Guimaraes V, Drumare MF, Lereclus D, et al. In vitro digestion of Cry1Ab proteins and analysis of the impact on their immunoreactivity. *J Agric Food Chem*. 2010;58:3222-3231. doi:10.1021/jf903189j

141. Aris A, Leblanc S. Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec, Canada. *Reprod Toxicol*. 2011;31(4):528–533.

142. Aris A. Response to comments from Monsanto scientists on our study showing detection of glyphosate and Cry1Ab in blood of women with and without pregnancy. *Reprod Toxicol*. 2012;33:122-123.

POUŽITÉ ZDROJE PRE 13. KAPITOLU:

1. Fernandez-Cornejo J, McBride WD. *The Adoption of Bioengineered Crops. Agricultural Economic Report No. 810*. Washington, DC: US Department of Agriculture; 2002.

2. Bindraban PS, Franke AC, Ferrar DO, et al. *GM-Related Sustainability: Agro-Ecological Impacts, Risks and Opportunities of Soy Production in Argentina and Brazil*. Wageningen, the Netherlands: Plant Research International; 2009. http://bit.ly/Ink59c.

3. Hollis P. Conservation tillage systems threatened by herbicide-resistant weeds. *Southeast Farm Press*. http://southeastfarmpress.com/management/conservation-tillage-systems-threatened-herbicide-resistant-weeds?page=1. Published March 11, 2015.

4. Baker JM, Ochsner TE, Venterea RT, Griffis TJ. Tillage and soil carbon sequestration – What do we really know? *Agric Ecosyst Environ*. 2007;118:1–5. http://cropwatch.unl.edu/c/document_library/get_file?folderId=168773&name=DLFE-2909.pdf.

5. DEFRA. *Managing GM Crops with Herbicides: Effects on Farmland Wildlife*. Farmscale Evaluations Research Consortium and the Scientific Steering Committee; 2005. http://bit.ly/P8ocOW.

6. Hawes C, Haughton AJ, Osborne JL, et al. Responses of plants and invertebrate trophic groups to contrasting herbicide regimes in the Farm Scale Evaluations of genetically modified herbicide-tolerant crops. *Philos Trans R Soc Lond B Biol Sci*. 2003;358:1899-1913. doi:10.1098/rstb.2003.1406

7. Roy DB, Bohan DA, Haughton AJ, et al. Invertebrates and vegetation of field margins adjacent to crops subject to contrasting herbicide regimes in the Farm Scale Evaluations of genetically modified herbicide-tolerant crops. *Philos Trans R Soc Lond B Biol Sci*. 2003;358:1879-1898. doi:10.1098/rstb.2003.1404

8. Brooks DR, Bohan DA, Champion GT, et al. Invertebrate responses to the management of genetically modified herbicide-tolerant and conventional spring crops. I. Soil-surface-active invertebrates. *Philos Trans R Soc Lond B Biol Sci*. 2003;358:1847-1862. doi:10.1098/rstb.2003.1407

9. Heard MS, Hawes C, Champion GT, et al. Weeds in fields with contrasting conventional and genetically modified herbicide-tolerant crops. II. Effects on individual species. *Philos Trans R Soc Lond B Biol Sci*. 2003;358:1833-1846. doi:10.1098/rstb.2003.1401

10. Firbank LG. Introduction: The farm scale evaluations of spring-sown genetically modified crops. *Phil Trans R Soc Lond*. 2003;358:1777–1778. http://rstb.royalsocietypublishing.org/content/358/1439/1777.full.pdf+html?sid=15d4fe3a-1ab7-4547-9335-39f458c71b7b.

11. Bohan DA, Boffey CW, Brooks DR, et al. Effects on weed and invertebrate abundance and diversity of herbicide management in genetically modified herbicide-tolerant winter-sown oilseed rape. *Proc Biol Sci*. 2005;272:463-474. doi:10.1098/rspb.2004.3049

12. BBC News. Q&A: GM farm-scale trials.http://news.bbc.co.uk/2/hi/science/nature/3194574.stm. Published March 9, 2004.

13. Amos J. GM study shows potential "harm." *BBC News*. http://news.bbc.co.uk/1/hi/sci/tech/4368495.stm. Published March 21, 2005.

14. Friends of the Earth. *Press Briefing: Government to Publish the Final Results of the Farm Scale Evaluations of Genetically Modified Crops: Winter Oilseed Rape*. London, UK; 2004. http://www.foe.co.uk/sites/default/files/downloads/government_to_publish_the.pdf.

15. Iowa State University News Service. Saving the monarch butterfly: Iowa State University biologist explains census discrepancy. Iowa State University News Service. https://www.news.iastate.edu/news/2017/08/02/monarchcensus. Published August 2, 2017. Accessed July 8, 2018.

16. Semmens BX, Semmens DJ, Thogmartin WE, et al. Quasi-extinction risk and population targets for the Eastern, migratory population of monarch butterflies (Danaus plexippus). *Sci Rep*. 2016;6:23265. doi:10.1038/srep23265

17. Pleasants JM, Oberhauser KS. Milkweed loss in agricultural fields because of herbicide use: effect on the monarch butterfly population. *Insect Conserv Divers*. 2013;6:135–144. http://www.mlmp.org/results/findings/Pleasants_and_Oberhauser_2012_milkweed_loss_in_ag_fields.pdf.

18. Ries L, Taron DJ, Rendón-Salinas E. The disconnect between summer and winter monarch trends for the Eastern migratory population: Possible links to differing drivers. *Ann Entomol Soc Am*. 2015;108(5):691-699. doi:10.1093/aesa/sav055

19. Pleasants JM, Zalucki MP, Oberhauser KS, Brower LP, Taylor OR, Thogmartin WE. Interpreting surveys to estimate the size of the monarch butterfly population: Pitfalls and prospects. *PLOS ONE*. 2017;12(7):e0181245. doi:10.1371/journal.pone.0181245

POUŽITÉ ZDROJE PRE 14. KAPITOLU:

1. SCIMAC (Supply Chain Initiative on Modified Agricultural Crops). GM crop co-existence in perspective. http://www.scimac.org.uk/files/GM_crop_%20coexistence_perspective.pdf. Published 2006.

2. D'Hertefeldt T, Jørgensen RB, Pettersson LB. Long-term persistence of GM oilseed rape in the seedbank. *Biol Lett*. 2008;4:314–317.

3. Gilbert N. GM crop escapes into the American wild. *Nature*. August 2010. http://www.nature.com/news/2010/100806/full/news.2010.393.html.

4. Black R. GM plants "established in the wild." *BBC News*. http://www.bbc.co.uk/news/science-environment-10859264. Published August 6, 2010.

5. Greenpeace and GeneWatch UK. GM contamination register. http://www.gmcontaminationregister.org/index.php?content=ho. Published 2014.

6. Greenpeace and GeneWatch UK. *GM Contamination Register Report 2007*. Amsterdam, The Netherlands: Greenpeace International; 2008. http://www.greenpeace.org/international/Global/international/planet-2/report/2008/2/gm-contamination-register-2007.pdf.

7. Bhattacharya S. German farmers to be liable for GM contamination. *New Sci*. November 2004. http://www.newscientist.com/article/dn6729-german-farmers-to-be-liable-for-gm-contamination.html.

8. Hogan M, Niedernhoefer D. German court upholds GMO planting curbs. *Reuters*. http://uk.reuters.com/article/2010/11/24/us-germany-gmo-idUSTRE6AN55420101124. Published November 24, 2010.

9. Friends of the Earth Europe. GM crops irrelevant in Europe. February 2013. http://www.stopthecrop.org/sites/default/files/content/attachments/foee_factsheet_feb_2013_gmcrops_irrelevant_in_europe.pdf.

10. Rylott P. Matter of Fact [television broadcast]. *BBC2 Eastern Region*. October 12, 2000.

11. Levett R. Choice: Less can be more. *Food Ethics*. 2008;3(3):11. http://www.foodethicscouncil.org/system/files/food-ethics-autumn-08%28web%29.pdf.

12. USDA Advisory Committee on Biotechnology and 21st Century Agriculture (AC21). *Enhancing Coexistence: A Report of the AC21 to the Secretary of Agriculture*. Washington, DC; 2012. http://www.usda.gov/documents/ac21_report-enhancing-coexistence.pdf.

13. Food & Water Watch and OFARM. *Organic Farmers Pay the Price for GMO Contamination*. Washington, DC: Food & Water Watch; 2014. http://documents.foodandwaterwatch.org/doc/GMO_contamination.pdf.

14. Blue EN. *Risky Business: Economic and Regulatory Impacts from the Unintended Release of Genetically Engineered Rice Varieties into the Rice Merchandising System of the US*. Greenpeace; 2007. http://www.greenpeace.org/australia/PageFiles/351482/risky-business.pdf.

15. US Department of Agriculture (USDA). USDA deregulates lines of genetically engineered rice. http://www.aphis.usda.gov/newsroom/content/2006/11/rice_deregulate.shtml. Published November 24, 2006.

16. Delta Farm Press. Deregulation of LL601 was aboveboard, says USDA.http://deltafarmpress.com/deregulation-ll601-was-aboveboard-says-usda. Published January 22, 2007.

17. European Food Safety Authority (EFSA). EFSA Press Release: EFSA's GMO Panel provides reply to European Commission request on GM rice LLRICE601. http://www.efsa.europa.eu/en/press/news/gmo060915.htm. Published September 15, 2006. Accessed October 5, 2014.

18. Reuters. Mexico halts US rice over GMO certification.http://www.gmwatch.org/latest-listing/1-news-items/3625. Published March 16, 2007.

19. Greenpeace. Children and infants in China at risk of eating food contaminated by illegal GE rice.http://www.greenpeace.org/eastasia/press/releases/food-agriculture/2011/ge-rice-baby-food/. Published April 20, 2011.

20. Greenpeace and GeneWatch UK. Germany finds unauthorised genetically modified (Bt63) rice noodles. *GM Contamination Register*. http://bit.ly/1nEKmEO. Published June 15, 2011.

21. Greenpeace and GeneWatch UK. Sweden finds unauthorised genetically modified (Bt63) rice. *GM Contamination Register*. http://bit.ly/1kXDCSP. Published June 27, 2011.

22. New Zealand Food Safety Authority (NZFSA). Unauthorised GM rice product found and withdrawn.http://www.foodsafety.govt.nz/elibrary/industry/Unauthorised_Rice-Zealand_Food.htm. Published July 30, 2008.

23. European Commission. Commission requires certification for Chinese rice products to stop unauthorised GMO from entering the EU. http://europa.eu/rapid/press-release_IP-08-219_en.htm. Published February 12, 2008.

24. European Commission. *Final Report of an Audit Carried out in China from 29 March to 8 April 2011 in Order to Evaluate the Control Systems for Genetically Modified Organisms (GMOs) in Respect of Seed, Food and Feed Intended for Export to the EU*. Brussels, Belgium; 2011.

25. Eurofins. New regulations concerning GMO rice from China. *Eurofins Food Testing Newsletter No. 38*. http://www.eurofins.de/food-analysis/information/food-testing-newsletter/food-newsletter-38/gmo-rice-from-china.aspx. Published March 2012.

26. Colombini D. Food manufacturers warned of GMO rice fraud. FoodManufacture.co.uk. http://www.foodmanufacture.co.uk/Food-Safety/Food-manufacturers-warned-of-GMO-rice-fraud. Published April 11, 2012. Accessed October 5, 2014.

27. Franz-Warkentin P. Flax industry sees "good progress" against Triffid. *AGCanada*. http://www.agcanada.com/daily/flax-industry-sees-good-progress-against-triffid-2. Published October 12, 2011. Accessed October 5, 2014.

28. Laidlaw S. StarLink fallout could cost billions: Future of modified crops thrown in doubt, report says. *The Toronto Star*. http://www.mindfully.org/GE/StarLink-Fallout-Cost-Billions.htm. Published January 9, 2001.

29. Centers for Disease Control and Prevention (CDC). *Investigation of Human Health Effects Associated with Potential Exposure to Genetically Modified Corn: A Report to the US Food and Dug Administration*.; 2001. www.cdc.gov/nceh/ehhe/cry9creport/pdfs/cry9creport.pdf.

30. FIFRA Scientific Advisory Panel. *A Set of Scientific Issues Being Considered by the Environmental Protection Agency Regarding Assessment of Additional Scientific Information Concerning StarLink™ Corn. SAP Report No. 2001-09*. Arlington, Virginia: US Environmental Protection Agency (EPA); 2001.

31. Carpenter JE, Gianessi LP. *Agricultural Biotechnology: Updated Benefit Estimates*. National Center for Food and Agricultural Policy; 2001. http://ucbiotech.org/biotech_info/PDFs/Carpenter_2001_Updated_Benefits.pdf.

32. Elsanhoty RM, Al-Turki AI, Ramadan MF. Prevalence of genetically modified rice, maize, and soy in Saudi food products. *Appl Biochem Biotechnol*. August 2013. doi:10.1007/s12010-013-0405-x

33. Bondera M, Query M. *Hawaiian Papaya: GMO Contaminated*. Hawaii SEED; 2006. http://hawaiiseed.org/wp-content/uploads/2012/11/Papaya-Contamination-Report.pdf.

34. Charles D. In Oregon, the GMO wheat mystery deepens. NPR.org. http://www.npr.org/blogs/thesalt/2013/07/17/202684064/in-oregon-the-gmo-wheat-mystery-deepens. Published July 17, 2013. Accessed July 30, 2014.

35. Dupont V. Monsanto testing new GM wheat after 8-year freeze (Update). *Phys.org*. http://phys.org/news/2013-06-monsanto-gmo-wheat.html. Published June 5, 2013. Accessed July 30, 2014.

36. Monsanto. GM wheat questions and answers. http://www.monsanto.com/gmwheat/pages/gm-wheat-questions-and-answers.aspx#six. Published 2014.

37. US Department of Agriculture (USDA). *USDA Announces Close and Findings of Investigation into the Detection of Genetically Engineered Wheat in Oregon in 2013*. Riverdale, MD; 2014. http://www.aphis.usda.gov/newsroom/2014/09/pdf/ge_wheat.pdf.

38. Plume K. USDA confirms unapproved GMO wheat found in Washington state. *Reuters*. https://www.reuters.com/article/us-wheat-washington-gmo/unapproved-gmo-wheat-found-growing-in-washington-state-officials-idUSKCN10920K. Published July 29, 2016. Accessed July 9, 2018.

39. Nickel R. Canada finds unapproved GMO wheat in Alberta. *Reuters*. https://ca.reuters.com/article/businessNews/idCAKBN1JA341-OCABS. Published June 14, 2018. Accessed July 9, 2018.

40. Thomson Reuters. Japan blocks Canadian wheat after unapproved GMO plants found in Alberta | CBC News. *CBC*. https://www.cbc.ca/news/canada/calgary/wheat-gmo-japan-genetically-modified-suspended-import-sale-1.4707563. Published June 15, 2018. Accessed July 9, 2018.

41. The Canadian Press. South Korea suspends wheat and flour sales from Canada over GMO plants found in Alberta. *CBC*. https://www.cbc.ca/news/canada/calgary/south-korea-wheat-flour-canada-farming-gmo-genetically-modified-1.4710750. Published June 18, 2018. Accessed July 9, 2018.

42. US Department of Agriculture Office of Inspector General Southwest Region. *Audit Report: Animal and Plant Health Inspection Service Controls over Issuance of Genetically Engineered Organism Release Permits*. Washington, DC: US Department of Agriculture Office of Inspector General Southwest Region; 2005. http://www.usda.gov/oig/webdocs/50601-08-TE.pdf.

43. Lambrecht B. Gene-altered apple tested in Washington state. *Seattlepi.com*. http://www.seattlepi.com/local/article/Gene-altered-apple-tested-in-Washington-state-5736742.php. Published September 5, 2014.

44. Lambrecht B. GMO experiments receive questionable oversight: Central Coast corn used for varied experiments. *SFGate*. http://m.sfgate.com/science/article/GMO-experiments-receive-questionable-oversight-5740478.php. Published September 7, 2014.

POUŽITÉ ZDROJE PRE 15. KAPITOLU:

1. Latham J. How the Great Food War will be won. *Independent Science News*. http://www.independentsciencenews.org/environment/how-the-great-food-war-will-be-won/. Published January 12, 2015.

2. World Bank Institute. *WBI Global Dialogue on Adaptation and Food Security: Summary of Main Issues*. Washington, DC: World Bank Institute; 2011. http://bit.ly/2pbWqW0.

3. Hall KD, Guo J, Dore M, Chow CC. The progressive increase of food waste in America and its environmental impact. *PLoS ONE*. 2009;4(11):e7940. doi:10.1371/journal.pone.0007940

4. Foley J. It's time to rethink America's corn system. *Sci Am*. March 2013. http://www.scientificamerican.com/article/time-to-rethink-corn/. Accessed April 9, 2015.

5. Carter CA, Miller HI. Corn for food, not fuel. *The New York Times*. http://www.nytimes.com/2012/07/31/opinion/corn-for-food-not-fuel.html. Published July 30, 2012. Accessed May 6, 2015.

6. Pimentel D, Pimentel M. Sustainability of meat-based and plant-based diets and the environment. *Am J Clin Nutr*. 2003;78(3):660S-663S. http://ajcn.nutrition.org/content/78/3/660S. Accessed April 27, 2014.

7. Bhardwaj M. As crops rot, millions go hungry in India. *Reuters*. http://uk.reuters.com/article/2012/07/01/uk-india-wheat-idUKBRE8600KB20120701. Published July 1, 2012.

8. Paul H, Steinbrecher R. *Hungry Corporations: Transnational Biotech Companies Colonise the Food Chain*. London, UK: Zed Books; 2003.

9. Sherman M. Q & A: Hans Herren on Sustainable Agriculture Solutions. *GMO Inside*. http://gmoinside.org/q-hans-herren-sustainable-agriculture-solutions/. Published April 9, 2014.

10. Bittman M. How to feed the world. *New York Times*. http://www.nytimes.com/2013/10/15/opinion/how-to-feed-the-world.html. Published October 14, 2013. Accessed October 18, 2013.

11. Cook LJ. Millions served. *Forbes*. December 2002. http://www.forbes.com/forbes/2002/1223/302.html.

12. Gathura G. GM technology fails local potatoes. *The Daily Nation (Kenya)*. http://bit.ly/KPQPxL. Published January 29, 2004.

13. New Scientist. Monsanto failure. 2004;181(2433). http://bit.ly/MHPG9W.

14. deGrassi A. *Genetically Modified Crops and Sustainable Poverty Alleviation in Sub-Saharan Africa: An Assessment of Current Evidence*. Third World Network – Africa; 2003. http://allafrica.com/sustainable/resources/view/00010161.pdf.

15. Groves M. Plant researchers offer bumper crop of humanity. *LA Times*. http://articles.latimes.com/1997/dec/26/news/mn-2352. Published December 26, 1997.

16. Donald Danforth Plant Science Center. Danforth Center cassava viral resistance review update. June 2006. http://bit.ly/1ry2DUC.

17. Greenbaum K. Can biotech from St. Louis solve hunger in Africa? *St. Louis Post-Dispatch*. http://bit.ly/L2MmG4. Published December 9, 2006.

18. Hand E. St Louis team fights crop killer in Africa. *St Louis Post-Dispatch*. http://www.gmwatch.org/index.php/news/archive/2006/5580. Published December 10, 2006.

19. Mehta D, Stürchler A, Hirsch-Hoffmann M, Gruissem W, Vanderschuren H. CRISPR-Cas9 interference in cassava linked to the evolution of editing-resistant geminiviruses. *bioRxiv*. May 2018:314542. doi:10.1101/314542

20. Robinson C. Is the public to blame for collapse of the GMO venture? – Part 2. GMWatch. https://www.gmwatch.org/en/news/latest-news/18266-is-the-public-to-blame-for-collapse-of-the-gmo-venture-part-2. Published May 8, 2018. Accessed July 9, 2018.

21. International Institute of Tropical Agriculture (IITA). Farmers get better yields from new drought-tolerant cassava. International Institute of Tropical Agriculture (IITA). http://www.iita.org/news-item/farmers-get-better-yields-new-drought-tolerant-cassava/. Published November 3, 2008.

22. Patel R. Making up Makhatini. In: *Stuffed and Starved*. London, UK: Portobello Books; 2007:153–158.

23. Falck-Zepeda J, Gruère G, Sithole-Niang I. Genetically modified crops in Africa: Economic and policy lessons from countries south of the Sahara. In: International Food Policy Research Institute (IFPRI); 2013:27–29. http://www.ifpri.org/sites/default/files/publications/oc75.pdf.

24. Schnurr MA. Inventing Makhathini: Creating a prototype for the dissemination of genetically modified crops into Africa. *Geoforum*. 2012;43(4):784–792.

25. Hofs J-L, Fok M, Vaissayre M. Impact of Bt cotton adoption on pesticide use by smallholders: A 2-year survey in Makhatini Flats (South Africa). *Crop Prot*. 2006;25:984–988. http://www.grain.org/research_files/BtMakhatiniFlats.pdf.

26. Pschorn-Strauss E. *Bt Cotton in South Africa: The Case of the Makhathini Farmers*. Durban, South Africa: Biowatch South Africa; 2005. http://www.grain.org/article/entries/492-bt-cotton-in-south-africa-the-case-of-the-makhathini-farmers.

27. Jack M. GM project faces ruin. *The New Age (South Africa)*. http://www.thenewage.co.za/21688-1008-53-GM_project_faces_ruin. Published June 28, 2011.

28. Fischer K, van den Berg J, Mutengwa C. Is Bt maize effective in improving South African smallholder agriculture? *South Afr J Sci*. 2015;111(1/2):1-2. doi:10.17159/sajs.2015/a0092

29. Lynas M. Bt brinjal in Bangladesh – the true story. *marklynas.org*. http://www.marklynas.org/2014/05/bt-brinjal-in-bangladesh-the-true-story/. Published May 8, 2014.

30. Maswood MH. Bt brinjal farming ruins Gazipur farmers. *New Age (Bangladesh)*. http://newagebd.net/9116/bt-brinjal-farming-ruins-gazipur-farmers/#sthash.3lZLCkrO.dpbs. Published May 7, 2014. Accessed July 27, 2014.

31. Hammadi S. Bangladeshi farmers caught in row over $600,000 GM aubergine trial. *The Guardian*. http://www.theguardian.com/environment/2014/jun/05/gm-crop-bangladesh-bt-brinjal. Published June 5, 2014. Accessed July 27, 2014.

32. New Age. Bt brinjal farmers demand compensation. *New Age*. http://newagebd.net/44155/bt-brinjal-farmers-demand-compensation/#sthash.sbn4tRM7.QtjuGPLK.dpbs. Published September 1, 2014. Accessed May 16, 2015.

33. Lynas M. How I got converted to GMO food. *The New York Times*. http://www.nytimes.com/2015/04/25/opinion/sunday/how-i-got-converted-to-gmo-food.html. Published April 24, 2015. Accessed May 16, 2015.

34. New Age. Bt brinjal turns out to be 'upset case' for farmers. *New Age*. http://newagebd.net/105070/bt-brinjal-turns-out-to-be-upset-case-for-farmers/#sthash.jHKixdlP.dpbs. Published March 21, 2015. Accessed May 16, 2015.

35. Akhter F. Turning Bt brinjal failure into a propaganda of success. *ubinig.org*. http://ubinig.org/index.php/home/showAerticle/76/english. Published May 15, 2015. Accessed May 16, 2015.

36. Gallagher LM. *Bt Brinjal Event EE1: The Scope and Adequacy of the GEAC Toxicological Risk Assessment*. Wellington, New Zealand; 2010. http://www.testbiotech.org/sites/default/files/Report%20Gallagher_2011.pdf.

37. Lappé A. Letter to the editor. *New York Times*. http://www.nytimes.com/2015/05/04/opinion/when-food-is-genetically-modified.html. Published May 4, 2015.

38. Howard P. Visualizing consolidation in the global seed industry: 1996–2008. *Sustainability*. 2009;1:1266-1287.

39. Howard P. Seed industry structure 1996–2013. Philip H. Howard Associate Professor, Michigan State University. https://www.msu.edu/~howardp/seedindustry.html. Published 2014.

40. Patriat P. Speech delivered at the association of seed producers of Mato Grosso, on May 11, 2011 at the soy industry conference SEMEAR 2011 in Sao Paulo, Brazil. *GMWatch*. July 2012. http://www.gmwatch.org/latest-listing/1-news-items/14092.

41. Hart M. Farmer to farmer: The truth about GM crops [film].http://gmcropsfarmertofarmer.com/film.html. Published 2011.

42. Roseboro K. Scientist: GM technology has exacerbated pesticide treadmill in India. *The Organic & Non-GMO Report*. http://www.non-gmoreport.com/articles/february2012/gmtechnologypesticideindia.php. Published February 1, 2010.

43. Aaronson T. The suicide belt. *Columbia City Paper*. http://www.gmfreecymru.org.uk/documents/suicidebelt.html. Published November 10, 2009.

44. *Disappearing Non-GM Cotton – Ways Forward to Maintain Diversity, Increase Availability and Ensure Quality of Non-GM Cotton Seed*. Karnataka, India: Research Institute of Organic Agriculture (FiBL); 2011. http://www.fibl.org/fileadmin/documents/en/news/2011/ProceedingNationalWorkshop_DisappearingNon-GMCotton.pdf.

45. Hilbeck A, Lebrecht T, Vogel R, Heinemann JA, Binimelis R. Farmer's choice of seeds in four EU countries under different levels of GM crop adoption. *Environ Sci Eur*. 2013;25(1):12. doi:10.1186/2190-4715-25-12

46. International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). *Agriculture at a Crossroads: Synthesis Report of the International Assessment of Agricultural Knowledge, Science and Technology for Development: A Synthesis of the Global and Sub-Global IAASTD Reports*. Washington, DC, USA: Island Press; 2009. http://www.unep.org/dewa/agassessment/reports/IAASTD/EN/Agriculture%20at%20a%20Crossroads_Synthesis%20Report%20%28English%29.pdf.

47. Lean G. Exposed: The great GM crops myth. *The Independent*. http://www.independent.co.uk/environment/green-living/exposed-the-great-gm-crops-myth-812179.html. Published April 20, 2008.

48. Altieri MA. Applying agroecology to enhance the productivity of peasant farming systems in Latin America. *Environ Dev Sustain*. 1999;1:197–217.

49. Bunch R. More productivity with fewer external inputs: Central American case studies of agroecological development and their broader implications. *Environ Dev Sustain*. 1999;1:219–233.

50. Pretty J. Can sustainable agriculture feed Africa? New evidence on progress, processes and impacts. *J Environ Dev Sustain*. 1999;1:253–274. doi:10.1023/A:1010039224868

51. Hine R, Pretty J, Twarog S. *Organic Agriculture and Food Security in Africa*. New York and Geneva: UNEP-UNCTAD Capacity-Building Task Force on Trade, Environment and Development; 2008. http://bit.ly/KBCgY0.

52. Barzman M, Das L. Ecologising rice-based systems in Bangladesh. *LEISA Mag*. 2000;16. http://bit.ly/L2N71R.

53. Zhu Y, Chen H, Fan J, et al. Genetic diversity and disease control in rice. *Nature*. 17;406:718–722. http://www.nature.com/nature/journal/v406/n6797/full/406718a0.html.

54. SRI International Network and Resources Center (SRI-Rice)/Cornell University College of Agriculture and Life Sciences. Home page. http://sri.ciifad.cornell.edu/. Published 2014.

55. Grindlay D. SA agriculture minister says soil program proves utilising "God's gifts" can boost yields better than GM technology. *ABC Rural*. http://www.abc.net.au/news/2015-03-17/genetic-modification-grain-canola-agriculture-minister-bignell/6325276. Published March 17, 2015. Accessed April 12, 2015.

56. Leahy S. Africa: Save climate and double food production with eco-farming. *IPS News*. http://allafrica.com/stories/201103090055.html. Published March 8, 2011.

57. United Nations Human Rights Council. Eco-farming can double food production in 10 years, says new UN report [press release].http://bit.ly/Lkfa9U. Published March 8, 2011.

58. United Nations Development Programme (UNDP). *Human Development Report 1999*. New York and Oxford; 1999. http://hdr.undp.org/sites/default/files/reports/260/hdr_1999_en_nostats.pdf.

59. Khor M. In: *Intellectual Property, Biodiversity, and Sustainable Development*. London, UK and Penang, Malaysia: Zed Books and Third World Network; 2002:9; 89.

60. Tippe R, Then C. Patents on melon, broccoli and ham? *ELNI Rev*. 2011;2:53–57.

61. ETC Group. *Who Owns Nature? Corporate Power and the Final Frontier in the Commodification of Life*. Ottawa, Canada; 2008. http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/707/01/etc_won_report_final_color.pdf.

62. Jones JD. The cost of spurning GM crops is too high. *The Guardian (UK)*. http://bit.ly/MpSlil. Published July 21, 2011.

63. Food & Water Watch. *Public Research, Private Gain: Corporate Influence over University Agricultural Research*. Washington, DC: Food & Water Watch; 2012. http://www.foodandwaterwatch.org/news/public-research-private-gain-corporate-influence-over-university-agricultural-research.

64. James C. *Global Status of Commercialized Biotech/GM Crops: 2012*. Ithaca, NY: ISAAA; 2012. http://www.isaaa.org/resources/publications/briefs/44/download/isaaa-brief-44-2012.pdf.

65. Voosen P. USDA looks to approve Monsanto's drought-tolerant corn. *New York Times*. http://nyti.ms/mQtCnq. Published May 11, 2011.

66. Ranii D. Drought-tough corn seed races to the finish line. *newsobserver.com*. http://bit.ly/KqA1xl. Published December 21, 2010.

67. Edmeades GO. *Progress in Achieving and Delivering Drought Tolerance in Maize – An Update*. Ithaca, NY: International Service for the Acquisition of Agri-biotech Applications (ISAAA); 2013. https://isaaa.org/resources/publications/briefs/44/specialfeature/Progress%20in%20Achieving%20and%20Delivering%20Drought%20Tolerance%20in%20Maize.pdf.

68. Gonsalves D. Transgenic papaya in Hawaii and beyond. *AgBioForum*. 2004;7(1 & 2):36–40. http://www.agbioforum.org/v7n12/v7n12a07-gonsalves.htm.

69. Ferreira SA, Pitz KY, Manshardt R, Zee F, Fitch M, Gonsalves D. Virus coat protein transgenic papaya provides practical control of papaya ringspot virus in Hawaii. *Plant Dis*. 2002;86(2):101-105. doi:10.1094/PDIS.2002.86.2.101

70. Fitch MMM, Manshardt RM, Gonsalves D, Slightom JL, Sanford JC. Virus resistant papaya plants derived from tissues bombarded with the coat protein gene of papaya ringspot virus. *Nat Biotechnol*. 1992;10(11):1466-1472. doi:10.1038/nbt1192-1466

71. Summers J. GM halo effect: Can GM crops protect conventional and organic farming? *Genetic Literacy Project*. http://www.geneticliteracyproject.org/2014/01/09/gm-papaya-halo-effect/#.U2Kp3ccowsk. Published January 9, 2014.

72. Chan K. War of the papayas. *ChinaDaily.com*. http://bit.ly/LQT67d. Published September 8, 2011.

73. Hao S. Papaya production taking a tumble. *The Honolulu Advertiser*. http://bit.ly/LzDZRb. Published March 19, 2006.

74. Siar SV, Beligan GA, Sajise AJC, Villegas VN, Drew RA. Papaya ringspot virus resistance in Carica papaya via introgression from Vasconcellea quercifolia. *Euphytica*. 2011;181(2):159–168. http://link.springer.com/article/10.1007%2Fs10681-011-0388-z.

75. ABC Rural News Online. *Monsanto and the WA Government Team up on Grain Breeding: Skye Shannon Speaks with Brian Whan, Intergrain and Peter O'Keefe, Monsanto [Audio]*.; 2010.

76. PR Newswire. Cargill to process Monsanto's VISTIVE(TM) low linolenic soybeans.http://prn.to/KyIREy. Published October 4, 2005.

77. Iowa State University. Six new soybean varieties highlight progress in developing healthier oils at ISU.http://www.plantbreeding.iastate.edu/pdf/soybeanReleases11-08.pdf. Published 2008.

78. Melchett P. Who can we trust on GM food? *The Guardian (UK)*. http://www.guardian.co.uk/commentisfree/2008/dec/09/david-king-gm-crops. Published December 9, 2008.

79. Pendrous R. Europe's GM barrier is "starving the poor." *FoodManufacture.co.uk*. http://bit.ly/MpPw6m. Published June 13, 2011.

80. Xu K, Xu X, Fukao T, et al. Sub1A is an ethylene-response-factor-like gene that confers submergence tolerance to rice. *Nature*. 2006;442:705-708. doi:10.1038/nature04920

81. Gunther M. Biotech and organic food: A love story. *marcgunther.com*. http://www.marcgunther.com/biotech-and-organic-food-a-love-story/. Published April 15, 2010.

82. Lebwohl B. Pamela Ronald has developed a more flood-tolerant rice. *EarthSky*. July 2010. http://earthsky.org/food/pamela-ronald-has-developed-a-more-flood-tolerant-rice.

83. Hsu J. Genetically engineered rice plants grow "snorkels" to survive floods. *Pop Sci*. August 2009. http://www.popsci.com/scitech/article/2009-08/snorkel-genes-allow-rice-plants-survive-floods.

84. Hattori Y, Nagai K, Furukawa S, et al. The ethylene response factors SNORKEL1 and SNORKEL2 allow rice to adapt to deep water. *Nature*. 2009;460:1026–1030. http://www.nature.com/nature/journal/v460/n7258/abs/nature08258.html.

85. GM Freeze. Rothamsted's GM wheat – "A step backwards for farming" [press release].http://www.gmfreeze.org/news-releases/187/. Published March 29, 2012.

86. Rothamsted Research. Rothamsted GM wheat trial. http://www.rothamsted.ac.uk/our-science/rothamsted-gm-wheat-trial. Published 2014.

87. Powell W, A'Hara SA, Harling R, et al. *Managing Biodiversity in Field Margins to Enhance Integrated Pest Control in Arable Crops ('3-D Farming' Project): Project Report No. 356 Part 1*. Home-Grown Cereals Authority (HGCA); 2004. http://archive.hgca.com/document.aspx?fn=load&media_id=1496&publicationId=1820.

88. Hickman JM, Written SD. Use of Phelia tanacetifolia strips to enhance biological control of aphids by overfly larvae in cereal fields. *J Econ Entomol*. 1996;89(4):832-840. http://www.ingentaconnect.com/content/esa/jee/1996/00000089/00000004/art00008.

89. Bruce TJA, Aradottir GI, Smart LE, et al. The first crop plant genetically engineered to release an insect pheromone for defence. *Sci Rep*. 2015;5. doi:10.1038/srep11183

90. BBC Today Programme. David King interviewed by Sarah Montague. November 2007.

91. Rothamsted Research Chemical Ecology Group. Push-pull habitat manipulation for control of maize stemborers and the witchweed Striga. http://bit.ly/1pST9I5. Published Undated .

92. Adam D. Eco Soundings: It's in the Mail. *The Guardian (UK)*. http://www.guardian.co.uk/environment/2008/jul/30/1. Published July 30, 2008.

93. Gillam C. DuPont says new corn seed yields better in droughts. *Reuters*. http://reut.rs/Li0c5B. Published January 5, 2011.

94. Cocks T. Drought tolerant maize to hugely benefit Africa: Study. *Reuters Africa*. http://bit.ly/bPXW0p. Published August 26, 2010.

95. La Rovere R, Kostandini G, Tahirou A, et al. *Potential Impact of Investments in Drought Tolerant Maize in Africa*. Addis Ababa, Ethiopia: CIMMYT; 2010. http://bit.ly/1mLExYQ.

96. Atser G. Ghanaian farmers get quality protein, drought-tolerant, and Striga-resistant maize varieties to boost production. *Modern Ghana*. http://bit.ly/LZolNL. Published April 2, 2010.

97. Khisa I. Drought tolerant maize varieties ready. *The East African*. http://www.www.theeastafrican.co.ke/news/Drought-tolerant-maize-varieties-ready/-/2558/2134334/-/yk6a9p/-/index.html. Published January 4, 2014.

98. Atser G. Nigeria releases two extra-early maturing white maize hybrids. *modernghana.com*. http://www.modernghana.com/news/482841/1/nigeria-releases-two-extra-early-maturing-white-ma.html. Published August 17, 2013.

99. Diarra ST. Resistant seed helps Mali farmers battling climate change. *AlertNet*. http://bit.ly/Li0AkE. Published January 11, 2011.

100. Yao S. ARS releases heat-tolerant beans. *USDA Agricultural Research Service*. http://www.ars.usda.gov/is/pr/2010/100630.htm. Published June 30, 2010.

101. USDA Agricultural Research Service. Help for the common bean: Genetic solutions for legume problems. *Agric Res USDA*. 2010;May-June. http://www.ars.usda.gov/is/ar/archive/may10/bean0510.htm.

102. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). ICRISAT develops climate change ready varieties of pearl millet, sorghum, chickpea, pigeonpea and groundnut. *SeedQuest*. http://bit.ly/KqvVoV. Published June 5, 2009.

103. Berthelsen J. A new rice revolution on the way? *AsiaSentinel*. http://bit.ly/Lzthdi. Published January 17, 2011.

104. Food and Agriculture Organization (FAO). Uganda: After decades of war, a new rice variety helps farmers resume their lives.http://www.fao.org/news/story/en/item/35606/icode/. Published October 2, 2009. Accessed April 25, 2014.

105. International Rice Research Institute (IRRI). Indian farmers adopt flood-tolerant rice at unprecedented rates. *ScienceDaily*. http://www.sciencedaily.com/releases/2010/09/100915151015.htm. Published September 15, 2010.

106. IRIN News. Philippines: Could flood-resistant rice be the way forward?http://www.irinnews.org/Report.aspx?ReportId=82760. Published February 5, 2009.

107. Commodity Online. GM and India's rice fields.http://www.rediff.com/money/2007/mar/02comod4.htm. Published March 2, 2007.

108. Giri A. Nepali farm develops disease, heat resistant tomato. *OneIndiaNews*. http://news.oneindia.in/2010/12/05/nepalifarm-develops-disease-resistant-tomatoes.html. Published December 5, 2010.

109. Sawahel W. Wheat variety thrives on saltier soils. *SciDevNet*. April 2010. http://www.scidev.net/en/news/wheat-variety-thrives-on-saltier-soils.html.

110. Dean T. Salt tolerant wheat could boost yields by 25%. *LifeScientist*. http://lifescientist.com.au/content/biotechnology/news/salt-tolerant-wheat-could-boost-yields-by-25--583063808. Published March 12, 2012.

111. Ogodo O. Beans climb to new heights in Rwanda. *SciDevNet*. February 2010. http://www.scidev.net/en/news/beans-climb-to-new-heights-in-rwanda.html.

112. AFP. "Rooting" out hunger in Africa – and making Darwin proud. *Indep UK*. September 2010. http://www.independent.co.uk/life-style/health-and-families/rooting-out-hunger-in-africa--and-making-darwin-proud-2076547.html.

113. Queensland Country Life. New maize hybrids to target niche Asian markets.http://bit.ly/LZr89P. Published April 5, 2011.

114. CIMMYT. Body blow to grain borer. *CIMMYT E-News*. 2007;14 May 2012. http://www.cimmyt.org/en/news-and-updates/item/body-blow-to-grain-borer.

115. Swoboda R. Cho[o]se high-yielding, SCN-resistant soybeans. *Wallace's Farmer (Iowa, USA)*. http://bit.ly/1fCi7H2. Published November 7, 2007.

116. Diers B. Discovering soybean plants resistant to aphids and a new aphid. *University of Illinois Extension*. http://web.extension.illinois.edu/state/newsdetail.cfm?NewsID=15202. Published February 20, 2010.

117. Li Y, Hill CB, Carlson SR, Diers BW, Hartman GL. Soybean aphid resistance genes in the soybean cultivars Dowling and Jackson map to linkage group M. *Mol Breed*. 2007;19(1):25-34. doi:10.1007/s11032-006-9039-9

118. Kim K-S, Hill CB, Hartman GL, Mian MAR, Diers BW. Discovery of soybean aphid biotypes. *Crop Sci*. 2008;48(3):923. doi:10.2135/cropsci2007.08.0447

119. Hill CB, Kim K-S, Crull L, Diers BW, Hartman GL. Inheritance of resistance to the soybean aphid in soybean PI 200538. *Crop Sci*. 2009;49(4):1193. doi:10.2135/cropsci2008.09.0561

120. Allen J. Single gene powers hybrid tomato plants. *PlanetArk*. http://www.planetark.com/enviro-news/item/57360. Published March 30, 2010.

121. Suszkiw J. Experimental chickpeas fend off caterpillar pest. *USDA Agricultural Research Service News & Events*. http://www.ars.usda.gov/is/pr/2009/090825.htm. Published August 25, 2009.

122. Clemson University. New not-so-sweet potato resists pests and disease. *Bioscience Technology*. http://bit.ly/LGHVlo. Published June 22, 2011.

123. Kloosterman K. Pest-resistant super wheat "Al Israeliano." *greenprophet.com*. http://www.greenprophet.com/2010/08/israel-super-wheat/. Published August 17, 2010.

124. Suszkiw J. Scientists use old, new tools to develop pest-resistant potato. *USDA Agricultural Research Service*. http://www.ars.usda.gov/is/ar/archive/apr09/potato0409.htm. Published March 31, 2009.

125. Clarke A. Conventional potato varieties resist PCN and blight. Farmers Weekly. http://www.fwi.co.uk/articles/09/04/2014/144089/conventional-potato-varieties-resist-pcn-and-blight.htm. Published April 9, 2014.

126. Potato Council (UK). Toluca. The British Potato Variety Database. http://varieties.potato.org.uk/display_description.php?variety_name=Toluca. Published 2014.

127. Wragg S. Elm Farm 2010: Blight-resistant spuds could lower carbon levels. *Farmers Weekly Interactive*. http://bit.ly/LsRjb2. Published January 11, 2010.

128. Suszkiw J. ARS scientists seek blight-resistant spuds. *USDA Agricultural Research Service*. http://www.ars.usda.gov/is/pr/2010/100603.htm. Published June 3, 2010.

129. Shackford S. Cornell releases two new potato varieties, ideal for chips. *Chronicle Online*. http://www.news.cornell.edu/stories/Feb11/NewPotatoes.html. Published February 21, 2011.

130. Fowler A. Sárpo potatoes. *The Guardian*. http://www.theguardian.com/lifeandstyle/2012/jan/13/alys-fowler-sarpo-potatoes. Published January 13, 2012.

131. White S, Shaw D. The usefulness of late-blight resistant Sarpo cultivars – A case study. *ISHS Acta Hortic*. 2009;834. http://www.actahort.org/members/showpdf?booknrarnr=834_17.

132. Suszkiw J. New soybeans bred for oil that's more heart-healthy. *USDA Agricultural Research Service News & Events*. http://www.ars.usda.gov/is/pr/2010/100916.htm. Published September 16, 2010.

133. Li S, Nugroho A, Rocheford T, White WS. Vitamin A equivalence of the β-carotene in β-carotene–biofortified maize porridge consumed by women? *Am J Clin Nutr*. 2010;92(5):1105-1112. doi:10.3945/ajcn.2010.29802

134. HarvestPlus. Scientists find that "orange" maize is a good source of vitamin A. *HarvestPlus.org*. http://bit.ly/L2PxNV. Published September 7, 2010.

135. Anderson T. Biofortified crops ready for developing world debut. *SciDev.Net*. http://bit.ly/MAkMg7. Published November 17, 2010.

136. BBC News. "Healthy" purple potato goes on sale in UK supermarkets.http://www.bbc.co.uk/news/uk-scotland-11477327. Published October 6, 2010.

137. Watson J. Purple spud will put you in the pink. *Scotland on Sunday*. http://scotlandonsunday.scotsman.com/uk/Purple-spud-will-put-you.4841710.jp. Published January 3, 2009.

138. Knowles M. Italian producers unveil "supertomato." *Fruitnet.com*. http://bit.ly/1oLKL7t. Published July 5, 2010.

139. CBS News. Purple tomatoes may fight cancer, other diseases.http://archive.digtriad.com/news/health/article/202115/8/Purple-Tomatoes-May-Fight-Cancer-Other-Diseases. Published December 3, 2011.

140. John Innes Centre. Purple tomatoes may keep cancer at bay.http://bit.ly/NAwtZ6. Published October 26, 2008.

141. Martin C. How my purple tomato could save your life. *Mail Online*. http://bit.ly/10JsmlO. Published November 8, 2008.

142. Derbyshire D. Purple "super tomato" that can fight against cancer. *Daily Mail*. http://www.athena-flora.eu/florapress/4-Purple_Tomatoes_International_press_clip/UK/daily%20mail_UK.pdf. Published October 27, 2008.

143. Asian News International. Low-allergy peanuts on the anvil. *OneIndiaNews*. http://bit.ly/Li7xlV. Published June 8, 2010.

144. North Carolina A&T State University School of Agricultural and Environmental Sciences. N.C. A&T food scientist develops process for allergen-free peanuts. *EurekAlert*. http://bit.ly/LQVQBE. Published July 23, 2007.

145. GMWatch. Non-GM successes. http://www.gmwatch.org/index.php/articles/non-gm-successes. Published 2017.

146. Pollack A. That fresh look, genetically buffed. *New York Times*. http://www.nytimes.com/2012/07/13/business/growers-fret-over-a-new-apple-that-wont-turn-brown.html?_r=2&smid=tw-nytimesdining&seid=auto&. Published July 12, 2012.

147. Charles D. This GMO apple won't brown. Will that sour the fruit's image? NPR.org. http://www.npr.org/blogs/thesalt/2014/01/08/260782518/this-gmo-apple-wont-brown-will-that-sour-the-fruits-image. Published January 8, 2014.

148. The editors of The Organic & Non-GMO Report. Washington State University develops non-GMO, non-browning apple alternative. *The Organic & Non-GMO Report*. http://www.non-gmoreport.com/articles/february2014/wsu-develops-non-gmo-non-browning-apple-alternative.php. Published January 31, 2014.

149. Matthews J. Golden rice: Is it vaporware? GMWatch. http://gmwatch.org/index.php/news/archive/2015-articles/16043. Published March 30, 2015. Accessed April 13, 2015.

150. Ye X, Al-Babili S, Klöti A, et al. Engineering the provitamin A (beta-carotene) biosynthetic pathway into (carotenoid-free) rice endosperm. *Science*. 2000;287(5451):303-305.

151. Paine JA, Shipton CA, Chaggar S, et al. Improving the nutritional value of Golden Rice through increased pro-vitamin A content. *Nat Biotechnol*. 2005;23:482-487. doi:10.1038/nbt1082

152. Wilson A, Latham J. GMO golden rice offers no nutritional benefits says FDA. *Indep Sci News*. June 2018. https://www.independentsciencenews.org/news/gmo-golden-rice-offers-no-nutritional-benefits-says-fda/.

153. International Rice Research Institute (IRRI). What is the status of the Golden Rice project coordinated by IRRI? IRRI. https://www.gmwatch.org/en/news/latest-news/16503-is-irri-trying-to-hide-gm-golden-rice-failure-2. Published May 16, 2014.

154. Bollinedi H, S GK, Prabhu KV, et al. Molecular and Functional Characterization of GR2-R1 Event Based Backcross Derived Lines of Golden Rice in the Genetic Background of a Mega Rice Variety Swarna. *PLOS ONE*. 2017;12(1):e0169600. doi:10.1371/journal.pone.0169600

155. Wilson A. Goodbye to golden rice? GM trait leads to drastic yield loss and "metabolic meltdown." *Indep Sci News*. October 2017. https://www.independentsciencenews.org/health/goodbye-golden-rice-gm-trait-leads-to-drastic-yield-loss/.

156. GMWatch. GMO golden rice shows stunted and abnormal growth with reduced grain yield. *GMWatch*. February 2017. https://gmwatch.org/en/news/archive/17470-gmo-golden-rice-shows-stunted-and-abnormal-growth-with-reduced-grain-yield. Accessed July 9, 2018.

157. Stone GD, Glover D. Disembedding grain: Golden Rice, the Green Revolution, and heirloom seeds in the Philippines. *Agric Hum Values*. April 2016:1-16. doi:10.1007/s10460-016-9696-1

158. Food and Nutrition Research Institute/Dept of Science and Technology (Philippines). *7th National Nutrition Survey: 2008: Biochemical Survey Component*. Manila, Philippines; 2010. http://www.fnri.dost.gov.ph/images/stories/7thNNS/biochemical/biochemical_vad.pdf.

159. Hansen M. Golden rice myths. *GMWatch*. http://gmwatch.org/index.php/news/archive/2013/15023. Published August 28, 2013.

160. Matthews J. Transgenic Wars. *GMWatch*. http://www.gmwatch.org/index.php/news/archive/2015. Published April 7, 2015.

161. Biothai (Thailand), CEDAC (Cambodia), DRCSC (India), GRAIN, MASIPAG (Philippines), PAN-Indonesia and UBINIG (Bangladesh). *Grains of Delusion: Golden Rice Seen from the Ground*. Barcelona, Spain: GRAIN; 2001. http://www.grain.org/article/entries/10-grains-of-delusion-golden-rice-seen-from-the-ground.

162. FSANZ. A1138 – Food derived from Provitamin A Rice Line GR2E. foodstandards.gov.au. http://www.foodstandards.gov.au/code/applications/Pages/A1138GMriceGR2E.aspx. Published 2018. Accessed July 9, 2018.

163. Government of Canada. Provitamin A Biofortified Rice Event GR2E (Golden Rice). canada.ca. https://www.canada.ca/en/health-canada/services/food-nutrition/genetically-modified-foods-other-novel-foods/approved-products/golden-rice-gr2e.html. Published March 16, 2018. Accessed July 9, 2018.

164. US FDA. Biotechnology Consultations on Food from GE Plant Varieties: BNF No. 158: Rice. US FDA. https://www.accessdata.fda.gov/scripts/fdcc/?set=Biocon&id=IR-00GR2E-5. Published May 24, 2018. Accessed July 9, 2018.

165. GMWatch. Is GM quicker than conventional breeding?http://www.gmwatch.org/index.php/news/archive/2013-2/15227. Published December 23, 2013.

166. Phillips McDougall. *The Cost and Time Involved in the Discovery, Development and Authorisation of a New Plant Biotechnology Derived Trait: A Consultancy Study for Crop Life International*. Pathhead, Midlothian; 2011.

167. Goodman MM. New sources of germplasm: Lines, transgenes, and breeders. In: Martinez JM, ed. *Memoria Congresso Nacional de Fitogenetica*. Universidad Autónoma Agraria Antonio Narro, Saltillo, Coah, Mexico; 2002:28–41.

168. Goodman MM, Carson ML. Reality vs. myth: Corn breeding, exotics, and genetic engineering. In: *Proc. of the 55th Annual Corn & Sorghum Research Conference*. Vol 55. Chicago, IL; 2000:149–72.

169. Lloyd T. Monsanto's new gambit: Fruits and veggies. *Harvest Public Media*. http://bit.ly/LQTNxp. Published April 8, 2011.