

Scoping search

Before starting the systematic review (SR) there was a need to test the search strategy, give the reviewers a better scope of the review to be performed as well as the time it will require, and allow a trial of the software to be used in the review. This was addressed in the form of a pilot, performed in two stages: in the first, three databases (MEDLINE, LILACS, and DoPHER) were searched with different combinations of key-words, each by two independent researchers. In the second, the Bibliosafety database was searched with a combination of key words and inclusion/exclusion criteria updated after the search experience with the previous three databases. Two independent researchers also searched the Bibliosafety database. The inclusion/exclusion criteria were English, Spanish, and Portuguese for Languages with no time restrictions for Phase 1, and English, articles published after 1994 for Phase 2. The choice for these languages was determined by the wide adoption of GM crops in countries where these languages are spoken (Northern and Latin America regions, Australia, Spain, South Africa among other) and also due to the fact that at the pilot phase the team had a native Spanish speaker proficient in Portuguese. This was done to assess the importance of English published articles.

The databases were chosen to represent global (MEDLINE), regional (LILACS, for Latin America and the Caribbean), and subject-specific databases (DoPHER, for health effectiveness reviews; and Bibliosafety, specialising on the biosafety of

GMOs). There was no critical assessment of the articles retrieved, in line with the purpose stated above.

Phase 1

Databases:

MEDLINE: www.nlm.nih.gov/pubs/factsheets/medline.html

Latin America and the Caribbean: LILACS:

bases.bireme.br/cgi-bin/wxislind.exe/iah/online/IsisScript=iah/iah.xis&base=LILACS
&lang=i

Database of Promoting Health Effectiveness Reviews (DoPHER) (free on the internet): epi.ioe.ac.uk/webdatabases/Intro.aspx?ID=2

Search terms:

LILACS database had English abstracts for all its Spanish and Portuguese language articles, so there was no need for a combination of search terms in Spanish and Portuguese. All the other databases had English language articles. The combination of key words employed in performing searches was:

((genetic* modif* OR engineer* OR crop*) OR GM OR transgen* OR
herbicide\$tolerant OR insect\$resistant OR biotech* OR BT OR stacked\$trait) AND
(health OR pesticide* OR income OR welfare)

Simpler combinations for these key words were also employed, such as:

-((genetic* modif* OR engineer* OR crop*) OR GM OR transgen* OR
herbicide\$tolerant OR insect\$resistant OR biotech* OR BT OR stacked\$trait)

-herbicide\$tolerant AND health

-crop* AND welfare, together with other simpler combinations of key words.

Performing the search:

The primary hits were analysed first by titles and abstracts for relevance and those found to be relevant were compiled into a Tier 1 list. They were further analysed by full text, eliminating articles found not to be relevant to the secondary research questions, refer to ex-ante studies, duplicates (articles referring to the same study) and later eliminating reviews as well. Those publications for which full text versions could not be retrieved were listed in a separate table under "Possibly relevant hits." The hits relevant to the research questions for which full texts were retrieved, excluding reviews, formed the Tier 2 list. The articles comprising this list were then subjected to "data extraction," a process entailing the retrieval of data following the model presented in Table 1.

Inclusion/exclusion criteria for the first tier:

Language: English, Spanish, Portuguese

Publication status: Anytime

Types of publication: Articles and reports of articles (reviews will also be scoped for finding articles employing primary data)

Intervention: Should be relevant to the study question: intermediary outcomes → pesticide usage derived from the cultivation of any GM crop, and the household income again related to the cultivation of any GM crop; and final outcomes → pesticide-associated illness, and health-related household expenditure. Partial results were included as well for this pilot to see if the search terms for the final outcomes

were useful in retrieving hits or not. For example, if an article had only intermediary outcomes (relating to the first, second question or both) it was included and could even enter data extraction.

Software:

We assessed the multi-user access Qiqqa software for managing the bibliographical data.

Team:

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Phase 2

Databases:

Bibliosafety database: <http://bibliosafety.icgeb.org/search?SearchableText=>

Search terms:

((genetic*modif*) OR (genetic*engineer*) OR GE OR transgene* OR
herbicide\$tolerant OR insect\$resistant OR biotech* OR BT OR GM OR
stacked\$trait*) AND (crop* OR plant* OR flower*) AND (health OR poisoning OR
effects OR welfare OR environment) AND (pesticides OR insecticides OR herbicides
OR fungicides OR bactericides OR income OR revenue OR gains OR wage OR profit
OR earnings OR livelihood) AND (farmer* OR agric* OR worker)

Performing the search: remained the same as in Phase 1 with the difference that the search was performed with the entire search string.

Inclusion/exclusion criteria for the first tier:

Language: English

Publication status: after 1994

Types of publication: Articles and reports of articles (excluding reviews)

Intervention: same as in Phase 1

Software: remained the same as in Phase 1

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Results

In both Phase 1 and 2, various combinations of key words retrieved different number of hits, depending on the database, the number of key words employed and the combinations between them. For example, a search on MEDLINE with the combination ((genetic* modif* OR engineer* OR crop*) OR GM OR transgen* OR herbicide\$tolerant OR insect\$resistant OR biotech* OR BT OR stacked\$trait) AND (health OR pesticide* OR income OR welfare) with further limitations of English as Language, and Human as Subjects retrieved 34,551 hits (with the mention that the

term "stacked\$trait" was not found). The first 500 were checked among which 1 was deemed to be possibly relevant judging by the title and abstract. In the same database (genetically modified crops) AND pesticides) AND health: retrieved 36 hits of which 2 might be of relevance. Four other searches with different combinations retrieved 7 hits of which 1 might be of relevance, 32 hits of which 2 might be of relevance, 13 hits of which 4 might be of relevance, and 9 hits of which none was deemed relevant.

A total of 69 possibly relevant publications (Figure 1) were retrieved through the search process in the 4 databases after the title and abstract screening. Amongst the 17 publications that entered the data extraction process (formed Tier 2 list), one was in Spanish and the rest in English. Further, 11 had only "intermediate outcomes", leaving only 6 publications addressing "final outcomes". Eliminated from entering data extraction were 11 possibly relevant articles (full text could not be retrieved) (Table 3), and 41 articles from Tier 1 which were rejected in Tier 2 [amongst which 15 were reviews and the rest were not relevant to the research questions] (Table 2).

The countries appearing most often in publications were China and USA (Figure 2). The GM crop most researched was cotton (Figure 3). There were 14 research articles published in peer-reviewed journals and 3 technical reports from various organisations. Methodologically, most articles have used randomised sample surveys and have compared GM and non-GM crop cultivators, which is consistent with the high methodological requirements of the SR. The exceptions were two articles that surveyed only GM crop cultivators, a publication studying the health risks of pesticides on populations living inside and outside the application area identified by exposure indicators, and one case study. There were 7 publications that did not

designate a funding agency, but amongst those remaining the donors vary:

Rockefeller Foundation, National Natural Science Foundation of China, Chinese Academy of Science, China Natural Science Foundation, Monsanto, Catholic Academic Exchange Service, Union of Concerned Scientists, United States Development Agency, German Research Foundation, Higher Education Commission of Pakistan, German Agricultural Society, Swedish Institute for Food and Biotechnology, Genome Canada, and Network of Centres of Excellence for Advanced Foods and Materials.

Amongst the 6 publications with "final outcomes", the dominant country is China (4 papers), followed by USA (1 paper) and India (1 paper). With the exception of one study focusing on transgenic rice, and one with a focus on both cotton and soya bean, all articles analysed GM cotton cultivation. None of the publications studied if farmers whose incomes were affected by the cultivation of GM crops decided to modify their expenditures on health accordingly. All publications instead present correlations between the cultivation of GM crops and a decrease in the number of pesticide-related poisonings or health issues.

Amongst the 11 articles presenting only "intermediate outcomes", there were 8 addressing pesticide usage and 6 addressing economic gains for GM crop producers (a small number researched both). Within the pesticide usage research, cotton was again the dominant crop with 7 articles addressing it, followed by soya bean (in 3 articles) and maize (2 articles). The locations of the articles were more varied: USA (3), India (2), Colombia (1), Brazil (1), and China (1).

Amongst the articles analysing the economic gains for GM crops producers, 4 focus on GM cotton, 2 on GM maize, 1 on GM soya bean and 1 on GM oilseed. The study locations were USA (2), Burkina Faso (1), Canada (1), China (1), and South Africa (1).

Conclusions

1. The key word combination was modified to:

((genetic*modif*) OR (genetic*engineer*) OR GE OR transgene* OR herbicide\$tolerant OR insect\$resistant OR biotech* OR BT OR GM OR stacked\$trait*) AND (crop* OR plant* OR flower*) AND (health OR poisoning OR effects OR welfare OR environment) AND (pesticides OR insecticides OR herbicides OR fungicides OR bactericides OR income OR revenue OR gains OR wage OR profit OR earnings OR livelihood) AND (farmer* OR agric* OR worker).

The modification was in order to have a search field referring specifically to GM plants, and to include GM flowers as well. In addition, this search string was established as a balance between searches with fewer and higher number of key words: to be able to retrieve hits in sufficient yet not unmanageable numbers.

2. There have been reports linking the cultivation of GM crops with an increase in the number of farmer suicides, especially in India. Most of the suicides involved drinking pesticides. The reviewing team had discussions on whether or not to include such reports in the SR. We decided against it.

3. The pilot identified a need to establish a representative percentage/number of articles to be checked amongst a large number of hits retrieved in a database search, in particular web-based. After consulting a statistician, the problem was solved by identifying a site with an automatic calculation of a statistically-representative sample

from a given population: <http://www.surveysystem.com/sscalc.htm>

4. The team reached a decision for not having a snowball research: if a study is relevant, it shall be included, but we will not consider following through all publications presented in reviews, since they take too much time to follow. However, for a number of 5-10 reviews, bibliographic references will be further analysed for relevance to the inclusion/exclusion criteria.
5. Language: the Phase 1 of the pilot retrieved a substantial amount of articles in English compared with others in Spanish or Portuguese, but the time to manage the latter was considerable compared with those in English. Therefore, we decided to limit ourselves to articles published in English.
6. Timeline: we decided to establish a time limit, to include articles published after 1994 (year that GM tomato was commercialised)
7. Software: Qiqqa was used to manage the data gathered in the pilot and its features allowed PDF storage, easy reference and retrieval, as well as analysis tools and enabling the work of teams with members in remote places. As a result the team decided to keep the software for the SR.
8. Since most of the articles analysed had a survey methodology based on randomised sampling and comparison of GM crop and non-GM crop cultivators, other articles of lower methodological strength (not randomized and/or lacking comparator) could be either studied in a separate group or eliminated altogether. We have decided for the latter option.
9. The number of articles retrieved, and their diversity, suggest that a meta-analysis for the SR would be inappropriate; a narrative review was selected instead.
10. Due to the diversity of data retrieved, it was decided that the contexts of GM crop cultivation should receive a closer attention within data extraction and study quality

assessment.

11. Amongst the articles retrieved, important proportions referred to a Chinese context and were authored by Chinese researchers. Yet Mandarin and Cantonese were not included in the inclusion/exclusion criteria, because it would require hiring a native speaker researcher or a translator, both options unavailable due to limited funding.

Table 1. Data extraction model

Revision date:	04/27/12
Name of person filling the form:	Monica Racovita
Notes (not in the end of the form, to make it easier to find and read):	No 6A in MEDLINE scoping exercise research file; non-Bt obtained better yields, explained by authors due to the novelty of the non-GM variety and of the low bollworm infestation in 1999, but the cultivation costs (especially pesticides) were higher compared to Bt cotton
ID of the form (usually name of the first author and year of publication):	Pray 2001
Author(s) of the study and affiliations:	Carl Pray, Danmeng, MA (Rutgers University, New Brunswick, NJ, USA), Jikun Huang, Fangbin Qiao (Chinese Academy of Sciences, Beijing, People’s Republic of China)
Title	Impact of Bt Cotton in China
Publication type:	Peer-reviewed article
Journal:	World Development 29(5): 813-825
Funding agency:	Rockefeller Foundation
Type of intervention (cultivation of GM crops): type of crop and type modification	Bt cotton, 2 types: Monsanto, and CAAS (China Academy of Agricultural Sciences)
Context: country, location, agro-ecological climate, weather	China, 5 counties (9 villages) in the Hebei and Shandong provinces (E China), farm sizes of an average of 0.75 ha/family, 1999 was a year with weather not suitable for bollworm

Study design: study type, method, frequency and period of data collection, sample size	Farm-level survey, standard consumer producer surplus model, stratified random sample, each farmer was interviewed once between November and December 1999 after the cotton has been harvested and most of it sold, 283 farmers
Intermediate outcomes: pesticide usage derived from the cultivation of any GM crops, and household income again related to the cultivation of any GM crops	Net income for Bt cotton cultivation was positive compared to negative income for non-Bt cotton. The returns to labour (difference between seed costs and non-labour inputs costs) were higher for Bt cotton than for non-Bt cotton. Pesticide use decreased: farmers cultivating only non-Bt used 57.8 kg/ha, those cultivating both Bt and non-Bt used 29.4 kg/ha, and those who cultivated only Bt used 10.3 kg/ha
Final outcomes: number of pesticides associated illness, and health-related expenditures of the households	Number of pesticides associated poisonings reduced: 4.7% (11 farmers) of those cultivating only Bt cotton, 11% (4 farmers) of those cultivating both Bt and non-Bt cotton, and 22% (2 farmers) of those cultivating only non-Bt cotton were affected

Table 2. Studies selected for Tier 1 (Title + abstract evaluation), but eliminated for Tier 2 (indicating not relevant studies, ex-ante studies, reviews and duplicates)

No	Title	Found in database
1	Miranda, Ary Carvalho de, et al. "Neoliberalism, pesticide consumption and food sovereignty crisis in Brazil." <i>Ciência & Saúde Coletiva</i> 12.1 (2007): 7-14. (POR) NOT RELEVANT	LILACS
2	Varona, Marcela E., et al. "Seguimiento de una cohorte de mujeres trabajadoras en cultivos de flores de la Sabana de Bogotá." <i>Biomédica</i> 18.1 (1998): 30-6. (ESP) NOT RELEVANT	LILACS
3	López Medina, Javier Caracterización del uso de plaguicidas en el sector nicaragüense de la cuenca del Río San Juan / Characterization of pesticides use. Managua; Organización Panamericana de la Salud; 10 ene. 1996. [90] (ESP) NOT RELEVANT	LILACS
4	Arias, Fabio; López, Sotera; Rodríguez, Nilia. Estudio de los efectos psicotoxicológicos: en un grupo de trabajadores agrícolas de la Colonia Tovar / Study of psychotoxicological effects: in agricultural laboring group of the Colonia Tovar; <i>Farm. al día</i> ; 6(6):295-301, 1995(ESP) NOT RELEVANT	LILACS
5	Programa Internacional de Seguridad de las Sustancias Químicas (PISSQ). Captafol. Metepec; Organización Panamericana de la Salud. Centro Panamericano de Ecología Humana y Salud; 1995. 20 p. (OPS. Guía para la Salud y la Seguridad, 49). (ESP) NOT RELEVANT	LILACS
6	Camino Bourdieu, Shirley(ed). Los huertos agroforestales y la seguridad alimentaria campesina: sistematización de 10 experiencias de huertos agroforestales en la provincia de Bolívar / The agroforestry farms and rural balanced nutrition: Systematization of 10 farms agroforestry experiences from Bolívar province. Quito; Programa de las Naciones Unidas para el Desarrollo. PNUD; 2000. [72] p. ilus.(ESP) NOT RELEVANT	LILACS
7	Carmen Ildes R. Fróes Asmus ^I ; Herling Gregorio Aguilar Alonzo ^{II} ; Marisa Palácios ^I ; Alexandre Pessoa da Silva ^{III} ; Maria Isabel de Freitas Filhote ^I ; Daniela Buosi ^{II} ; Volney de Magalhães Câmara. Assessment of human health risk from organochlorine pesticide residues in Cidade dos Meninos, Duque de Caxias, Rio de Janeiro, Brazil/ Avaliação de risco à saúde humana por resíduos de pesticidas organoclorados em Cidade dos Meninos, Duque de Caxias, Rio de Janeiro, Brasil. <i>Cad. Saúde Pública</i> vol.24 no.4 Rio de Janeiro Apr. 2008 NOT RELEVANT	LILACS
8	Pereira, EdwinPereira, Edwin. La floricultura en Tabacundo: un análisis de su efecto en la economía y en la salud de sus trabajadores / Floriculture in Tabacundo: an analysis on economy and health effects of its workers. Quito; s.n; mayo 1999. 33 p (ESP) NOT RELEVANT	LILACS
9	Soares, Wagner Lopes; Porto, Marcelo Firpo Agricultural activity and environmental externality: an analysis of the use of pesticides in the Brazilian savannah. <i>Cien Saude Colet.</i> 2007 Jan-Mar;12(1):131-43. (POR) NOT RELEVANT	LILACS
10	Idrovo, Álvaro Javier; Sanín, Luz Helena Adverse reproductive outcomes among women working in Colombian floriculture: a summary of the evidence through meta-analysis <i>Biomedica.</i> 2007 Dec;27(4):490-7. (ESP) NOT RELEVANT	LILACS
11	Alves, Sueli Martins Freitas; Fernandes, Paulo Marçal; Marin, Joel Orlando Bevilaqua Work conditions associated to the use of pesticides in the tomato crop in Goiás. <i>Ciênc. agrotec.</i> [online]. 2008, vol.32, n.6, pp. 1737-1742 (POR) NOT RELEVANT	LILACS
12	Alves, Sueli Martins Freitas; Fernandes, Paulo Marçal; Reis, Elton Fialho The correspondence analysis as instrument to analyze the profile of the worker in the tomato crop in the Goiás state, Brazil. <i>Cienc. Rural</i> [online]. 2009, vol.39, n.7, pp. 2042-2049 (POR) NOT RELEVANT	LILACS
13	Veiga, Marcelo Motta; Duarte, Francisco José de Castro Moura; Garrigou, Alain; Baldi, Isabelle. A contaminação por agrotóxicos e os Equipamentos de Proteção Individual (EPIs) / Contamination by pesticides and Personal Protective Equipment (PPE). <i>Rev. bras. saúde ocup</i> ;32(116), jul.-dez. 2007.(POR) NOT RELEVANT	LILACS
14	Duke, Stephen O. "Comparing conventional and biotechnology-based pest management." <i>Journal of agricultural and food chemistry</i> 59.11 (2011): 5793-5798. NOT RELEVANT	Medline
15	Huang, Jikun, et al. "Biotechnology as an alternative to chemical pesticides: a case study of Bt cotton in	Medline

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	China." <i>Agricultural Economics</i> 29.1 (2003): 55-67. (using same survey as the 2002 study)	
16	Shelton, Anthony Minot, J-Z. Zhao, and Richard Tyrone Roush. "Economic, ecological, food safety, and social consequences of the deployment of Bt transgenic plants." <i>Annual review of entomology</i> 47.1 (2002): 845-881. (REVIEW)	Medline
17	Dill, Gerald M., Claire A. CaJacob, and Stephen R. Padgett. "Glyphosate-resistant crops: adoption, use and future considerations." <i>Pest Management Science</i> 64.4 (2008): 326-331. NOT RELEVANT	Medline
18	Key, Suzie, Julian KC Ma, and Pascal MW Drake. "Genetically modified plants and human health." <i>JRSM</i> 101.6 (2008): 290-298. NOT RELEVANT	Medline
19	Kumar, Sandeep, et al. "Bt Brinjal in India: A long way to go." <i>GM crops</i> 2.2 (2011): 92-98. NOT RELEVANT	Medline
20	Wilson, T. A., Rice, M. E., Tollefson, J. J., & Pilcher, C. D. (2005). Transgenic corn for control of the European corn borer and corn rootworms: a survey of Midwestern farmers' practices and perceptions. <i>Journal of economic entomology</i> , 98(2), 237-247. NOT RELEVANT	Medline
21	Kumar, Suresh, Amaresh Chandra, and K. C. Pandey. "Bacillus thuringiensis (Bt) transgenic crop: an environment friendly insect-pest management strategy." <i>J Environ Biol</i> 29.5 (2008): 641-653. (REVIEW)	Medline
22	Krishna, Vijesh V., and Martin Qaim. "Potential impacts of Bt eggplant on economic surplus and farmers' health in India." <i>Agricultural Economics</i> 38.2 (2008): 167-180. EX-ANTE STUDY	Bibliosafety
23	Brookes, Graham. "The impact of using GM insect resistant maize in Europe since 1998." <i>International journal of biotechnology</i> 10.2 (2008): 148-166. (REVIEW)	Bibliosafety
24	Zilberman, David, Holly Ameden, and Martin Qaim. "The impact of agricultural biotechnology on yields, risks, and biodiversity in low-income countries." <i>Journal of Development Studies</i> 43.1 (2007): 63-78. NOT RELEVANT	Bibliosafety
25	Bonny, Sylvie. "The success of transgenic crops in the USA: agro-economic factors and prospects/ Le succès des cultures transgéniques aux États-Unis: facteurs agro-économiques et perspectives." <i>Économie rurale</i> 267.1 (2002): 91-105. (REVIEW)	Bibliosafety
26	Meissle, Michael, Jörg Romeis, and Franz Bigler. "Bt maize and integrated pest management-a European perspective." <i>Pest management science</i> 67.9 (2011): 1049-1058. (REVIEW)	Bibliosafety
27	Vanags, J., and I. Turka. "Economic aspects of growing genetically modified (GM) rapeseed in Latvia." <i>Latvijas Lauksaimniecības Universitāte-Raksti</i> 22 (2009): 18-29. EX-ANTE STUDY	Bibliosafety
28	Carter, Colin Andre, GianCarlo Moschini, and Ian M. Sheldon, eds. <i>Genetically Modified Food and Global Welfare</i> . Vol. 10. Emerald Group Publishing, 2011. REVIEW	Bibliosafety
29	Kolady, Deepthi Elizabeth, and William Lesser. "Is genetically engineered technology a good alternative to pesticide use: The case of GE eggplant in India." <i>International Journal of Biotechnology</i> 10.2 (2008): 132-147. EX-ANTE STUDY	Bibliosafety
30	Carpenter, Janet, and Leonard Gianessi. "Why US farmers have adopted genetically modified crops and the impact on US agriculture." <i>AgBiotechNet</i> 3 (2001): 1-4. REVIEW	Bibliosafety
31	Darmency, Henri. "Consequences of the use of GMOs on pesticide use/ Conséquences de l'utilisation des OGM sur l'usage des pesticides." <i>Oléagineux, Corps Gras, Lipides</i> 17.1 (2010): 1-5..) REVIEW	Bibliosafety
32	Huang, Jikun, et al. "Plant biotechnology in China." <i>Science</i> 295.5555 (2002): 674-676. (REVIEW)	Bibliosafety
33	Huang, Jikun, et al. "Transgenic varieties and productivity of smallholder cotton farmers in China." <i>Australian Journal of Agricultural and Resource Economics</i> 46.3 (2002): 367-387 (a second article for the same data)	Bibliosafety
34	Gruère, Guillaume, and Debdata Sengupta. "Bt cotton and farmer suicides in India: an evidence-based assessment." <i>The Journal of Development Studies</i> 47.2 (2011): 316-337. REVIEW	Bibliosafety
35	Qaim, Martin. "Benefits of genetically modified crops for the poor: household income, nutrition, and health." <i>New biotechnology</i> 27.5 (2010): 552-557. REVIEW	Bibliosafety
36	Wu, K. M., and Y. Y. Guo. "The evolution of cotton pest management practices in China." <i>Annu. Rev. Entomol.</i> 50 (2005): 31-52. REVIEW	Bibliosafety
37	Carpenter, Janet, and Leonard Gianessi. "Why US farmers have adopted genetically modified crops and the	Bibliosafety

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	impact on US agriculture." <i>AgBiotechNet</i> 3 (2001): 1-4. REVIEW	
38	Huang, Jikun, et al. "Biotechnology boosts to crop productivity in China: trade and welfare implications." <i>Journal of Development Economics</i> 75.1 (2004): 27-54. (same data as Huang 2002)	Bibliosafety
39	Darmency, Henri. " Consequences of the use of GMOs on pesticide use /Conséquences de l'utilisation des OGM sur l'usage des pesticides." <i>Oléagineux, Corps Gras, Lipides</i> 17.1 (2010): 1-5.) REVIEW	Bibliosafety
40	Zilberman, David, et al. "The economic impact of genetically engineered crops." <i>Choices</i> 25.2 (2010). REVIEW	Bibliosafety
41	Brookes, Graham, and Peter Barfoot. "Global impact of biotech crops: socio-economic and environmental effects, 1996-2006." (2008). REVIEW	Bibliosafety

Table 3. Possibly relevant studies (full text not found/not free) PILOT

No	Title	Found in database
1	Estrella, Jaime. El punto de vista de las ciencias agrícolas. In: Facultad de Ciencias Médicas. Panel Foro "El Centro de Nutrición de la Facultad de Medicina de Quito". MEMORIA. Quito, FCM, 1995. p.53-9	LILACS
2	Pytel, Delfina Azucena Castro Blanco; Venturi, Denise. Denúncia, o passo para ações contra a contaminação / Denounce, walk for actions versus contamination In: Marques, Maria Cristina; Diniz, Elizeu; Carvalho, Marisa Lima; Pereira, Sheila Duarte. Casos e fatos da vigilância sanitária sobre a saúde da sociedade. São Paulo, SOBRAVIME, 2002. p.241-257 (POR)	LILACS
3	Bolivia. Ministerio de Vivienda y Servicios Básicos. La mujer campesina y la importancia de organizarse / The rural woman and the importance of organize. La Paz; Bolivia. Ministerio de Vivienda y Servicios Básicos; jun. 2001. 44 p. ilus.	LILACS
4	Teixeira, Paulo José. Avaliação ambiental e biológica da exposição ocupacional aos hidrocarbonetos policíclicos aromáticos (HPA's) gerados em processos produtivos onde ocorre a combustão de matéria orgânica / Environmental and biological evaluation of the occupational exhibition to the Polycyclic Aromatics Hydrocarbons (HPA's) generated in productive processes where the material organic combustion takes place. São Paulo; s.n; 18 set. 2007. 95 p. ilus, tab. (PhD thesis)	LILACS
5	Fragar, L., and J. Temperley. "Drivers of adoption of safety innovations on Australian cotton farms." <i>Journal of agricultural safety and health</i> 17.3 (2011): 209-226.	Medline
6	Abdollahian-Noghabi, M. New approach to the management of genetically modified herbicide tolerant sugar beet. JOURNAL OF SUGAR BEET; 2003; 18(2);167-168.	Bibliosafety
7	Werth, Jeff, et al. "Glyphosate resistance management in Roundup Ready® cotton." <i>Weed Management: Balancing People, Planet, Profit. cotton: Weed Society of New South Wales</i> (2004).	Bibliosafety
8	Pilcher, Clinton D., and Marlin E. Rice. "Economic analysis of planting dates to manage European corn borer (Lepidoptera: Crambidae) with Bt corn." <i>Journal of economic entomology</i> 96.3 (2003): 941-949.	Bibliosafety
9	Pemsl, D., H. Waibel, and A. P. Gutierrez. "Why do some Bt-cotton farmers in China continue to use high levels of pesticides?." <i>International Journal of Agricultural Sustainability</i> 3.1 (2005): 44-56.	Bibliosafety
10	Mayer, Sue. <i>Genetically modified cotton: implications for small-scale farmers. A report for PAN UK's pesticides poverty and livelihoods project, August, 2002.</i> Pesticide Action Network UK, 2002.	Bibliosafety

Figure 1. Search results: hits

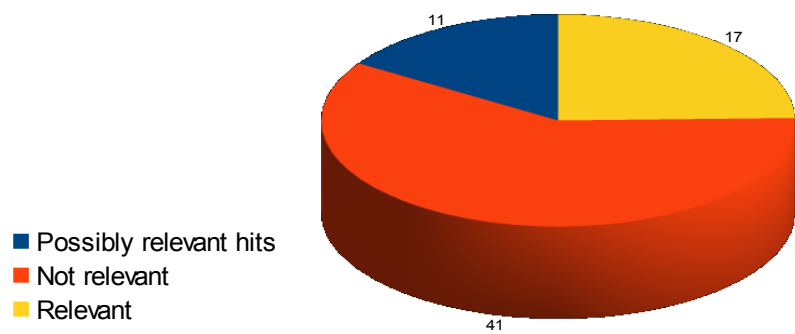
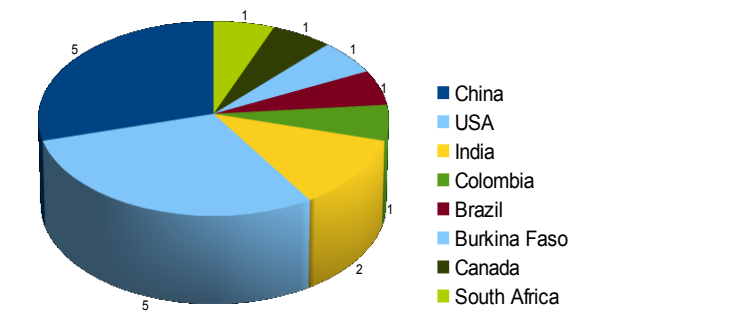


Figure 2. Context of papers included in data extraction: A. All papers. B. Papers divided by final and intermediary outcomes.

A.



B.

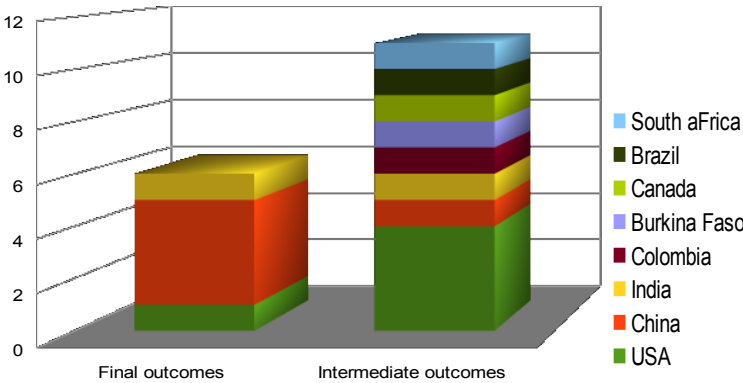


Figure 3. Types of GM crops studied

