

The corruption of agricultural science

The impacts of GM crops in Argentina

with pictures from Argentina, Paraguay, Brazil

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Dominant metaphors in agriculture

- Key modern agricultural practice emerged from wars:
 - Synthetic nitrogen fertilisers from WW1
 - pesticides: organophosphates and 2,4-D from WW2
 - Note violent names given to pesticides: fusillade, skirmish, bullet, revolver, rifle, striker, throttle, conqueror, broadside, invader
- Agriculture becomes a **war** on land, pests, diseases – and people who won't adapt or leave the land
- Assumption that agriculture must increase in scale and reduce the number of farmers in order to succeed
 - Rural areas neglected, forcibly depopulated; mass monocultures take over from smallscale diverse local agriculture (often accompanied by violence)

Monsanto and the logic of business

- 1995 – a Monsanto scientist explained to me, saying:
we have the best selling herbicide ever. The patent will soon run out, so the obvious thing is to develop plants that can tolerate Roundup and sell the herbicide and the GM seed as a package and that's what we've done.

Particular issue for this presentation:

GM crops in Argentina

- First introduced in 1996 – mass aerial spraying of Roundup without consultation or consideration
- Product: animal feed, major markets: Europe and China
- Argentina: at least 24 million hectares; Brazil 40 m ha, Paraguay 3.6 m ha, Uruguay 1.5 m ha 2013: forest loss: Argentina: 2 m ha forest, Paraguay 1 m ha since 2004
 - Brazil now world's largest **agrochemical user**, Brazil and Argentina both major players in agchem production
- Emergence of problems - herbicide tolerant weeds, serious health problems in local communities, biodiversity loss, soil and water contamination...
- ... denied by corporations and ignored by government

Their home has been smashed and burned and their land taken for GM crops



photo: Mocese, Argentina

Example of a small town in Argentina where the soya is grown right up to the edge and is regularly sprayed with agrotoxics without warning







GM crop in Paraguay being sprayed while soldiers guard it against angry local communities



photo: with thanks to Miguel Lovera and Sobrevivencia Paraguay

Small Paraguayan farmers are arrested for protesting against GM soya



photo: with thanks to Miguel Lovera and Sobreviviencia Paraguay

Local people speak out; a scientist investigates and is attacked

- 2008: “Declaration of Caroya” by local people from Córdoba and environmental NGOs citing...
.... Birth defects, mutagenesis, miscarriages, depression and suicide, disorders of the central nervous system and other neurological pathologies; disabilities, spina bifida, lupus, leukemia and other types of cancers...
<http://semillasdeidentidad.blogspot.com/2008/09/paren-de-fumigar.html>
- 2009: Andres Carrasco, molecular biologist, heard this and decided to study glyphosate impacts on frogs.
Teratogenesis by glyphosate based herbicides and other pesticides. Relationship with the retinoic acid pathway. (2013)
http://www.gmls.eu/beitraege/113_Carrasco.pdf
- Impacts were so bad, he chose to publish the results without delay: in Pagina12 with Darío Aranda, one of the only journalists interested in rural issues
- Massive attacks on his work (declared flawed) and his integrity (declared unethical) followed, plus an actual physical attack in Chaco
<http://www.telesurtv.net/english/opinion/Andres-Carrasco-vs-Monsanto-20141001-0090.html>

These pictures show the impacts of agrototoxic spraying on children in Paraguay



Source: Paraguay Sojero (2006). Report by Javiera Rulli, Stella Semino, and Lilian Joensen, Grupo Reflexión Rural (GRR).
http://www.portalguarani.com/detalles_museos_otras_obras.php?id=27&id_obras=2138&id_otras=297

Physicians also take action

- 2010: 1st NATIONAL MEETING OF PHYSICIANS IN THE CROP-SPRAYED TOWNS: doctors note impact on general health, increased incidence of birth defects, cancers, respiratory diseases, skin disorders and many more. (1)
- Followed by two more meetings, 2011 and 2015.
- The declaration from the 3rd meeting noted the massive increase in cancer and endocrine disruption among many others. (2)
- **They call for a ban on: aerial spraying, substances described as carcinogens in IARC report, the worst pesticides and: an end to spraying within 1000 meters of towns/schools; the promotion of agroecology.**

(1) <http://www.reduas.com.ar/statement-from-the-1st-national-meeting-of-physicians-in-the-crop-sprayed-towns/>

(2) <http://www.reduas.com.ar/3rd-national-conference-of-physicians-of-crop-sprayed-towns/>

President of physicians' meetings denounced

- Medardo Avila Vazquez, who presided over those meetings of the physicians, decided to study one of the towns, Monte Maíz in 2014 with 70 students and researchers.
- They documented the same patterns as reported elsewhere: increased cancer and birth defects/spontaneous abortions...
- The dean of ag. Science, University of Córdoba, accused him of spreading unvalidated and deceptive information, causing fear in Monte Maíz.
- But Monte Maíz wanted to limit spraying, had requested the research, and supported him.
- Soon afterwards, the dean (see above) made a collaboration agreement with Monsanto...
 - <http://www.pagina12.com.ar/diario/sociedad/3-271898-2015-05-04.html>
 - <http://gmwatch.org/index.php/news/archive/2015-articles/16145>

Girl from one of the crop-sprayed towns - photo by Pablo Ernesto Piovano

Project: The Human Cost of Agrochemicals
The Manuel Rivera-Ortiz Foundation for Documentary Photography & Film

<http://mrofoundation.org/pablo-ernesto-piovano/>

‘Over the last decade, miscarriages and unexplained birth defects have increased by 400 percent. Skin disorders, mental disabilities and epilepsy are just a few of the documented health effects on those living directly in the spray’s path.’



ENSSER, European Network of Scientists for Social and Environmental Responsibility

- ENSSER produced a statement (10.12.2013): No scientific Consensus on GMO safety: <http://www.ensser.org/media/0713/>
- A signatory: Dr Raul Montenegro, a biologist at the University of Cordoba, Argentina said:

“Countries like Argentina and Brazil are paradises for GMO agriculture because their governments have not established monitoring systems for disease and deaths from all causes, along with monitoring of the accumulation of residues of pesticides and GMO insecticidal proteins in exposed people and the environment, and variation of natural biodiversity indexes. If these monitoring systems were in place, it would be possible to measure the effects of GMO agriculture. As things stand, the governments of these countries deny that there is a problem even in the face of numerous reports from the people who are affected and the doctors who must treat them.”

Conclusions

- These are just a few of the consequences for people and biodiversity of **agriculture as war and mass monoculture**
- There is a systematic failure at government level:
 - to **monitor** the impacts of chemicals
 - to take a **systems approach** to agriculture and food provision and change practice accordingly
- Local communities ignored
- Constant PR offensives to denigrate and attack those who carry out critical research
- We have a clear obligation not to import and use GM animal feed whose production causes such harm to others

This small farmer in Paraguay is surrounded by GM soya and has been threatened many times but continues to grow food for his family and community



photo: Helena Paul

Some more reading from EcoNexus

- *Swords and Ploughshares: industrial agriculture as warfare and the need for a paradigm shift.* Helena Paul, in: "The Chains of War - nuclear weapons, militarisation and their impact on society" edited by Angie Zelter, published by Luath in Spring 2014
- *GM crops are driving genocide and ecocide – keep them out of the EU!* Helena Paul, The Ecologist, 5 February 2014
http://www.theecologist.org/News/news_analysis/2267255/gm_crops_are_driving_genocide_and_ecocide_keep_them_out_of_the_eu.html
- Report: *Agriculture and Climate Change: Real Problems, False Solutions* by EcoNexus, Biofuelwatch, Grupo de Reflexion Rural, NOAH - Friends of the Earth Denmark and The Development Fund Norway, published for UNFCCC COP, December 2009.
http://www.econexus.info/sites/econexus/files/Agriculture_climate_change_copenhagen_2009.pdf
- Report: *Argentina: A Case Study on the Impact of Genetically Engineered Soya* by Lilian Joensen, Stella Semino, (Grupo de Reflexión Rural, Argentina), and Helena Paul (EcoNexus). Produced for The Gaia Foundation. May 2005.
<http://www.econexus.info/sites/econexus/files/ENx-Argentina-GE-Soya-Report-2005.pdf>

Picture credits

- Slides 5, 6, 7 and 15 are of scenes from Argentina and slide 8 is from Brazil
- Slides 9 and 10 are from Paraguay, with thanks to Miguel Lovera and Sobreviviencia Paraguay
- Slide 12 from Paraguay Sojero by Javiera Rulli, Stella Semino, and Lilian Joensen, Grupo Reflexión Rural (GRR)
- Credits for 15 are on the slide
- Slide 18, from Paraguay by Helena Paul (with thanks to Global Forest Coalition for organising the field trip)