WHAT YOU SHOULD KNOW

ABOUT DOW'S 2,4-D GM MAIZE

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During May 2012, the South African GMO authorities[1] approved Dow Chemical's highly controversial GM maize variety, DAS-40278-9 for import into South Africa for direct use as food, feed and processing. This GM variety has been genetically engineered to withstand liberal applications of Dow's toxic chemical herbicide 2,4-D and has yet to be approved for growing anywhere in the world. An application for commercial cultivation has been lodged by Dow in the United States, where it is pending approval, amid a maelstrom of protest from diverse sectors of US society, ranging from public health professionals to US farmers.

2,4 D was one of the active ingredients present in the now infamous 'Agent-Orange' chemical defoliant, used to devastating effect by the US military during the Vietnam war. Dow's 2,4-D GM maize has been developed in the face of widespread glyphosate resistant weeds appearing on US farm lands. Such weed resistance could potentially undermine the biotechnology industry's glyphosate tolerant crops (synonymous with Monsanto's 'Roundup-Ready' brands), which still account for 85% of all GM crops grown worldwide.[2]

To date, only Canada, Australia, New Zealand[3] and Taiwan[4] have approved the 2,4 D tolerant GM maize for import, though applications for import have also been made in the European Union, Japan and Mexico.

Food safety risks

If the 2,4-D tolerant GM maize is approved for planting in the US, it is likely to result in a 30-fold increase in the use of 2,4-D in maize cultivation (the introduction of glyphosate tolerant crops has had a similar impact upon glyphosate use). This being the case, South African dinner plates could soon be serving up GM maize containing residues of the toxic 2,4 D chemical. The World Health Organisation's International Agency for Research on Cancer (IARC) classifies the Chlorophenoxy herbicide group, of which 2,4-D is by far the most widely used member, as 'possibly carcinogenic to humans'.[5]

Numerous studies in humans have reported an association between exposure to 2,4-D and non-Hodgkin's lymphoma, a cancer of the white blood cells.[6] The first studies to link 2,4-D with non-Hodgkinson's lymphoma were published in Sweden over thirty years ago.[7] Other studies have found that 2,4-D formulations are cytotoxic (damages and kills cells), mutagenic, exhibit hormone disrupting activity,[8] and affects the function of the neurotransmitters dopamine and serotonin.[9]

Experiments in which lactating rats were fed low doses of 2,4-D revealed that the chemical inhibits breast feeding from mother to pup[10] and as a consequence, led to weight loss in the offspring.[11] 2,4-D and its formulations have been found to cause chromosome and DNA damage in hamster ovary cells,[12] the bone marrow and developing sperm cells of mice,[13] and sister chromatid exchange (which has been linked to the formation of tumours) in chicken embryos.[14]

International bans

The use of 2,4-D is banned completely in Norway, Sweden and Denmark.[15]

In Canada, the use of pesticides containing 2,4-D on lawns is banned in Quebec, Newfoundland and Labrador[16] and Nova Scotia. In 2010 the province of Alberta banned fertiliser-herbicide combinations in 2010, due to concerns that these products result in the overuse of 2,4-D and threatens the health of waterways. Ontario's Cosmetic Pesticides Ban Act, which took effect in 2009, has prohibited the use of 2,4-D for 'cosmetic uses' on outdoor residential and landscape areas, vegetable and ornamental gardens, parks and school yards'. Manitoba plans to introduce similar legislation in late 2012 or early 2013.[17]

History of problems with 2,4 D use in South Africa

In 1990, a group of fresh vegetable producers from the Tala valley in KwaZulu Natal took legal action against a manufacturer of herbicides, after their crops were damaged by herbicides, including 2,4-D.[18] This ultimately led to a ban on the aerial application of 2,4-D (in its dimethylamine salt form) in KwaZulu-Natal and a total ban in the magisterial districts of Camperdown, Pietermaritzburg and Richmond. In its ester form, 2,4-D was completely prohibited from use in the province. In 1980 2,4-D was withdrawn from agricultural use in the Western Cape.[19]

South African consumers will be in the dark

Once importation of this GM maize variety begins, South Africans will be unaware that they are consuming it. Although South Africa has promulgated legislation to provide for the mandatory labelling of GM foodstuff, this legislation is currently not being complied with nor enforced and is the subject matter of an ongoing dispute between consumers and the food industry.

Of further concern is that GM maize containing 2,4-D residues is highly likely to go undetected by South Africa's porous food inspection system. Imported food should be tested for pesticide residues, however, severe capacity constraints in responsible government agencies at all levels have seriously undermined the vigilance of this system.[20] The stark reality is that if Dow's 2,4-D GM maize does end up at the kitchen table, South Africans will be unwitting and involuntary consumers of such harmful residues.

Regulatory failure

The lack of adequate room for meaningful public involvement in decision making concerning GMO approvals in South Africa is a serious and ongoing cause for concern. The African Centre for Biosafety (ACB) has for a number of years, campaigned strenuously for transparent and meaningful public participation in the GMO decision making process.[21] In 2009, the ACB was compelled to lodge a complaint to the Compliance Committee of the Cartagena Protocol on Biosafety, in a bid to force the South African government to make pertinent information regarding GMO decision making public.[22] Unfortunately, the Compliance Committee did not intervene as it felt that the mandate of the Committee extends only to complaints lodged by governments and not also to public interest groups.

Currently, an applicant (Dow Chemical, for example) applying for a commodity clearance permit need only publish a public notice in 3 national newspapers. Consequently, if members of the public do not pick up a notification on the day of its publication, they will effectively be excluded from participating in the process. Furthermore, the details of the application are not openly available to the public, for example on the internet, but must be requested and paid for through a Public Access to Information request.

Conclusion

By authorising the importation of this risky new GM maize variety, our government has abdicated its constitutional obligation towards its citizens to ensure that they eat safe and healthy food. The government has also set a dangerous precedent that could see our food becoming further inundated by toxic chemicals. We urge government to reverse its decision to authorise this 2,4 D GM maize and impose a ban on the grounds that it poses unacceptable risks to human health.

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