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The Committee Secretary
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Commonwealth of Australia

SUBMISSION TO STANDING COMMITTEE ON PRIMARY INDUSTRY

Dear Secretary,

The benefits of gene technology are proving to be very subordinate to the ecological damage that the crops cause, and of course the simple fact that consumers world wide are becoming ardently opposed to GE more generally.

It would be quite foolhardy for government to go down the GE path when our export commodity buyers in Asia and Europe do not want GE produce. Organics is the growth industry and it is therefore obvious that this should receive maximum support.

Australia's and New Zealand's blind commitment to GE is wasting scarce research and development resources which should be spent on the clean, green organic alternatives which need urgent support to develop.

I enclose an explanatory article I wrote a short time ago in answer to one of our own protagonists of GE.

Sincerely

Robert Anderson

Member of Physicians & Scientists for Responsible Application of Science & Technology

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THE FEROCIOUS COMERCIAL GENE

I am growing more concerned by the day as genetic biotechnology woos our farmers both here and in Australia into the wonders of this technologies of endless advantage and greater profits; this also being strongly supported by the present governments.

I cannot help but feel our farmers are being sold a pup. One which in a very short time will grow into a rather ferocious animal. Having been a small scale farmer myself and having many friends who are still farming, I feel great concern here. Let me give you a somewhat different perspective to their new found pet which our farming friends may not be so familiar with.

First and foremost, the advocates of the technology are of course generally funded by the biotech giants. But this aside, we must consider facts as they present themselves.

Monsanto scientists finalised the development of a gene technology making plants resistant to Roundup in about 1992 [Marc Lappe and Britt Bailey]. This gene increases enzymes in the plant that would otherwise be inhibited by the herbicide. The enzyme [EPSPS] controlling the amino acid bio-synthesis in plants is increased and the plant then becomes tolerant to glyphosate [Roundup]. The increased market for these RR Soybeans raises serious questions about the affects in the human diet and also requires that the possible toxicity of additional gene products needs careful scrutiny.

"According to both the USDA and FDA, the genetic changes made to Monsanto’s RR Soybeans will affect neither the food value nor the toxicity of the product. For this reason, these Governmental Agencies have exempted all RR Soybeans from review requirements before their commercial introduction" [Marc Lappe and Britt Bailey]. What is

incredible is that Monsanto pushed the FDA to dismiss health concerns of the EPSPS protein; and these are the agencies which our own authorities, ERMA and ANZFA, trust to test food plants on our behalf.

I remain unconvinced that these soybeans are in fact strictly equivalent to natural soybeans. The amino acid composition is likely to be different. One of the main products of soybean metabolism are compounds called isoflavonoids. These substances have a remarkable similarity to human estrogens. We call these compounds phytoestrogens. These chemicals play critical control roles in such functions as calcium metabolism, cancer tissue changes, blood clotting and various immune functions. It is essential, therefore, to know what quantity of phytoestrogen is present in the soybean. A research team headed by Dr H Sandermann, in Germany, found that RR Soybeans may have elevated phytoestrogens.

This type of study gives disturbing evidence that GE crops such as this are not only different, but could have a dramatic impact on human health for those relying on soy protein. For example, soy milk is used as an alternative for around 7% of infants.

High estrogenic activity of soy isoflavones in non-dairy infant formulas are showing greatly disturbing new data. When ingested by infants, the isoflavones were calculated by British scientists to give circulating levels equivalent to 13 000 to 22 000 times the normal plasma estradiol concentrations found in babies. Already genetically engineered soybeans have been found to cause serious allergic reactions to some children. Anaphylaxis - acute allergic reaction which is life threatening - is on the increase.

On 12 March this year, the UK Daily Express carried an article, *Why soya is a hidden destroyer* [Mark Townsend] citing a 50% increase in allergic reactions to soya last year. Researchers say these findings provide real evidence that GEFs "could have a tangible, harmful impact".

Yet another factor to consider is the safety aspect of Roundup. Although described as safer than most herbicides, we find it is still the third highest in reported illness among agricultural workers in

California. Furthermore, according to the Journal of Pesticide Reform, it damages the ability of bacteria transforming nitrogen in the soil and harms fungi that help plants absorb water and nutrients. Interestingly, residues of the herbicide have been found in lettuce, carrots and barley that were planted a year after the soil was sprayed. The company have applied to increase the residue of this herbicide in our foods by 200% - 0.1 to 20 mg/kg.

ERMA have given the go ahead for sugar beet trials in New Zealand. Monsanto invited numerous journalists to view such a trial in the UK only to find that leaving the weeds to grow before the final harvest resulted in depressing the yield of the beet. The conclusion to this is, of course, that spraying has to take place at first weed emergence and in all probability several times before harvest. As a New Scientist article [29 October 1998] said, "Good-bye weeds, good-bye mulch, good-bye insects, good-bye biodiversity. Good-bye Monsanto's version of sustainability." And as the New Scientist concluded, "the biotech industry is developing two very different sales pitches for its products - one for farmers and one for the rest of us."

Some of the GE crops, maize for instance, carry a resistant gene against a group of antibiotics. These have wide use in our arsenal against common infections. The gene could be easily transferred to humans through the digestive tract with the result that dangerous bacteria will no longer respond to antibiotics.

The Shigella-like toxins of one strain of bacteria [E.Coli 0157] have almost certainly been acquired by a process of horizontal gene transfer. Another strain of bacteria, isolated in Cambridge, England, was resistant to 21 out of 23 antibiotics. These are only some of the formidable dangers dawning with the adoption of this form of agriculture.

It is perhaps significant that KRRS [Karnataka Rajya Raitha Sangha] of India filed a case against the Monsanto Corporation for carrying out illegal field trials. Recently, the British Government filed successful criminal proceedings over GE experiments carried out without proper precautions. A group of scientists are in the process of taking the FDA to court for refusing to recognize the carcinogenic properties of a GE milk hormone. In September of 1998 in Maccarese

near Rome, Monsanto planted a field of RR Soybeans without the surrounding protection to other crops.

There is now a never ending list of lawsuits being applied as biotech giants take farmers to court for ‘saving’ proprietary seed; despite farmers having saved seed since time immemorial. I can recommend Phillida Bunkle’s article "GMO seed patents will reduce farmers to serfs." Its essential reading for all our farming friends.

So I feel we should be very wary of our new found pet.

We cannot simply be all destructive. We must also offer a constructive solution. What can we do instead of GE? We did not just campaign against nuclear power. Farmers should realise instead of GE and agribusiness more generally, the only real hope for feeding the world is organic agriculture. If we can do this with apples and other products, as is being achieved in NZ now with considerable success, we can do it much more generally. The lower costs more than compensate for the cases of slightly lower yields; in general the returns of organic farming are several times those achieved in agribusiness.

World-wide, there is a growing demand for organic produce.

An Australian Press Release dated 8 January 1999 revealed the New South Wales Grains Board had sold the largest cargo of canola ever; 57 500 tonnes valued at $A26 million. Why? Because "Australia is the only country to guarantee non genetic modified canola".

Headed for Europe, it reflects European rejection of GEFs.

I can only hope that a modicum of this ‘other’ side of the picture is appreciated. Our future must lie in quality food production not in aiding and abetting the world food monopolies that will reduce us to serfs.

Sincerely
Robert G Anderson

[Member of the Physicians & Scientists for Responsible Application of Science & Technology]