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TO: Dr. Barry O Reilly  
Secretary  
Interdepartmental working group on co-existence  
Department of Agriculture and Food  
National Crop Variety Testing Centre  
Backweston  
Leixlip, Co. Kildare

DATE: 11 November 2004

RE: National Strategy on co-existence of GM crops

The Irish Seed Saver Association (ISSA) is a member of GM Free Ireland and subscribes to and supports the submission to the working group presented by that organisation.

However we have additional and grave concerns about the introduction of GM crops to Ireland in as far it will have deleterious effects on the particular work we undertake. Our remit is to conserve and utilise native varieties of fruit, grain and vegetables and to promote the environmental benefits of organic horticulture/agriculture.

In collaboration with TCD and with financial support from Genetic Heritage Ireland and the Department of Agriculture, ISSA created a native grain collection comprising 48 varieties of wheat, barley, oats & rye. We are currently working on native linseed varieties. Prior to the completion of our work, Ireland was the only western country that did not have a native grain collection. It took almost 10 years of painstaking work to locate Irish grains in gene banks worldwide and negotiate for those gene banks to donate seed (usually as little as 5 grams.). Then over a number of years we planted, save seed & replanted until a sufficient quantity was bulked up to begin field scale trials/evaluations on the quality & characteristics of the grains. Just when this precious resource has been returned to Ireland – our living agricultural heritage – it is threatened by contamination from GM varieties. Concern for the grains is our most immediate concern, however we are well aware that once the door is opened for the first influx of GM crops other species will soon follow thus putting the 300+ rare vegetable varieties and the 250 top fruit varieties we have saved from extinction at risk as well.

The fruit, grain & vegetable varieties conserved by ISSA carry many of the traits and qualities that the biotechnology industry is attempting to engineer – without compromising the integrity or safety of any other wild or conventionally bred, related, variety and at no risk to the environment or human/animal health. They have the added great advantage of being freely available to anyone wishing to grow them (no royalties/patents etc), they are the living agricultural heritage of Ireland and her citizens.

Contrary to what the biotechnology companies claim GM technology is NEITHER precise, predictable or specific. It is based on a 40 year old hypothesis that has been proven to be inaccurate. After discovery of the 'Double Helix', Watson & Crick put forward the 'Central Dogma' stating that each gene, coded for its own,

single, unique protein, dictated one characteristic/trait in the organism. Consequently it was estimated that the number of proteins in the human body was approximately 100,000 and it was therefore predicted that there would be the same number of genes. However the multi million dollar 'Human Genome Project' published in June 2000 reported that humans only carry 30,000 genes (a mustard weed plant has 26,000). This should have been the death knell for commercial GM technology, but the evidence was ignored and business as usual pertained. In fact PR activity escalated in the effort to achieve a fait accompli and get GM plants growing worldwide in order to recoup the vast amounts of money that had been pumped into the industry in the previous 15 years and before awareness of the inherent dangers in the technology became widespread. The European refusal to comply with the industries demands at that time has led to the current debate.

The fact that one gene can create multiple proteins explains some of the surprises that genetic engineers are incessantly faced with. To make a protein the gene dictates that particular amino acids are assembled in a particular order but when necessary the amino acids get reassembled by a process known as alternative splicing and an entirely new protein is thus formed. In this way hundreds, or even thousands, of proteins can be created by a single gene. This is not an arbitrary phenomenon – it has become precise over aeons of evolutionary activity in each, individual organism.

Now, when a foreign gene makes its appearance in an organism, through genetic engineering it begins to assemble amino acids as though it were functioning in its natural environment. In all likelihood alternative splicing will occur and, the amino acids will be rearranged and no-one knows what protein will be created and what effect it will have on the host organism immediately or in future generations. While scientists were certain that a single gene created only one protein they could confidently insert that gene into another species and be sure that it would create that unique protein. The biotechnology industry was developed on that premise, on foot of that surety. But the scientists were wrong!!

In addition to alternative splicing there are other modifying influences on the creation of proteins. These complex processes have evolved in a harmonious relationship over a long evolutionary period and been subject to thousands of years of testing in nature. When GM technology interferes and a gene is transferred from one organism into the DNA of a totally unrelated species (bacteria to maize) the plants system is very different from that of the bacteria and the harmonious interdependence of genes in their natural environment is likely to be disrupted in unspecified, imprecise unpredictable and dangerous ways.

GM technology is complicated and intricate beyond imagination. The science is in its infancy – it needs to stay in the laboratory. Scientists need to be free from coercion and fear and at liberty to fully design their own experiments in order to make & test discoveries in this field of science. To consider releasing GM organisms into the environment at this stage of development of the science is irresponsible at best and will create an environmental and food security problems, of mammoth proportions, for future generations to deal with.

The destruction caused by man's interference with the earth's ecology will be as nothing compared to the damage done by the clumsy, ignorant, profit motivated interference in the delicately tuned and intricate system of genetics that has evolved over millennia. The arrogance of the commercially interested parties is breathtaking. Many scientists would agree that the study of genetics is in its infancy and that the science should remain in the laboratory until adequate

research, development and safety testing has been completed and that is the stance ISSA takes and the one we would encourage the Irish Government to take.

Thank you for inviting us to contribute information for consideration by the working group. I look forward to reading the results of your deliberations and to seeing the full details and evidence to support the conclusions you arrive at.

Bridget Carlin

on behalf of the 1400 members  
of The Irish Seed Savers Association