Dear Sir,

Reading last week's committee Hansard of Thursday 7th March, 2013, I notice that no reference seems to have been made to non-microbial transmission of AMR via GM-foods. Hence I would like to make a brief submission covering that aspect of AMR.

I first became aware of this issue from a report in the UK Guardian newspaper in 2002:

http://www.guardian.co.uk/science/2002/jul/17/gm.science

The discovery that genetic material from GM soybeans could survive food processing and the acidic conditions in the human stomach, and then transfer to our gut bacteria was very important because Monsanto and other GM companies have always maintained that it could not happen. The probability of such occurrences may well be low, but with billions of bacteria in our guts, the possibility is definitely there. That newspaper report, based on research at Newcastle university (UK) commissioned by the food standards agency, suggested that the transmission of AMR is likely. If so, then people's resistance to widely used antibiotics could be compromised by the ingestion of foodstuffs made from GM crops.

The US Institute for Agriculture and Trade Policy also issued a report called "Antibiotic resistance and Genetically Engineered Plants" at around the same time:

http://www.iatp.org/documents/antibiotic-resistance-and-genetically-engineered-plants

The IATP is concerned about the impact of global trade agreements on agriculture and food policies. This is becoming an important issue again as the Trans-Pacific Partnership is being negotiated:

http://www.iatp.org/blog/201303/tpp-doubling-down-on-failed-trade-policy

As the IATP report states in the Introduction:

Genetically engineered crops have hit the market in a legislative vacuum. The U.S. Congress has never passed any law that specifically regulates this radical new technology. In the absence of any directly relevant legislation, federal agencies created a regulatory framework for genetically engineered crops that was tucked into existing statutes not designed to handle genetically engineered crops and thus in many ways inappropriate. The framework for how to handle these new plants, focused largely on the United States Department of Agriculture (USDA), Environmental Protection Agency (EPA), and Food and Drug Administration (FDA), was flawed from its inception. In a public interest legal challenge to the framework in the late 1980s that sought to set it aside, the U.S. District Court for the District of Columbia decided that, although the regulatory framework "is not a model of clarity," it would stand because it was "merely a first effort to aid in the formulation of agency policy." Yet the FDA, EPA, and USDA have barely revisited their regulations, except perhaps to weaken them.

And further on:

Companies engaged in genetic engineering issued a statement in 1998 that they would "remove antibiotic resistance marker genes, wherever possible, from the next generation of genetically modified products." The statement claims that alternatives to the use of antibiotic resistance marker genes" (ARMs) are being developed," and that it will "take some years before products that will be developed using any of these methods will reach the market place, at least for some crops." The statement does not make it clear what companies engaged in genetic engineering consider to be the "next generation," nor does it offer any indication of what will happen to products already commercialized that contain ARMs. And most importantly, it fails to acknowledge that alternative methods are and have been available for some time.

I raise this issue because Australian regulatory authorities appear to have taken U.S. FDA approval as proof that GM foods are completely safe and not significantly different from non-GM foods. However, it is just not possible to predict what will happen to specific genes or gene products when they are inserted into a foreign organism. Some scientists might like "playing God", but when that is allied with the interests of powerful corporations, it is positively dangerous. Application of the "Precautionary Principle" is essential when outcomes of a new technology are uncertain.

I used to work with recombinant bacteria and yeast at CSIRO, so I am familiar with the technology, even though I have not been involved directly with GM crops. I am now retired.

Regards,

Chris Mardon