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One of the most perplexing paradoxes of modern life is that consumers will willingly ingest potent mixes of chemicals or submit to analysis by some of the most advanced technological instruments in order to sustain their health, yet baulk at the use of the same technology in the production of the food they consume. The most obvious example is the use of insulin for the treatment of diabetes. The insulin used by diabetes patients around the world is produced via the use of recombinant DNA gene technology, and its use is absolutely uncontroversial. Yet the use of that same technology to produce GM crops triggers virulent opposition and government regulation, despite the fact that such crops have been grown for 40 years without a single adverse impact on consumers.

Why technology that is absolutely uncontroversial in some uses suddenly becomes the subject of consumer protests and government bans when used in food production is the topic that is addressed by the papers included in this edition of the *Farm Policy Journal.* Perhaps equally important is the need for the agriculture sector to find ways to ensure that farmers' access to technology is not unnecessarily restricted, especially in the event that robust science supports the safety of the technology for use in the production of food for human consumption.

The first paper is written by Charlie Arnot, the CEO of the Centre for Food Integrity (CFI), a United States-based organisation that aims to better understand the reaction of consumers to the use of new agricultural technologies, and to find better ways to communicate with those consumers about the use of those technologies. One of the more interesting conclusions of the CFI's research is that consumers are much more likely to be reassured about the use of a new technology when the information about it is provided by a peer or someone who has shared values with the audience, rather than by someone with a high level of technical qualifications and competency. As the author notes:

> The goal should not be to win a scientific or social argument, but to find more meaningful and relevant methods to introduce science in a way that encourages thoughtful consideration and informed decision-making.

The second paper is by Mark Swift, an Australian farmer and recent Nuffield scholar, who has focused on these issues as part of his recent studies. The paper examines issues of consumer acceptance associated with a wide range of different agricultural technologies, noting the scepticism held by many towards technology, despite the advances that it brings. The author makes a very pertinent observation about the fact that the more successful science and technology is in securing food supplies, the more sceptical consumers can afford to be about the provenance of that food, and the technologies used to produce it.

The third paper by Diederik van der Hoeven, a science journalist, asks whether scientists should take note of the concerns that the public often appear to hold about genetic engineering in particular. The paper argues that there are three 'dimensions' to the judgements that are made

by consumers about the products of different technologies and production systems, and these are health, fashion and ethics. The use of technologies for products that improve human health is generally uncontroversial, hence the paper notes that health-related products are generally quickly accepted. The fashion and ethics dimensions are less predictable and more variable, and the paper provides a range of different examples that on occasion seem contradictory. A conclusion is that health is the overriding dimension; that fashion is fickle; and that ethical transparency is also a critical factor in gaining consumer acceptance.

The fourth paper by Emmanuel Domonko and co-authors examines the issue from the perspective of consumers in developing nations, who often have the threat of malnutrition as a major driver of their decision-making, and who are also frequently both producers and consumers of food. The paper examines a range of different case study examples of specific issues associated with either malnutrition or nutrient deficiencies, and the solutions for these that are available through the use of genetically modified (GM) crops. The paper concludes that even in situations where malnutrition and nutrient deficiencies are key challenges, there is still a need for careful communications with, and education of both producers and consumers in order to gain broad acceptance of the use of new technologies in agriculture.

The fifth paper, by Alice Woodhead and co-authors, looks specifically at the challenges that are faced by Australian farmers in producing and marketing products for wealthy Asian consumers. The paper points out that the reason that Australian products are preferred by Asian consumers is that they are perceived to be safer and more natural than products from other nations. This presents a challenge in that the widespread adoption of GM crops in Australia could potentially place Australia's reputation for natural production in jeopardy. The paper reports on consumer survey data from major Asian markets that presents a confusing picture about consumer acceptance of GM foods. It generally appears that Asian consumers have a relatively high level of acceptance of GM foods compared to consumers in places like Europe, but that the level of acceptance amongst Asian consumers appears to decrease as the level of education and wealth of consumers increases. This suggests that even if Asian consumers currently appear to readily accept GM foods (predominantly because they are less expensive) this may change in the future as consumer education levels and wealth increases.

The sixth and final paper by Grahame Coleman and co-authors examines issues of consumer concerns about animal welfare. Many of these arise in response to new technologies or more intensive production systems that have been adopted, especially in the pork and poultry industries. The paper has some interesting parallels to some of the earlier papers, in particular the observation that the opinions of consumers about animal welfare standards in different sectors seem to be related to the attitudes of animal welfare groups, rather than to individuals' personal knowledge about animal production systems.

The papers in combination highlight that, irrespective of the science, it is consumer attitudes and public opinion that ultimately determine the scope of agriculture's 'social licence to operate.' Reliance on science alone as a basis for the justification of a practice or a technology is unlikely to be successful, and much more comprehensive and encompassing communication strategies are required between the agriculture sector and the community.