Public attitudes to GM food

Public concern can often be a stumbling block to successful innovation, particularly when the underlying science breaks new ground. This does not just affect peoples' readiness to consume new products, but may also affect the regulatory environment. Thus, partly because of such concerns EU legislation for the approval of genetically modified crops has been quite restrictive, hindering their development in the EU.

We take no stance on GM food, but rather look at attitudes in the EU to two different types of GM with respect to apples. Both involve the introduction of genes to make them resistant to mildew and scab. The first is a gene that exists naturally in wild/crab apples. This is an example of what is called cisgenesis. In the second case the gene is from another species such as a bacterium or animal, and it is an example of transgenesis.

Our data is based on a Eurobarometer survey carried out in 2010 of 15,650 people in the EU. People's attitudes tend to be driven by fears of risk and hopes of gain. But quite separate to risk and gain are the perceptions that the technologies 'are not natural'. Evidently people are disturbed, when science takes us away from what is perceived as following the laws of nature. People are also concerned, when they perceive a potential adverse impact on the environment.

57.1% of respondents wished to see cisgenesis (apple to apple gene transfer) encouraged compared to just 31.4% for transgenesis. Clearly, people are more worried about having animal genes in their apples than genes from wild apples. These attitudes differ systematically with gender, level of education, home background, size of town and across different countries. This finding goes beyond correlation. Econometric analysis suggests that support for cisgenesis is significantly greater for men, and increases with an individual's education and prosperity. Religion is particularly important, and Muslims, Catholics and Orthodox Christians are significantly less approving than others.

As regards transgenesis, people are more united in their disapproval and there are fewer divisions along religious lines. But more educated people tend to be more approving as do men and the more prosperous, whilst older people tend to be less approving.

Some results illustrate the impact of gender and education. Compared to the 31.4% who approved (By approving we mean that they wish to see the technology encouraged to some degree) of transgenesis overall, only 27% of women did so. With respect to the better educated, 39.4% approved, 38.2% of those who studied science approved, whilst having a parent who studied science increased approval to over 43%. These differences, although slightly smaller, are also present for cisgenesis.

This suggests that increasing people's knowledge and understanding of scientific issues would increase the support for GM foods, and possibly other technologies in the future. However, these

are technical issues and thus, many need to rely on the opinions of those they trust, religious leaders in some cases, experts, scientists and governments in others. A scientific background may, thus, impact on approval both by increasing knowledge and by increasing trust in scientists. Trust and confidence in the State to properly regulate such technologies may also help to explain the substantial differences between countries.

The results emphasise that people are different and it is too simplistic to talk of 'the public's' attitudes to GM. But equally, GM is not the same in people's minds, they are much more willing to contemplate cisgenesis than transgeneis, suggesting that the regulations should be different for the two technologies. Finally, the results also suggest the importance of religious leaders in forming attitudes even well into the 21st century.

Publication

Public attitudes to GM foods. The balancing of risks and gains.
Hudson J, Caplanova A, Novak M
Appetite. 2015 Sep