

Labelling of Genetically Modified Foods in India

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The central government has made it mandatory to label all genetically modified foods sold in a packaged form, but the regulation does not specify the tolerance level or the range of products it will cover. Much depends on these factors, including the mechanisms for verification, their cost and the market outcome. Without fine-tuning, the regulation will be hard to enforce, given that the labelling process is costly and complicated.

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In June 2012, the Ministry of Consumer Affairs, Food and Public Distribution notified mandatory labelling of all genetically modified (GM) foods sold in a packaged form – “Every package containing the genetically modified food shall bear at the top of its principal display panel the words ‘GM’”. The regulation has come into force from 1 January 2013. India had been considering introducing a labelling policy for GM foods for a couple of years. In 2006, a recommendation from the Ministry of Health proposed mandatory labelling of all GM foods. This article comments on the potential economic implications of the new regulation.

In its present form, the regulation seems incomplete for two reasons. One, it does not specify the tolerance level (the maximum threshold level above which a food would be regarded as GM). The tolerance levels in other countries range from 0.1% to 5%. Two, it does not mention the

scope of the regulation. There is a wide variation possible in the range of products that are covered under a labelling regulation. In a narrow form, the regulation could be limited to products that have detectable levels of GM content, such as primary products, fresh and raw produce. The scope can be expanded to include foods that are produced from GM organisms even though the foods themselves do not contain detectable levels of transgenic protein. Examples of such products include highly processed products derived from GM ingredients such as edible oils, additives and flavours, and meat and animal products fed with GM feed.

The scope of labelling also automatically implies the verification mechanisms that need to accompany labelling. If labelling is required only for foods with detectable levels of GM ingredients, then verification of non-GM status can rely on testing the final product for genetically modified protein or DNA. Detection methods work best with fresh raw foods. However, if labelling is extended to processed foods where existing testing mechanisms cannot detect the transgenic DNA accurately or at a reasonable cost, then compliance for these products will require evidence of “identity preservation”. An

identity preservation system requires production, processing and distribution systems where the identity of the food or trait is preserved. This could result in segmented channels of production, processing and marketing. In the absence of clarity on the threshold levels and scope of the regulation, it is not feasible for the authorities to implement it. It is expected that refinements are coming.

Edible Oils and Imported Foods

If the regulation is intended to have a wider scope, all branded and packaged cottonseed oil, imported soy oil, and all packaged edible oils blended with these two oils would immediately come under its net. This is because cottonseed oil is the only food item in India that is derived from GM seeds, and is domestically produced and consumed. Further, although India does not produce GM soybeans and does not allow the import of GM soybeans, it does import soybean oil from large GM food-producing countries such as Argentina, Brazil and the US. Other than edible oils, products likely to be affected by the labelling policy are imported foods such as breakfast cereals containing cornflakes, tortilla chips, multi-grain crackers, sweet corn, soy milk, cookies and chocolates containing soy lecithin, and so on. If the regulation, however, has a narrower scope, it will be applicable only to imported products as no GM food crop has yet been approved for commercial cultivation in India.

The focus of the regulation on packaged foods, naturally, restricts the purview of the regulation. Since it is not applicable to unprocessed or unpackaged products, all agricultural produce and edible oils sold in loose form are not covered by it. This would leave the majority of agricultural produce outside the regulatory, net as more than 99% of food and grocery in India is sold informally through street hawkers and small and large fixed shops. Retail chains would have to decide whether or not to package fruits and vegetables. Thus, Bt brinjal, if approved for commercial cultivation, does not have to be labelled. Clearly, the labelling policy caters to select consumers. That not only increases the chances of its implementation, but also limits the benefits.

Compliance with the labelling law will require that an unlabelled food is non-GM. While the legal obligation of the GM food producer ends with applying a label, suppliers of unlabelled foods would have to supply identity-preservation documentation to show that their product is non-GM. This implies that the suppliers of these foods have to invest in segregation of products and marketing channels to preserve the identity of their products to verify their claim. Various studies estimating identity-preservation costs indicate them to be in the range of 8% to 16% of the product price. Some of these costs will be passed onto consumers in the form of higher product prices.

Product labelling of any kind is meant to provide information to consumers so that they can make informed choices. Food companies that have to display this label, however, can also react to the labelling policy in their choice of products and ingredients. Food producers and marketers that may be using GM ingredients have to decide whether to keep their products as such and label them as GM, or change ingredients or products to avoid labelling. For instance, the imposition of trans fat labelling in many countries, such as the US and also India, has resulted in changes of ingredients towards alternatives without trans fats to satisfy consumer demand.

Interlinked Process

The chain reaction between labelling requirements, consumer perception, and ingredient choice is key to understanding the market effects of GM food labelling. Since there are costs associated with segregation of products, this will happen only if there is a critical minimum market size for a higher-priced non-GM product. In other words, product segregation will take place only if the segment of consumers willing to pay more for a non-GM variant is sufficiently large, so that it is profitable to differentiate products. The labelling policy by itself cannot ensure product segregation or greater consumer choice.

Bansal and Gruere (2012) analyse the economic implications of introducing mandatory labelling of GM food in India in the case of cottonseed oil and soy oil. They argue that the economic impact of

labelling depends on the market outcome it generates, which in turn depends on three factors – the potential consumer reaction to a product with or without a label; the costs and market adjustments associated with the labelling policy, and the public enforcement effort.

They find no evidence of the emergence of non-GM soy or cottonseed oil in the markets surveyed in India, indicating that producers do not have incentives to segregate products. That is, the willingness to pay a price premium for GM-free products is insufficient to cover marketing and segregation costs. It will be interesting to see if the mandatory labelling policy changes the market outcome. This may happen if some consumers are weakly GM averse, that is, they switch to non-GM alternatives on seeing a GM label. In addition, some consumers may avoid potential GM products altogether.

Due to the mandatory labelling policy, GM-averse consumers could move to other edible oils. To avoid GM labelling, food companies may also switch from soy oil ingredients. This would reduce the revenues of the soy oil industry and could depress the price of soy products to the benefit of other edible oils. Domestic edible oils could benefit at the cost of imported oils. A very large proportion of soybean oil is mixed with other oils to obtain blended refined oil, or vanaspati, which would also have to be segregated. The entire process and the bulk-handling nature of commodity trade would be affected, which would increase the costs of production. This would also potentially increase the observed under-capacity of the edible-oil processing sector.

Enforcement Challenge

The labelling of edible oils would also create important enforcement challenges because of the impossibility of testing at the final product stage. This means that if GM and non-GM alternatives are marketed, a viable documentation system of some sort would have to be introduced. Thus, big cottonseed oil or soybean oil importing companies may prefer to label their products regardless of the content. But smaller oil units would not do so.

The market outcome could be different for staple crops such as rice. If India

approved production or import of GM rice, the majority of small producers would continue to sell co-mingled rice. However, big companies selling packaged premium-priced rice that are targeting consumer segments willing to pay more may very well look at this as an opportunity to further differentiate their products. Indeed, premium brands in India are already advertising non-GM aromatic rice and selling it at a premium price. This misleading claim (there is no GM rice in India) reveals the interest of companies in keeping their rice non-GM.

Even with a restricted focus, the new regulation would likely be imperfectly enforced. Due to segregation costs, there is a high risk of mislabelling – unlabelled GM products and non-GM products labelled as GM. In other words, labelling involves a high cost of entry, a difficult

transition, and the setting up of a relatively costly system in the long run, with no guarantee of success,

Interestingly, a similar initiative was taken in California, in the US, a country where GM crops are common. On 6 November 2012, Californian voters had to decide for or against Proposition 37, which, if passed, would have required mandatory labelling of foods produced from GM crops. The California initiative proposed to implement the strictest threshold levels, and planned a zero-tolerance policy for the accidental presence of small amounts of GM substances, even if the US government has approved the GM material for human consumption. Given GM crops are common in the US, such strict tolerance levels would have made it impractical for farmers and the food industry to comply with the regulation. Significant funding

poured in both for and against the initiative. While giant bioengineering companies like Monsanto and Dupont spent huge amounts of money to defeat the proposition, the owners of the biggest organic brands in the country supported it. Voters rejected the proposed labelling law by six percentage points.

Finally, a word on scientific evidence on GM foods. Scientists claim that there is no science-based justification for mandatory labelling of GM food because there is no evidence that such foods pose any risks to human health. Recently, the American Association for the Advancement of Science formally came out against labelling GM foods.

REFERENCE

Bansal, S and G Gruere (2012): "Implications of Mandatory Labeling of GM Food in India: Evidence from the Supply Side", *Food Policy*, 37: pp 467-72.