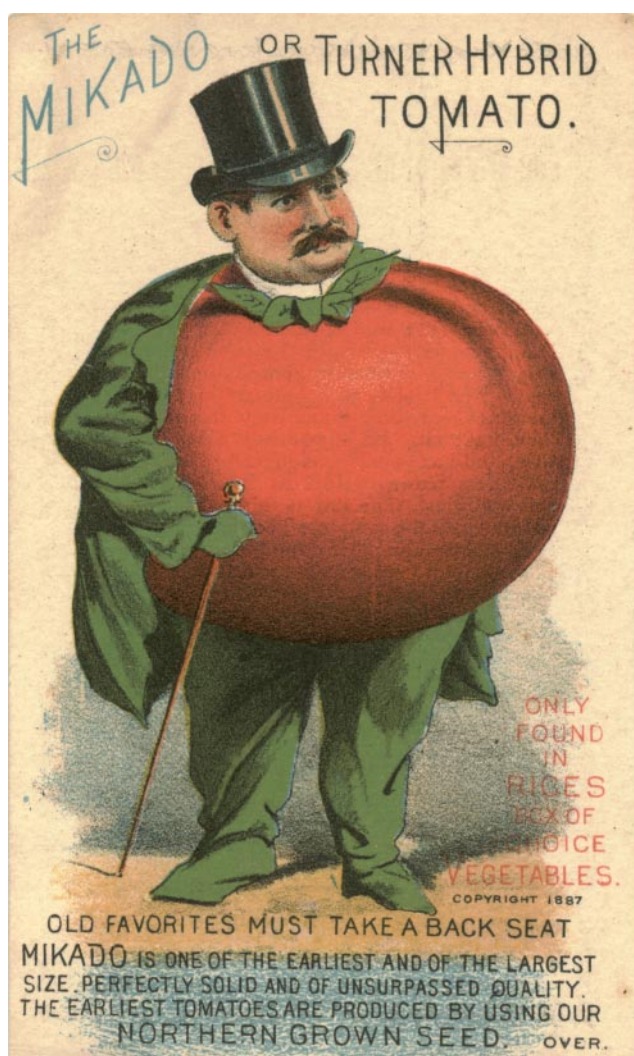


Hard to Swallow: Do Foods Containing “Genetically Modified Organisms” (GMOs) Need Warning Labels?

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A MAJOR FOOD chain has decided recently to label all foods containing “genetically modified organisms” (GMOs). This is a remarkable marketing ploy, which, if carried out honestly, would result in such a label on all foods on its shelves.



American trade card for Rice's seeds, featuring The Mikado or Turner Hybrid Tomato, 1887; chromolithographed advertisement. Photo credit: Amoret Tanner Collection/The Art Archive at Art Resource, New York, NY.

Modern wheat was domesticated ~14,000 years ago. The free-threshing phenotype, which made domestication possible, is a result of a mutation in a transcription factor called *Q²* (1). This mutation was introduced into hexaploid *Triticum aestivum*, the basis of all contemporary bread, by conventional breeding. Why not, then, label all bread as GMOs? All potatoes? All tomatoes—such as the “Turner Hybrid Tomato”? All foods that have been genetically modified by conventional breeding?

The target of the labeling frenzy is foodstuff that was created by the precise insertion of one or more genes using recombinant DNA technology, a methodology that in contrast to conventional breeding, results in a plant or animal containing a known number of new genes with known products. Why focus on the method by which the organism was created rather than the properties of the organism itself? A National Research Council study addressed this question more than 20 years ago in the context of concern about field-testing plants containing recombinant DNA.³ That study recommended strongly that the properties of the plant, rather than the method used to create it, were the key to constructing a useful policy (2).

California seems to become a focus of attention by groups whose political interests exceed their scientific understanding. Some years ago, these enthusiasts destroyed quite good experiments in which strawberry plants containing a gene expressing an antifreeze protein were being tested to determine if that protein might provide some protection against frost damage. They tore up the experimental plots, bringing that work to an end.

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² Bread wheat is one of the most intensively engineered plants in the history of agriculture. This paper describes the complex *Q* locus, whose mastering by ancient farmers made modern agriculture possible.

³ The authors constituted a committee, chaired by the late R. H. Burris, professor at the University of Wisconsin, an expert on nitrogen fixation, without any stake in transformation of plants with recombinant DNA.

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That level of “concern” for the environment became manifest in the discussions about a California initiative to require labeling of foods that contain genetically engineered ingredients. The political component of this initiative becomes evident as soon as one realizes that any and all food contains genetically engineered ingredients. The derogatory “GMO” term stems from ignorance—a failure to recognize that transgenic plants, for example, have been created by procedures that are more precise and controlled than conventional breeding.

The political nature of this concern can be illustrated by the history of animal feed use in Europe, particularly in France. Thanks to extremely noisy advocates, it became impossible for French producers of beef and pork to import soybean meal from the United States. (Soybeans in the United States are largely engineered to be resistant to herbicides that kill weeds.) Instead, the French animals were fed animal parts from England. Then came the scare of Scrapie-related disease that could be communicated, in principle, by infected animal parts from England. Lo, one door swung shut, and another opened. Overnight, U.S. meal from genetically engineered soybeans was permitted to be imported and used to feed animals. Guess what? No French animals have suffered to date, and that is a grand experiment going on for years. And the imported soybean meal is not labeled GMO.

The current labeling dustup, metastasizing from California, has reached into the peaceful confines of the respected Academy of Nutrition and Dietetics, whose major business is the certification of dietitians as well as providing useful advice on diet and nutrition to hospitals and other clients. Before weighing in on the label

controversy by supporting or objecting to the California-labeling initiative, the academy wisely appointed a committee to review the scientific facts and engaged a distinguished professor from the University of California at Davis to write a report, which is expected to be widely quoted and influential. However, one member of the review committee, objected because of the presence on the committee of two persons who had a “conflict of interest.” One had received an award from Monsanto, and the other is a vice president of the International Food Information Council, which is financed, in part, by agri-businesses (3).

There is no need to label foods thought to contain GMOs, whatever the labelers mean by GMO. Better to tell the prospective purchaser how much salt that food contains. Salt presents a clear and present danger; GMOs do not.

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