

Does Biotechnology Put The Food Supply At Risk?

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contribution from pork to total calories consumed per serving, calories consumed from fat and calories consumed from saturated fat. The ratio of saturated to unsaturated fatty acids is not changed in response to somatotropin administration (Prusa, 1989). Cholesterol concentration in fresh pork (muscle) is not changed when somatotropin is given even though fat content is markedly reduced. This is explained by the fact that the bulk of the cholesterol in meat is associated with muscle cells (fibers) as a vital, functional component of the cell membrane.

Results from the five studies in which porcine somatotropin has been administered to growing pigs here at Cornell have been confirmed at at least twenty other universities or research institutes and in many industry efficacy trials conducted here in the United States, in Australia, in several European countries and even in China.

Porcine somatotropin represents one example of biotechnology application in animal agriculture which markedly improves efficiency of food production and markedly reduces fat content of a food stuff. It improves the economic competitiveness of an animal product (pork) in the marketplace and maintains the quality of characteristics of a food which we in the U.S. and millions of people around the world have come to enjoy. This is accomplished without any increased risk to the consumer, without any increased risk to the producer and without any increased risk to the animal.

Other biotechnology approaches for improving production efficiency and nutrient composition of foods are being investigated. These include the following:

1. Administration of growth hormone releasing factor, the naturally occurring hormone which stimulates secretion of growth hormone (somatotropin) from the pituitary gland, to increase levels of growth hormone in the blood.

2. Immuno-neutralization of animals against the hormones or receptors of hormones which decrease the secretion of growth hormone by the pituitary.

3. To utilize the animal's own immune system to produce proteins which will influence muscle growth and fat deposition in a manner similar to what is seen with somatotropin administration.

4. Gene transfer or gene insertion techniques may be used to allow the bacteria in the rumen (stomach) of cattle and sheep to more completely digest cellulose, the form of most fiber in most plant food stuffs. Humans cannot digest cellulose, only ruminant animals can.

5. Gene transfer or gene insertion may someday be used to improve disease resistance of farm animal species.

Although efficacy and safety of these potential applications of biotechnology have not been reviewed by the FDA, it is anticipated that FDA will approve use of bovine somatotropin in lactating dairy cows and will probably approve use of porcine somatotropin in pigs. These forms of biotechnology present no risk to

the consumer, producer or animal. This latter statement is well supported and documented in the scientific literature (peer-reviewed published results of independent studies conducted at major universities in the U.S. and around the world), in extensive documents, some in excess of 30,000 pages, submitted to the U.S. Food and Drug Administration seeking approval for commercial use as an animal drug and in proceedings of International Symposia organized to assess the impact of adoption of porcine somatotropin on the pork industry, on the environment and on the consumer. Many aspects of potential risk associated with the use of porcine somatotropin have already been thoroughly tested in the case of requests for approval of bovine somatotropin (bST) in lactating dairy cows.

Before approval of a new animal drug is granted the FDA must evaluate and verify claims of efficacy of the drug, safety of the drug to the animal, safety of the drug regarding human consumption of food or food products derived from the treated animal and safety to the environment. All negative claims made by consumer and environmental activists Samuel Epstein (1989) and Jeremy Rifkin (1989) have been resoundingly refuted by the FDA (Chesmore, 1990). Careful review of these negative claims, which have been published in several editorial columns clearly reveals that these claims are not supported by good scientific evidence. Although they are unfounded, often gross distortions of public information, their seriousness cannot be taken lightly.

ly. Consumers are interested in and concerned about food safety. Public perception is of critical importance if somatotropin or any new technology is to be effectively implemented. This biotechnology and any other must be understood and perceived as safe and beneficial by the consumer and the farmer before adoption will take place. The media can play a pivotal role in public response to this new technology. It is appropriate that they do so because until a product is approved by the FDA our agricultural extension programs cannot and do not take a proactive stance in promoting use of a beneficial management strategy involving an animal drug. Public discussion is warranted, but this discussion must not fall prey to those who promote their own hidden agendas or self-serving ideas. The role of the media to fill a need for education, with a concern for public perception, must be exercised with care and rigorous investigation so that our biotechnology efforts are not snuffed out for unwarranted political, social or economic reasons. It is better to print no story at all than to unwittingly promote "scare tactics," half-truths or exaggerations. No successful research scientist depends on unrepeatable,

biased or tainted results from ill-conceived or poorly designed experiments for personal gratification. This would undoubtedly equate to professional suicide. If the meaning of new information is not clear, explanations must be sought from more than one source. If the claims are extraordinary, be skeptical. If they are extraordinarily negative or damaging, then investigate credibility. If credibility is suspect, look to recognized experts for a second or third opinion. A wealth of exciting new knowledge is provided by the daily activities of thousands of qualified scientists, however, it can quickly and easily be hidden in the cloud of misinformation perpetuated by one unqualified individual.

I believe that the biotechnology we are attempting to apply to food producing systems does not put our food supply at risk. The presence of conservative, government regulatory agencies provides us assurance that this is so here in the U.S. I can think of no better system anywhere else in the world that is better equipped to evaluate food safety than the agency network we have here in the U.S. Let's not destroy what took decades to develop.

Bus Tour Planned To Holstein Convention

STATE COLLEGE (Centre Co.)—The Pennsylvania Junior Holstein Association is sponsoring a bus to the 1990 National Holstein Convention in Charleston, SC.

The bus will leave Pennsylvania on Saturday, June 23, and return on Thursday, June 28. Plan to visit King's Dominion Park on the way down. Arrival in South Carolina will be Sunday afternoon.

A wide variety of activities have been planned by the South Carolina Junior Holstein Association.

These include a tour of the Boone Hall Plantation, a shelling and crabbing exhibition, Dairy Skillathon, Beach Party, Dances, Junior Awards Program, and a number of other activities. Return is set for Thursday, June 28.

Any Junior Holstein member interested in going on the bus trip should call the Pennsylvania Holstein office for more information and a detailed itinerary of the bus trip at (814) 234-0364 or write: PA Holstein, 839 Benner Pike, State College, PA 16801.

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