

Perspectives: Using Elements of Risk Communication to Develop Food Biotechnology Education Programs for Extension Family and Consumer Educators

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As biotechnology increasingly becomes part of our daily lives, it is important that the public be informed about this controversial technology. The challenge of explaining such a highly technical subject in a scientifically sound way can be daunting, especially in a social environment where the subject is surrounded by media hype. Within the Cooperative Extension Service, family and consumer educators (FCEs) can play a pivotal role in helping consumers make sense of food biotechnology and all of its complexities. In order for FCEs to do their job well, Extension specialists, who guide program development for state Extension programs, must provide solid training and excellent materials to enable FCEs to deal comfortably with the array of issues and concerns of consumers.

Extension specialists need to take into account several issues when developing a food biotechnology education program. The purpose of the program should be to provide scientifically sound information about biotechnology and its uses, provide answers to most frequently asked questions, and provide unbiased educational materials. A fully developed curriculum should also have a solid foundation in adult education. Finally, Extension specialists would be well advised to use the approach of "risk communication," which has been effectively used for many public health issues.

Risk communication is an interactive process of exchange of information and opinion among individuals, groups, and institutions. Incorporating elements of risk communication into a biotechnology education program is an important component of program development. Elements of risk communication include

- setting realistic goals,
- respecting all views,

- ensuring balance and accuracy in messages,
- addressing the audiences' perspectives and concerns in a manner that is meaningful to them, and
- fostering competence in the messenger.

Setting realistic goals. The goal of biotechnology education, as offered by Extension, should be to improve or increase the knowledge base of accurate information that consumers can use to make their own decisions. Realistically we cannot, and should not, expect biotechnology education to lead to consensus about this issue. People do not all share common interests and values. Simply providing them with information, even if it is research-based, will not necessarily lead them all to the same conclusion. The goal of Extension is to educate consumers -- not to persuade them.

Respecting all views. The consumer has a right *not* to accept biotechnology. Educators, as well as scientists, must be careful not to belittle consumers because they do not accept or are fearful of this technology. Some educators and scientists assume that if lay people only knew as much as the experts, they would respond to hazards in the same way. This technology is difficult to understand, particularly for the lay public.

Also, one cannot assume that all activist groups have purely political motives. Many activist groups believe they are justified in their convictions based on their understanding of the science of biotechnology. Their methods of communicating information about biotechnology should be seen as no more problematic in a democracy than the biotechnology industry's attempt to be proactive for their interests. We need to acknowledge the right to express a viewpoint even though we might not agree with it.

Ensuring balance and accuracy in the message. A biotechnology education program should not only present the benefits but also the risks. Lack of data and areas of significant disagreement among experts should be disclosed. One of the university's roles is to discover the truth through scientifically sound, research-based methods. Within the university, the role of Extension is to share this research-based information with our citizens. This means we are obligated to share information not only about the benefits but also the risks or the lack of knowledge about the risks.

Addressing consumers' perspectives and concerns in a manner that is meaningful to them. Ideally, one should use language and concepts that a consumer already understands. Research meetings are the place to discuss biotechnology in sophisticated terms. Scientific terminology, although accurate, can be very confusing to consumers. Focus groups conducted in

Canada indicated that consumers react negatively when unknown scientific terminology is used to convey information about biotechnology. For example, the term "genetic" was often misinterpreted and frequently caused concern. If the goal is to educate so that consumers can decide, one does not want to confuse or frighten them unnecessarily.

In the International Food Information Council publication, *Food Biotechnology: A Communications Guide to Improving Understanding*, there is an excellent piece titled "The Language of Food Biotechnology" listing words to use and words to lose. Consumer understanding about biotechnology could change dramatically if it was discussed in lay terms, such as those in this publication.

Finally, there are many ways to reach consumers with biotechnology information: face-to-face interactions, direct mailings, advertising, hot lines, presentations or groups, press conferences, television or radio interviews, and newspaper or journal articles. Each medium has its advantages and limitations. Television reaches a large audience but is expensive. Newspapers can present longer, more complex messages but are not as vivid and immediate in emotional impact. Face-to-face interactions and hotlines are more intimate and can be tailored to meet the individual's need but are expensive because of the time invested. The characteristics of each type of communication medium affect the type of educational messages that can be effectively transmitted. However, a combination should be used to adequately reach consumers with information about biotechnology.

Fostering competence in the messenger. FCEs are experts in communicating information in a way that is meaningful and useful to the consumer. In North Carolina, for example, our 101 county Extension centers have a 70+ year history of working in the area of food safety education, particularly with consumers. On average, county Extension agents answer between 30 to 45 consumer food safety calls *each* month. In most parts of this state, the primary, and often only, source of consumer-based food safety information is the county Extension center. Biotechnology education would be a natural addition to existing food safety and nutrition education programming.

However, most FCEs do not have a biological science or a food science background and so would not be prepared to debate the technicalities of biotechnology. Nevertheless, they would be excellent at sharing consumer-based information with the public. To do so, FCEs will need comprehensive training about issues such as the science of biotechnology, its current applications, consumer acceptance, and other current issues related to biotechnology. Extension specialists should not simply provide FCEs with materials. They must provide in-depth, on-going training in conjunction with the dissemination of educational materials. If an agent does not have current and comprehensive knowledge about the basics of biotechnology, the quality and, hence,

effectiveness of county-sponsored biotechnology education programs will be significantly affected.

Most within the university scientific community would agree that the benefits of biotechnology far outweigh its risks. However, when developing biotechnology education programs we need to remind ourselves that if we are true to our mission, we must stay in the middle and remember to state the facts, not our opinions.

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