

of dollars to the cost of the development of new crops, and could lead to a complete reorientation of current breeding programs.

Plant breeders are now able to manipulate many different characters in a crop plant including its yield, resistance to disease and insects, ease of mechanical harvesting, processing, quality, color, flavor, and texture. The new FDA procedures would require that nutritionally deficient varieties be reported to the FDA, and that advertising reflect the extent of that deficiency. Breeders fear that such products, if the trend continues, will one day be barred by law from the market. Since a new plant variety may take 10 years to develop, at a cost of up to \$1,000,000 (in the case of a complex wheat variety), the prohibition of such a crop variety could have a disastrous impact on members of the commercial plant breeding industry. Senti and Spiher claim that the proposed monitoring requirements would not be financially onerous for plant breeders.

The American Seed Trade Association, the Crop Science Society of America, and the National Council of Commercial Plant Breeders have all officially protested the new procedures, arguing that even the current regulation and proposed guidelines are unnecessary and that they provide insufficient guidance on implementation.

Not all agriculturists, of course, are opposed to the new procedures. Task force member Stuart Younkin, vice president for agricultural research for the Campbell Soup Company, supports them. The National Canners' Association has so far taken no official position. Younkin's company, however, already monitors for many of the nutrients. Moreover, Campbell's is a food processor as well as a plant-breeding firm; processors tend to support the regulation and guidelines, because higher nutrient content in raw products is consistent with the FDA's voluntary program of nutritional labeling. The monitoring would take some of the pressure for greater supply of highly nutritious food off the processors and shift it to the growers.

Task force member Allen Trotter, a plant geneticist with the Asgrow Seed Company, says he believes the FDA acted precipitously by taking action without a thorough consideration of the direct and long-term implications of the new policy on the plant breeders and their ongoing programs.

Several members of a National Academy of Sciences-National Research Council Task Force on Genetic Alteration in Food and Feed Crops agree with Trotter's assessment. The NAS-NRC task force was convened to study a variety of concerns, including the FDA's proposed action, to decide whether further study and consideration was warranted. The group has strongly recommended that a 2- to 3-year study be carried out, which would include many of the concerns raised by the industry. One academy member familiar with the task group's work and recommendations said that study would definitely include a cost-benefit analysis of the new regulations on breeders, especially the smaller companies, and the impact of FDA's new policy on the market supply and cost of food. A member of the NRC task force said it would be "inconceivable" for the FDA to implement its regulations before the NRC had begun its study.

Although the proposed guidelines have been widely circulated within the plant breeding community, they will not become official unless and until they are approved by the FDA Commissioner. If the task force guidelines are not endorsed, however, plant breeders will be left without guidance for the implementation of the FDA's vague regulation and the FDA will have to convene yet another task force to devise another set of guidelines for its implementation.

Most nutritionally oriented consumer groups have not yet reacted to the proposed guidelines, but Rodney Leonard, executive director of the Community Nutrition Institute, supports their implementation. Leonard believes that the monitoring system would provide vital information about trends in nutrient and toxic content of food needed to formulate rational nutrition policies. "The guidelines represent a healthy trend," said Leonard. He believes nutrition should be a factor plant breeders consider in their programs. "We should not be eating vitamin and mineral fortified cardboard," said Leonard.

Whether or not the FDA so intended, its regulation and proposed guidelines have opened up a new debate, one prompted by increasing public interest in consumerism and good nutrition.

—JUDITH MILLER

*The author is the Washington correspondent for The Progressive magazine.*

## APPOINTMENTS

**Edmund F. Ackell**, vice president for health affairs, University of Florida, to vice president for health affairs, University of Southern California. . . . **Arthur J. Slavin**, chairman, history department, University of California, Irvine, to dean, College of Arts and Sciences, University of Louisville. . . . **Thomas A. Griffy**, professor of physics, University of Texas, Austin, to chairman, physics department at the university. . . . **Claes H. Dohlman**, vice president, Retina Foundation, appointed chairman, ophthalmology department, Harvard Medical School. . . . **Jerry R. Shipman**, graduate student, Pennsylvania State University, to chairman, physics and mathematics departments, Alabama A & M University. . . . **John T. Vaughan**, professor of large-animal surgery and medicine, Cornell University, to chairman, large-animal surgery and medicine department, Auburn University. . . . **Bernard H. Marks**, chairman, pharmacology department, Ohio State University, to chairman, pharmacology department, Wayne State University. . . . **Roy Wagner**, associate professor of anthropology, Northwestern University, to chairman, anthropology department, University of Virginia. . . . **Naim Khazan**, chairman, pharmacology department, Merrell-National Laboratories, to chairman, pharmacology department, School of Pharmacy, University of Maryland, Baltimore. . . . **Harlan Lane**, professeur en Sorbonne, to chairman, psychology department, Northeastern University. . . . **I. Robert Lehman**, professor of biochemistry, Stanford University, to chairman, biochemistry department, School of Medicine, Stanford University. . . . **Harry S. Soroff**, professor of surgery, Tufts University School of Medicine, to first chairman, surgery department, Medical School of the Health Sciences Center, State University of New York, Stony Brook. . . . **Kenneth A. Ames**, dean, School of Education, Gonzaga University, to dean, School of Education, St. Cloud State College. . . . **Lou Kleinman**, associate dean, School of Education, New York University, to dean, School of Education, University of Miami. . . . **Fredrick P. Zuspan**, chairman, obstetrics-gynecology department, University of Chicago, to chairman, obstetrics-gynecology department, Ohio State University.