National Agricultural Biotechnology Council

NABC news

Fall 2001 no. 23

Providing an open forum for exploring issues in agricultural biotechnology

NABC'S PRINCIPAL OBJECTIVES ARE TO:

- *provide an open forum for persons with different interests and concerns to come together to speak, to listen, to learn, and to participate in meaningful dialogue and evaluation of the potential impacts of agricultural biotechnology*
- *define issues and public policy options related to biotechnology in the food, agricultural, biobased industrial product, and environmental areas*
- *promote increased understanding of the scientific, economic, legislative, and social issues associated with agricultural biotechnology by compiling and disseminating information to interested people*
- *facilitate active communication among researchers, administrators, policymakers, practitioners, and other concerned people to ensure that all viewpoints contribute to the safe, efficacious, and equitable development of biotechnology for the benefit of society*
- *sponsor meetings and workshops, and publish and distribute reports that provide a foundation for addressing issues.*

Ralph W.F. Hardy, President
Allan Eaglesham, Executive Director
Susanne Lipari, Associate Coordinator
Boyce Thompson Institute, Room 419
Tower Road
Ithaca, New York 14853
607-254-4856 tel 607-254-1242 fax
NABC@cornell.edu
http://www.cals.cornell.edu/extension/nabc

Letter from the Chair . . .

Wow! To say that agricultural biotechnology is a hot topic would be an understatement. Just recently, ag biotech was the focus of a two-hour documentary entitled "Harvest of Fear" produced by *Frontline* and *Nova* on PBS. It covered all sides of the biotechnology debate in quite a comprehensive fashion. The United States Senate increased the visibility of biotechnology by declaring May 13–20 as National Biotechnology Week, recognizing the importance of biotechnology in the development of agricultural, medical, industrial, and environmental products. This declaration led many public officials, community leaders, researchers, professors and teachers across the country to actively promote a better understanding of biotechnology in their communities and classrooms. On the international front, the United Nations entered the biotechnology debate this Spring, releasing the recommendations of the Food and Agriculture Organization (FAO) and World Health Organization (WHO) regarding allergenicity testing of foods from crops modified through genetic engineering. These recommendations are aimed at assuring consumers that such foods do not pose a significantly increased risk of allergenicity. The complete report can be found at http://www.fao.org/WAICENT/FAOINFO/ECONOMIC/ESN/gm/allist.htm. Another report, commissioned by the United Nations Development Program (UNDP) entitled "Human Development Report 2001 – Making New Technologies Work for Human Development," provided an analysis of the potential of biotechnology and other technologies to contribute to reducing world poverty. This report urges greater public investment in research and development to ensure that biotechnology can help meet the agricultural needs of the world's poor. For the full report: http://www.undp.org/hdr2001.

W. Randy Woodson
NABC Chair 2001–2002

Perhaps no single issue related to agricultural biotechnology in 2000–2001 captured the attention of growers, processors, consumers, and the media around the world as much as did the StarLink "event." The presence in food products of StarLink corn, which carries the Cry9C protein from *Bacillus thuringiensis*, led to an across-the-board recall of these products from the market. StarLink had been approved by the EPA for animal feed, but not for human consumption due to questions about possible allergenicity. The Centers for Disease Control investigated reports of twenty-eight people who filed adverse-event reports after eating corn products containing the Cry9C protein. The CDC found no detectable amounts of Cry9C-specific antibodies in these individuals. Whereas the CDC noted that these data do not rule out the remote possibility of an allergic reaction to Cry9C protein, they found no supporting evidence in any of the people tested. This report can be found at http://www.cdc.gov/nceh/ehhe/Cry9Creport/executivesummary.htm.

While conversation about agricultural biotechnology continues to increase public awareness, political discourse, and government oversight, it is clear that the current products on the market have achieved major acceptance by US farmers. The USDA National

Cont. on p. 8

NABC 2001: A Summary

Steven G. Pueppke
University of Illinois
Urbana, IL

The topic of NABC 2001, which wrapped up its three-day run in Chicago on May 24, was "High Anxiety and Biotechnology: Who's Buying, Who's Not, and Why?" The organizers had some anxiety of their own when they learned that the meeting was to be targeted by protestors, and those groups did appear on the first day of the conference. But all was peaceful, and the demonstrators helped to attract the media. Several interviews were provided and broadcast both locally and on an agricultural television network. NABC, of course, welcomes as attendees all those who wish to speak, to listen, and to learn about agricultural biotechnology issues.

Each plenary session functioned as a lens, focusing the discussion (no pun intended) on a single aspect of the debate. We began with *Lessons to Learn From*, which featured Michael Jacobson from the Center for the Study of Science in the Public Interest (a major consumer-oriented organization), Napoleon Juanillo from the University of Illinois, Joseph Hotchkiss from Cornell University, and Nancy Millis from the University of Melbourne. These speakers set the context for the debate, pointing out that words matter and that scientists don't have all the answers. The audience was fascinated by the lesson from pasteurization: new food technology never comes quickly or easily. And we will not soon forget the application of the precautionary principle to tablets: take your vitamins in alphabetical order, you never know!

Session Two was devoted to the factors that influence the lens of the consumer. Featured were Kerry Smith from North Carolina State University and C. S. Prakash from Tuskegee University. They reminded us that agricultural biotechnology is historically rooted and that consumer perception of risk with foods is no different from the perception of any other kind of risk.

The final and most all-encompassing session emphasized the divergence of lessons. Dave Erickson, a northwest-Illinois farmer, gave us a poignant first-person account of a biotechnology user. Anatole Krattiger, *bio*Developments LLC, made cogent arguments for

Cont. on p. 7

The audience was fascinated by the lesson from pasteurization: new food technology never comes quickly or easily.

NABC 2001, Workshop Report Summary: *The Great Agricultural Biotechnology Debates*

Mary Ann Smith
University of Illinois
Urbana, IL

Colin Scanes
Iowa State University
Ames, IA

The workshop sessions for NABC 2001 were engineered in 'debate' format, to consider the following resolution, "That GM technology is a sound and safe innovation, and should be permitted in the food chain without restrictions." The debate structure was intended to

- engage conference participants as active players in a fast-paced process of discovery, and
- compel conference participants to critically and thoroughly evaluate diverse viewpoints.

Toward these ends, unsuspecting conferees were, upon entering workshop-breakout rooms, immediately assigned to a particular framework position, and were soon called upon to rapidly absorb, adopt, and rigorously defend a stance perhaps contrary to their own deeply ingrained beliefs.

Workshop Session #1 — The Set Up

At the outset, a mock debate was staged, featuring extreme viewpoints on either end of the debate spectrum. Arguments were heard from a land grant university professor who was an advocate of GM technology, versus a English prince/gentleman organic farmer strongly opposed to GM crops, followed by a pro-biotechnology industry representative versus an anti-biotechnology radical protestor from a consumer-advocacy group. While deliberately exaggerated in tone and content, the mock debate introduced the 'Rules of Engagement' for the workshop sessions, and provided a preview to the typical point/counterpoint order of argumentation in traditional debates.

Next, the conferees were divided into four workshop-breakout sessions, each of which was staffed by at least two debate coaches (moderators). Teams were randomly organized to represent each of the following 'positions' with regard to the GM debate:

- pro-GM university scientists
- anti-GM militant environmental "green" group (anti-corporate, anti-multinationals, *etc.*)
- pro-GM large corporate USA/multinational biotechnology industry representatives
- anti-GM consumer advocates in the European Community
- pro-GM farmers in the developing world
- anti-GM organic farmers in the United States
- pro-GM United States regulatory agency representatives
- anti-GM government regulatory agency (non-USA) representatives
- pro-GM politicians
- anti-GM politicians

Teams were invited to draw up 'Top Ten' lists of arguments in favor of, or opposed to (depending on their assigned identity), the stated debate resolution. The brief period of time (10 to 15 minutes) allowed to formulate arguments fostered intensive, cooperative effort and built camaraderie within each team.

. . . unsuspecting conferees were called upon to rapidly absorb, adopt, and rigorously defend a stance perhaps contrary to their own deeply ingrained beliefs.

For the remaining 10 to 15 minutes of the first workshop-breakout session, each 'pro-GM' team exchanged their top ten lists with their counterpart 'anti-GM' team.

Opposing teams now used the time to brainstorm to come up with the best 'counterpoint' arguments to *refute* the top ten arguments proposed by the other team. The opposition teams were not privy to the ten counterpoint-refuting arguments compiled by their challenging debate teams.

Workshop Session #2 — The Outcome of the Debates

In a follow-up session, each of the teams in the breakout groups designated two spokespersons, and abbreviated debates were staged between *pro* and *anti* teams that seemed at opposite extremes of the spectrum with regard to GM issues. The two spokespersons in each team, in turn, made brief speeches to affirm their assigned identity, after each of which they were cross-examined by the members of the opposing team. The strengths of the arguments — some of which might have provided a 'turning point' — were then discussed by the breakout group as a whole. Pitfalls that inhibited serious resolution of opposing viewpoints were documented, as were cases where the arguments were parallel or when they did not address the same points at all.

By general consensus, the debate sequences that were staged during the afternoon breakout sessions were remarkably well orchestrated. Debate-team spokespersons, even those assigned to positions contrary to their own beliefs, provided well constructed, impassioned short speeches.

During each lively debate between two opposing teams, the intensity of the arguments seemed to escalate as the steps in the process progressed. Participants reported that they came away with a new appreciation for the wealth of information and complexity behind some of the opposition viewpoints, which (perhaps) they had previously viewed as fairly one-dimensional. After each persuasive speech and each rebuttal, the spokesperson was typically rewarded with the applause of the broader workshop audience, which further encouraged development of stronger arguments.

The debate coaches agreed that the presentations staged in their breakout sessions provided well balanced mixes of opinions about GM products in the marketplace that spanned the range of rational and irrational attitudes towards GM materials. One debate coach commented, "Our role as coaches diminished the moment the groups understood what their tasks were — as they jumped right into it, and came up with good arguments for their positions. Every individual on each team was throwing in ideas and perspectives, so we had an excellent mix of people who were not afraid to participate."

Some of the most difficult issues to resolve concerned the approval/regulatory process, labeling, and, moral/ethical issues.

Approval/regulatory processes
Based on available data, teams were not able to verify to what extent GMOs are required to undergo regulatory approval in the United States. Pro-biotech literature emphasizes that GMOs are perhaps the most highly scrutinized technology in recent history. The European press argues that the approval process in the United States is shrouded in mystery, and the interconnection between the major regulatory agencies (EPA, FDA, and USDA) is unclear and without transparency in the approval process.

Participants came away with a new appreciation for the wealth of information and complexity behind some of the opposition viewpoints

Labeling Neither side of the issue could address how labeling policy is consistent with United States law, practice, or longstanding policy. Opponents argued that U.S. labeling policy is out of synchrony with the rest of the world, whereas the European Union views labeling as the first step as a matter of policy. There was also confusion, and apparent contradiction pointed out, regarding substantial equivalence (of a product) and the ability to patent the gene (the process).

Moral and ethical issues When a debater exclaimed, "I'm scared! I want to know my risks!", the fears could not be alleviated with data, statistics, and probabilities. Moral/ethical arguments could actually be effectively used to defend both extremes in the spectrum of GM acceptance. Proponents argued that denying the enhanced nutritional/production benefits to an impoverished international community is 'immoral,' whereas opponents easily argued that any technology that is 'against nature' is inherently 'immoral.'

Interestingly, the participants saw clear parallels between these GM debates and emotion-charged discussion of unrelated issues like creationism vs. evolution. It was observed especially that science-based arguments are frequently insufficient against ideological arguments or moral/emotional concerns. One debater — an industry representative in the seventies who had endured the 'pesticide wars' — felt that those years were worse in terms of being in an uncomfortable position, representing an industry that was constantly attacked.

Perhaps the most compelling take-home message that arose from the 'Great Debate' workshops was the following: In order to be fully informed, it is essential that we thoroughly appreciate all the nuances, positive and negative, and complexities of the opposition view. NABC 2001 participants came away not only with a broader understanding of opposition viewpoints, but also with a fuller appreciation of the subtle, perceived flaws inherent in their own stated positions.

A full report on the NABC 2001 Workshops will be part of *NABC Report 13*, which will be published in early 2002. Single copies of *NABC Report 13* will be available to individuals free of charge.

. . . denying the enhanced nutritional/ production benefits to an impoverished international community is 'immoral.'

. . . any technology that is 'against nature' is inherently 'immoral.'

Mark your calendars

NABC Annual Conference to Integrate Agriculture and Medicine

Carla Carlson
University of Minnesota
St. Paul, MN

The fourteenth NABC annual conference will broaden the reach of the organization by integrating agriculture and medicine as a focal point for discussions on the applications of biotechnology. The conference, entitled "Foods for Health: Perspective, Potential, and Policy," will be convened May 19 to 21, 2002, in Minneapolis, Minnesota.

Presentations, panels, and discussions will highlight the continuum from production agriculture through food quality and safety, nutrition, health, diet-related chronic disease, and medicine.

The NABC local host will be the University of Minnesota. University Vice President and Dean of the College of Agricultural, Food, and Environmental Sciences, Charles C. Muscoplat, is the lead organizer of the conference.

"Across agriculture and medicine, researchers and clinicians are all on the same crusade, all seeking the same holy grail. And that is the ability to make whole foods," says Muscoplat. "The emphasis in medicine has clearly turned to prevention. Whether the problem is cancer, heart disease or diabetes, some part of the solution will be foods that deliver the appropriate complement of healthful components."

With an aging population and some incidence of chronic diseases on the rise, the only realistic course is prevention. Muscoplat notes that healthier diets would significantly mitigate the huge societal penalties that are associated with these conditions: medical charges, lost productivity and premature death.

Researchers and decision makers in agriculture and medicine will come together during the NABC annual conference to jointly take on the challenge of "Foods for Health." Throughout the two and one-half day conference, nationally recognized speakers will discuss the potential for research and application in the epidemiology of diet-related disease, functional foods, edible vaccines, nutraceuticals and plant therapeutics. Policy experts will explore institutional relationships and responsibilities, public/private funding, labeling, and regulatory issues. Presentations and small-group discussions will highlight the perspectives of consumers, producers, processors, researchers, clinicians, and ethicists. In addition, a historical perspective on food, medicine and science will offer instructive context to the discussion of the issues of the day.

Muscoplat says that the leadership of the University of Minnesota — an urban land grant institution featuring both a college of agriculture and a medical school — views the NABC annual meeting as an opportunity to reinforce interactions of researchers in agriculture and medicine nationally through the common linkage of food science, nutrition, and health. "We have a responsibility to ensure that citizens and policy makers are better informed about the contributions to quality of life that can be achieved through applications of biotechnologies in agriculture and medicine. They also need to understand the risks that accompany decisions to pursue or not pursue research in certain areas of science and technology."

Information on "Foods for Health: Potential, Perspectives, and Policy" will be periodically updated at www.coafes.umn.edu/nabc2002. Questions and comments may be directed to:

Carla Carlson, Chief of Staff
College of Agricultural, Food and Environmental Sciences
University of Minnesota
277 Coffey Hall
1420 Eckles Avenue
St. Paul, MN 55108-6074
(612) 625-6755 tel
(612)-625-7076 fax
carlsonc@umn.edu

Cont. from p. 2

using biotechnology to solve problems in the developing world. And Mark Sagoff, University of Maryland, had the audience convulsed with his Shakespearean imagery and evidence of food as fantasy.

This final plenary session wrapped up with three speakers. Dirk-Arie Toet from Nestlé gave us a personalized and industry view from the European standpoint. Gary Comstock from Iowa State University, who sometimes used audience members as examples, helped us to organize our thoughts on ethical aspects of agricultural biotechnology. And Bruce Chassy (University of Illinois) — standing in for Susan Harlander (BIOrational Consultants) — summarized the views of the food industry.

NABC 2001 was not just about plenary sessions. As a prelude to the traditional annual-conference workshops, we were treated to a rollicking great debate that was moderated by NABC President Ralph Hardy. Featured were two unnamed members of the organizing committee. One was first in white lab coat, scrolling really bad slides and then in business power-suit garb pontificating on the wonders of biotechnology. The other adopted first the role of a Princely Doomsayer from the House of Windsor and then, deeply buried under a fright wig, of a protestor. The dialogue ran its expected course and ended with hotel security "escorting" the activist from the room.

The workshops — interactive as always — were spiced by the new debating-team format.

We were briefed on the EU perspective by dinner-speaker Tony Van der haegen from the European Commission, and enjoyed "Hot Topics and Hot Hors d'Oeuvres" served up by Tom Hoban (North Carolina State University). At the final lunch-time session, Stanley Abramson from Arent, Fox, Kintner, Plotkin & Kahn, PLLC, in Washington, DC, shared his recommendations for improving product stewardship and federal regulations.

"High Anxiety," which attracted more than 190 scientists and leaders in the agricultural and food arenas, was organized by the University of Illinois and Iowa State University. The annual NABC meetings always attract a diversity of speakers and speaking styles, but rarely have the participants had so much fun — mixing laughter with challenging thoughts on consumer concerns and agricultural biotechnology.

The full report on NABC 2001 will be published in *NABC Annual Report 13* in early 2002, with single copies provided to individuals free of charge.

Agricultural biotechnology is historically rooted and the perception of risk with foods is no different from the perception of any other kind of risk.

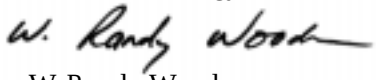
If your address label says "see page 7" this is the last NABC publication that you will receive.
Please reinstate your subscription at:
http://www.cals.cornell.edu/extension/nabc/pubs/pubs_form.html
or e-mail us at: nabc@cornell.edu
or write us at: NABC, Boyce Thompson Institute Rm. 419, Ithaca, NY 14853, USA

Cont. from p. 1

Agricultural Statistics Service reports that American farmers increased planting of biotechnology-modified crops by 18% this year. The US acreage of genetically engineered (GE) soybean increased to 68% from 54% and of GE cotton to 69% from 61%. The GE corn crop remains at 26%.

The level of discussion surrounding ag biotech clearly points to the continuing need for the National Agricultural Biotechnology Council. Since 1989, NABC has provided an open forum for exploring the issues. At NABC's 2001 meeting in May in Chicago, "High Anxiety and Biotechnology: Who's Buying, Who's not, and Why?", almost 200 participants engaged in discussions through the lenses of consumers, farmers, scientists, philosophers, and domestic and European government regulators. Issues were highlighted through discussion and debate. NABC Report 13 promises to provide a strong foundation for increased understanding about concerns surrounding consumer issues, food, and agricultural biotechnology, in keeping with the principal objectives of this organization.

Finally, it is a pleasure to report that NABC continues to grow. At our Council Meeting on May 22, we welcomed South Dakota State University as a new member and the return of the University of Saskatchewan, bringing the total membership (full and affiliate) to thirty-eight organizations. The growth in NABC is a reflection of the commitment we have to exploring all the issues that surround agricultural biotechnology without bias. In addition, the council voted for NABC to become a member of the National Coalition for Food and Agricultural Research. The National C-FAR — a broad-based stakeholder coalition of food, agriculture, nutrition, conservation, and natural resource organizations — is seeking a doubling in public funding for food and agriculture research over the next five years. NABC will bring to the National C-FAR an increased awareness of research issues related to the development and application of biotechnology to agriculture and the environment. It is an exciting time for agriculture, biotechnology, and NABC!



W. Randy Woodson
NABC Chair
Purdue University

NABC
Boyce Thompson Institute, Rm. 419
Tower Road
Ithaca, NY 14853