#4 LargestCrop

NAFA TALKS ALFALFA WITH INDUSTRY & USDA BIOFUELS LEADERS

At its recent *Alfalfa/Corn Rotations... A Sustainable System to Produce Food, Feed & Bioenergy* workshop in Johnston, IA, the National Alfalfa & Forage Alliance (NAFA) sought to demonstrate alfalfa's potential for cellulosic ethanol production, particularly in short rotations with corn, without compromising traditional food/feed supplies.

Two of the featured speakers were Abengoa Bioenergy Corporation's Thomas Robb, Manager of Institutional Relations, and USDA's Jeff Steiner, the Agricultural Research Service's National Program Leader for Biomass Production Systems.

NAFA visited with Robb and Steiner about the alfalfa/corn rotation system for cellulosic ethanol production and about alfalfa's potential as a biofuel feed stock.

"I'm encouraged that you're looking at new things; bringing in technologies that aren't being used today and trying to find markets for them," Robb said. "The overall economics in my opinion, for both the supplier and the processor haven't been delineated yet. There is a need to look at it in a systems approach to determine what the overall economic viability is."

Referring specifically to Abengoa's planned cellulosic facility in Hugoton, KS, Robb added, "We are not into the genetic side of things. Our interest is much more in, with the unique environment we have in Southwest Kansas, what is the optimal way to establish grass varieties, what do we think the overall growth potential would be? We're not advocating monocultures of switchgrass, we believe that mixed cultures will be much more viable over time. We're constantly looking for new ways to improve the overall productivity per acre of ground." The Kansas plant will use 2,500 tons of biomass daily to produce ethanol and electricity.

Steiner, who is responsible for coordinating ARS research, partnerships, and commercialization activities for regional biomass research efforts across the United States, touched on the regional appeal that an alfalfa/corn production system may hold, "I think with alfalfa, because it's a natural source of nitrogen, it can produce a high value co-product – protein, it can also produce biomass, furnish biologically fixed nitrogen into cropping systems; all that is going to sort itself out. Good science, agronomy, and economics will determine what the best options will be for different regions of the country."

In order to meet the Renewable Fuels Standard of 36 billion gallons of biofuel production annually by 2022, many different feedstocks must be utilized. However, some crops seem to have been "anointed" as the premier candidates to use, i.e., corn, switchgrass, miscanthus. When talking about candidate crops Steiner said, "The whole point is the life-cycle analysis. But it's not just life-cycle analysis for greenhouse gases, it's the issue of all the work that's been done with alfalfa and how, when used in a proper setting, it'll be able to provide biometrically fixed nitrogen, as long as it doesn't contribute to offloading of nitrate into surface or ground waters. All of that ties together very, very well. The point, for any of our agricultural systems, is that we want to show good stewardship, and at the same time have them be productive, and profitable. And that really is the definition of sustainability, that it's profitable at all stages of the supply chain and that it demonstrates good stewardship of our natural resources. And by the way, good stewardship also revolves around 'can we keep people on farms that can support the economies of rural communities?'"

One of the difficulties in determining which feedstocks will be best suited for biofuels production is measuring differential benefits, e.g., one crop may hold greater biomass potential, while another, which produces less biomass, may be better for the environment. "That's the science that has to be done," Steiner said. "All of this has many objectives - economic, environmental. How does what you are producing help the livestock feeder or the calf producer? It depends on the markets. What's going to work is really going to be market driven."

Steiner added, "We're not picking winners or losers. Nitrogen remains a major challenge now and into the future, not only the environmental costs of it, but the costs of imports. What happens as there is more rural development in developing countries? What happens in sub-Saharan Africa as they increase their capacity to be able to produce food and use nutrients? What does that do to the world nitrogen market? Legumes, like alfalfa, are very critical components to these decisions. All of these factors are very, very important."

Alfalfa/Corn Rotations...
A Sustainable System to Produce Food, Feed & Bioenergy

To view Workshop Proceedings visit the NAFA website at:
www.alfalfa.org/2010WS_agenda.html