Iowa Grain Quality Initiative
Advisory Committee Meeting Minutes
January 11, 2008

Present: Charles Brown, Gary DeLong, Ray Hansen, Connie Hardy, Harold Hommes, Charles Hurburgh, Randy Ives, Mike Jerke, Larry Johnson, Dan Loy, Clark McGrath, Jerry Miller, Lucy Norton, Mike Owen, Howard Shepherd, Tim Sullivan, Greg Tylka, Dick Vegors, Gordon Wassenaar

Welcome and updates
Charlie Hurburgh welcomed committee members and summarized the agenda.

Jerry Miller gave an update from ISU Agriculture and Natural Resources Extension on the following topics:
1) Appreciation for contributions made by Robert Wisner (Extension Economist) who retired in December 2007, and progress in filling that position.
2) Jon Tollefson has stepped down as Chair of the Dept. of Entomology due to health reasons. Joel Coates will serve as Interim Chair.
3) Wendy Wintersteen, Dean of the College of Agriculture, has started a newsletter entitled “Stories in Agriculture and Life Sciences”. that will be sent to ISU College of Agriculture Alumni. Melea Reicks, formerly editor of the Integrated Crop Management newsletter, has become editor of the “Stories” newsletter within the College of Agriculture.
4) There have been several proposals recently submitted to the Iowa Power Fund.

Charlie provided a handout of current projects of the Iowa Grain Quality Initiative and he described the “Extension 21” state support.

In addition to the projects listed, there was discussion about the importance of biotech issues such as weed resistance and how to meet requirements of international buyers of soybean meal and distillers grains. Iowa Soybean Association and the National Wheat Growers Association have each formed working groups to address these issues.

Harold Hommes asked for an update on aflatoxin. Charlie Hurburgh replied that some areas of Iowa experienced dry weather and heat at just the right time for aflatoxin to develop in 2007. Aflatoxin can develop in corn that looks like it is in good condition. Vomitoxin and fumonisin occur in wet, cool conditions. Small amounts of mycotoxins can be managed in grain handling, but sellers of distillers grains have to be very careful because of the concentration of mycotoxins in the distillers grains.

Technical reports and discussion
Impacts of Local Processing: Update on Ethanol and Soybean Processing – Connie Hardy presented updated information following the 2006 survey of Iowa ethanol processing plants and new data about Iowa soybean processors, including biodiesel manufacture. The presentation included a discussion of the potential for Iowa’s corn oil
and soybean oil to meet production capacities for biodiesel. This Power Point presentation will be available on the IGQI website.

**Grain Storage and Management Training module**
Howard Shepherd described the web-based training tool designed to help farmers and grain handlers decide whether to build new grain storage and how much to build. This module incorporates a cost analysis tool based on current information from bin construction companies. Howard stressed the importance of understanding the needs of processors who must buy grain in good condition even a year or more after harvest. Farmers’ grain management and delivery practices will change as they change marketing strategies to include new local processors.

A discussion followed about how to promote this module and other tools developed by IGQI. Suggestions included:
- Making it part of a Quality Management System protocol
- Advertising in *Iowa Farmer Today* and the *Iowa Farm Bureau Spokesman*
- Having a booth at the Iowa Power Farming Show
- Looking for program opportunities to speak to farmer audiences

**IGQI website**
Howard Shepherd highlighted the parts of the website that have been added for users – bioterrorism/traceability records information; local processing information; meeting minutes; staff and advisory committee contacts; project reports and new project descriptions.

**Traceability**
Charlie Hurburgh presented the current issues in grain trade related to traceability, and he stated that the major problem is likely going to be mycotoxins. Following is a list of current IGQI – Grain Quality Lab projects related to traceability:

1) implementation of a Quality Management System in a grain handling company, done in cooperation of Farmers Coop in Farnhamville, IA.
   - measurement of the ability to perform a mock recall.
   - development of a tracking index for grain. (Ideal index = 1)
   Note: results showed that the elevator locations with a high traceability index lacked QMS, whereas those locations with low index values (closer to 1) could perform mock recalls at acceptable levels

2) development of a Mass Flow Model to predict when a given input (load of grain) is likely to come out of a typical grain storage bin. The model has been translated into software that would provide a perpetual inventory tracking mechanism.

3) development of a GPS Component
This software will help farmers meet traceability requirements by tracking relevant crop information from the time the crop is harvested. It is based on a
unique time and place for each lot, and such information as chemicals applied, grain variety, special handling process, etc. may be included.

One of the ways grain traceability can be implemented is in the ISO Standards used for international trade. 2000 (Food Safety), 22005 (Traceability), and 22006 (Production Agriculture)

Tim Sullivan asked how these tools will be marketed and made available to users. Charlie Hurburgh envisions these tools would be included in commercial software related to their use. Howard Shepherd has been in contact with some of the software developers who provide inventory management software. One situation where this will be extremely important is the uncontrolled release of an unapproved GMO-event that is grown commercially but not allowed in certain markets.

**Industry presentations**
**Iowa Renewable Fuels Association**
Lucy Norton, Director of the Iowa Renewable Fuels Association (IRFA), shared information about current issues facing the biofuels industry.

**Testing**
As the distillers grains inventory has grown, more interest is being shown by end users about quality. To better answer questions about quality, the IRFA is working with Iowa Department of Agriculture and Land Stewardship (IDALS), ISU scientists and private laboratories to facilitate testing for sulfur, mycotoxins, and antibiotics. The following questions are important:
- Can tests be done more rapidly?
- Can tests be incorporated directly into the processing plant? If so, these components could be included on the product’s nutritional analysis. (sulfur)
- Can a mycotoxin test be done in less than 2 days?
- What is the lowest limit of antibiotics that can be detected by a test?
- Which tests are important to which users?
- How can test procedures be made more consistent among labs?
- If livestock feeders might want to test their own feed, can standardized tests be developed so that tests done in-house are essentially the same as those done in commercial labs?

A Co-Products Committee has been formed between the IRFA and the Iowa Institute for Cooperatives to address these issues.

**Trade rule changes**
Some export markets have changed their phyto-sanitary requirements. GIPSA and APHIS are changing their procedures to meet the new requirements. Charlie Hurburgh asked if cleaning the grain would reduce the need to use antibiotics in the ethanol fermenters.

**New uses**
Work is being done to assess the use of glycerin in livestock feed rations and determine what form would facilitate its use in feed.

_Novecta_
Gary DeLong, Project Manager of Novecta, reported that 22 US biodiesel plants have now been certified in BQ9000. ISO-94 was the basis for BQ9000, which is a self-certification, not an international standard. Revisions have been made 4 times in the last 3 years, based on needs of customers. The original intent was to reduce variability, and methodology is becoming more consistent among the biodiesel plants. The plants that are BQ9000-certified receive fewer complaints. BQ9000 is in North America, but it is not available to other countries at this time.

Gary also pointed out the need to educate fuel handlers about how to store and blend biodiesel.

There will be a BQ9000 standard for laboratories. On the ASTM side, specifications are being established for biodiesel (B6 – B20).

_How can ISU become more involved?_
Charlie Hurburgh asked if there is a place for ISU in developing training as well as in developing rapid tests for quality specifications. In development of test procedures, ISU needs to identify researchers who would be interested in working on them – sulfur, antibiotics, mycotoxins. Members of the Task Force (discussed in Lucy Norton’s presentation) may be able to sponsor some of this development.

One of the problems biodiesel plants face is that people with the skills to run a lab do not want to live in the rural communities; yet, in some cases, the existence of jobs that require higher training levels (such as in biofuels plants) has brought trained people back into the rural communities to be closer to home and family.

Flowability issues in distillers grains need to be addressed, particularly when DDGS is transported in train cars. Factors that affect flowability include moisture content, oil content, how long the product sits, ambient temperature and humidity. When DDGS are unloaded from ships at international ports, they are picked up with a clamshell out of the ship’s hold, so the product breaks up and becomes flowable. In one Novecta study, mycotoxin levels decreased during shipment; however, storage in some foreign countries can contribute to quality problems.

Sulfur content is an issue in cattle rations using DDGS. A discussion was held about whether the use of sulfur could be decreased during processing (it is added at different stages in different ethanol plants) or whether another additive besides sulfuric acid could be found. Larry Johnson stated that fractionation of the corn at the front end of ethanol processing could reduce the need to use sulfuric acid as a means to separate protein. Dan Loy stated that beef cattle ration formulators usually used DDGS at no more than 20% of ration to avoid problems with sulfur; however, if sulfur levels were not a potential problem, DDGS might be included at a rate as high as 60% of the ration.
Other livestock-related topics that involve ISU already include:
   Use of DDGS in poultry rations.  (Kristian Bregendahl)
   Feedlot management education.  (John Lawrence and the Iowa Beef Center)
   Manure management

Other points discussed included the need to upgrade Iowa’s infrastructure and the strong
effect adequate infrastructure will have on the quality of the products Iowa exports.  Also,
we discussed the need to educate the public about the positive side of biofuels
development and its effect on agriculture and rural development.  It was suggested that
ISU provide news releases that businesses could use to further publicize developments.

Next meeting
It was decided that we should meet in July 2008.  Possible dates will be circulated for
July.  IGQI encourages input from its Advisory Committee and communications among
its members between meetings.  Howard Shepherd will distribute a list of members and
contact information.

To do:
   1.  Seek opportunities at trade shows and ag programs to present Grain Storage
       module and other tools
   2.  Identify scientists with an interest in solving sulfur problems in DDGS and in
       developing rapid tests for DDGS quality
   3.  Set meeting for July 2008

Respectfully submitted,

Connie Hardy – ISU Extension Value Added Agriculture Program