CONSERVATION INNOVATION GRANTS
Final Report
September 2009

Grantee Name: Maryland Grain Producers Utilization Board (MGPUB)
Project Title: Using Biofuels Production to Enhance Chesapeake Bay Water Quality through Expanded Cover Crop Planting
Period Covered by Report: August 2008-September 2009
Project End Date: 9/30/2009

Summarize the work performed during the project period covered by this report:

In light of the decision by Chesapeake Ethanol LLC not to move forward with the construction of a barley-based ethanol plant in Maryland, MGPUB has struggled with the best way to promote the use of barley as a cover crop to help both energy production and the Bay. We chose not to terminate the grant as there were two other projects in the region looking at barley as a feedstock; one project is on Maryland's Lower Eastern Shore and the other in Hopewell, Virginia. These projects did not move forward quick enough to impact this project year, but the Hopewell, Virginia, plant is under construction. This year, MGPUB continued to work with the Maryland Department of Agriculture (MDA), the Maryland Association of Soil Conservation Districts (MASCD) and the University of Maryland (UMD) to provide the opportunity to farmers to grow hulless barley under the MDA Maryland Agricultural Cost Share Program (MACS) harvestable cover crop program. This program provides a supplement payment of $15/acre so farmers learn the agronomics and economics of growing hulless barley.

Describe significant results, accomplishments, and lessons learned. Compare actual accomplishments to the project goals in your proposal:

In the first year of the program, 18 farmers signed up to grow 2,099 acres of hulless barley under the MACS Harvestable Cover Crop Program, 692 acres were actually planted. In the second year, 12 farmers signed up to grow 1,426 acres and 870 acres were actually planted. In its third year, 13 farmers signed up to plant 1,499 acres of hulless barley which resulted in an actual fall planting by two farmers of 639 acres. Our goal had been to have 2,000, 10,000 and 49,500 acres progressively for a total of 61,500 acres.

The two growers that planted the crop in year three had both grown hulless barley in prior years and were willing to grow the crop again in spite of the 20% yield decline compared to traditional barley. Those that chose not to grow it again cited the yield loss, lack of market and poor availability of seed as their reasons for not planting hulless barley in the fall.

In speaking with the project leaders of the two regional ethanol projects that intend to use barley, they have decided to use traditional hulled barley and remove the hull prior to fermentation. They intend to burn the hulls as a biomass energy source which has the potential to take them beyond the definition of "first generation" ethanol producers. The newer traditional hulled varieties developed by Virginia Tech have a higher test weight and significantly improved yields

to make ethanol from hulled barley a viable option. The hulled barley "Thoroughbred" has proven to be a very useful small grain crop and as a result farmers are considering growing more barley. This in itself is good for the Chesapeake Bay as having a small grains crop growing in a field following a corn crop takes up nutrients unused by the previous crop or released during mineralization of the corn stover as occurs in the warmer months following corn harvest. This is true whether the barley is grown as a cover crop or a traditional field crop with nutrients applied adhering to a nutrient management plan. Hulless barley is still a preferred crop for ethanol production and scientist's at Virginia Tech are breeding new lines of hulless back-crossed with the high yielding "Thoroughbred" barley which may renew the desire and interest in hulless barley.

Describe the work that you have completed since that time and plan to complete during the remainder of the grant period:

MGPUB chose not to push fellow grain farmers into producing large volumes of a crop for which there was not an emerging or established market. They felt that it was unfortunate about the lack of barley to ethanol market and rather than risk losing future support for such a venture they chose to let the grant continue to enable farmers who chose to grow the hulless barley receive a payment to help offset the lower yield, but did not provide the publicity and promotion for the crop as originally intended. Now, the new interest in producing ethanol from barley provides the important end market that was unavailable to growers during the three-year timeframe of the grant and the renewed commitment by the federal and state governments to the Chesapeake Bay cleanup provides an even greater need to expand cropping systems that provide farm income and water quality benefits. MGPUB is therefore proposing to adapt the project to encourage farmers growing hulled barley, as well as hulless barley, for ethanol to do so without the use of fall fertilizer in a commodity cover crop approach. This amendment will start with fall 2010 planted barley. Construction of Osage BioEnergy's 55 million gallon ethanol plant in Hopewell, Virginia is already underway with production starting in 2010. They intend to use both hulled and hulless barley but if they are unable to source enough barley, they intend to use corn, so we are seeking an amendment and a no-cost extension to the grant through September 2012, to encourage farmers to grow more barley, without the use of fall fertilizer.