

## Final Report - Jan. 7, 2014

### **Title: The Effects of Diets with Corn Distillers Dried Grains or Sorghum Distillers Dried Grains on Catfish Performance, Processing Traits, and Production Profitability**

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**Status:** New 1-year project

**Stated goal:** To determine the effects of diets with corn distillers dried grains with solubles (DDGS) or sorghum DDGS on production performance, processing traits, and profitability of channel catfish production.

#### **Specific objectives:**

- 1) Determine growth, survival, feed conversion, processing traits, and proximate composition of the fillet in catfish fed diets with 28 or 32% protein and 20% Corn or Sorghum DDGS.
- 2) Conduct a partial budget analysis to determine the relative profitability of using the different diets.

**Approach:** We conducted a feeding trial in outdoor pools (2946 L) with channel catfish stockers averaging 150 grams initially. Four diets (28% or 32% total protein), with corn or sorghum DDGS (20% inclusion rate) were evaluated using diet formulas similar to those used in recent trials. Fish were stocked a rate of 40 per pool in 4 replicate pools per diet and fed once daily to apparent satiation for 10 weeks.

The pools were harvested in October. Five fish per tank were reserved for processing yield and proximate analysis. Data were analyzed with 2-way ANOVA and results were considered significant at  $P < 0.10$ . Weight gain was higher in fish fed diets with corn DDGS compared to sorghum DDGS, and in fish fed diets with 32% protein compared to 28% protein. Feed conversion followed the same pattern (corn DDGS better than sorghum DDGS; 32% protein better than 28% protein). Survival was higher in fish fed diets with corn DDGS than sorghum DDGS (protein level had no effect). Dressing percentage did not differ among diets. Results for economic analysis are pending. The initial results indicate that sorghum DDGS may lack essential nutrients or possess anti-nutritional factors that reduce its effectiveness as a feed ingredient for catfish compared to corn DDGS. A smaller companion trial was conducted in glass aquaria using the same diets to get a more accurate assessment of feed intake among treatments. Growth was higher in fish fed diets with 32% versus 28% protein, but protein source was not significant. Feed intake appeared to be similar for all diets, so more research is needed to determine the cause of diet differences among larger fish in pools.



