

ACRE Grant – Interim Report

Contract #27769

October 2011

We have completed or are in progress on all the major portions of the Solar Grain Dryer Project.

To date we have:

- Selected a site to maximize solar gain over the grain drying area. The site selected is in an arid portion of the ranch which cannot easily be irrigated.
- An architect has designed a building to house the dryer and to optimize the solar gain.
- The site design includes building into a small hill such that it will minimize the energy required to load the grain onto the conveyor belt. The location will allow the grain to be off-loaded and then gravity feed onto the conveyor belt. It will then travel along a south facing wall to an auger to feed into a pelletizer and then into storage units.
- This site will also minimize any negative impact to the view shed of the nearby Scenic By-Way.
- We have determined that grain drying will be possible not only during the hotter summer months but also during the colder winter months.
- We are working with the brewery to determine some type of delivery schedule and quantities to be able to properly size the auger system. This will also determine the size of the conveyor belt necessary.
- We have reviewed grain drying results from a study done at OSU.
- A solar design specialist is currently working on the solar design and capacities necessary.
- Currently have an anemometer on site to determine feasibility of adding wind generation as an alternative power source.
- We have identified a company in Colorado that specializes in material to bind the feed pellets. It is our plan to visit the facility and work with them to find an economical binding agent that will work with the grain.
- We have discussed the project with another producer who is attempting to pelletize a similar product. We plan on visiting his facility.
- We are currently investigating a pelletizer made by a company which boasts of being able to successfully pelletize 100% DDGS.

Outstanding Issues:

- We have not yet started working on the sensors necessary to efficiently operate the system.
- Are working with a energy auditor who specializes in ranch properties and their associated systems. The company was recommended by our local NRCS office.

Significant progress has been made toward our goals and the interim results that we are seeing are very encouraging.