

SCRIBE NOTES
OALP Class 15, Seminar 2
Theme: “Southwestern and West Central Oklahoma Agriculture and Industry”
October 13-15, 2010

October 13, 2010

Scribe: Todd Love

The day started before the sunrise, at the Wes Watkins parking lot in Stillwater. By 7:15 AM the group was on the road headed to our next stop in Oklahoma City at the Oklahoma County Extension Office. After picking up a few more participants, we were on our way to Southwest Oklahoma and a packed three days of learning and meeting participants in agriculture in Oklahoma. The bus ride gave all the chance to get caught up with one another, since we had not been in session since August.

Our first stop was at the Plains Cotton Cooperative Association. Jay Cowart of the PCCA reviewed the history of the PCCA, explaining the operation of the storage facility. We learned about the process that cotton goes through from the gin to the market. We visited one of the warehouses and saw the bales being stacked for storage and bales being picked to be loaded in trucks for shipment.

Lunch was served at the PCCA, which gave us time to hear several guest speakers also involved in cotton. The speakers were: Shane Osborn, Jerry Goodson and Tom Buchanan.

Shane Osborn, who is an Associate Extension Specialist, was the first to speak. Shane covered cotton as an economical, sustainable fiber. The cotton plant provides fiber, feed, and is a food source. This crop is an important crop to Oklahoma and has provided sustainable income for many communities and growers over the years.

Next, Jerry Goodson, who is an Extension Assistant, covered the changes to insect resistance in the cotton fields. Twenty years ago, the cotton boll weevil was the pest that limited cotton production and yields. Today, the cotton boll weevil is eradicated in Oklahoma. Insects are still pests, but due to changes in the last 20 years, insects are less of a threat than they were back then.

The last speaker during lunch was Tom Buchanan. Tom is the director of the Lugert-Altus Irrigation District. Tom discussed water, irrigation, and the Lugert-Altus Irrigation District. We were given a history of the district and the purpose of why the district was established. Today, the success of many of the farms in the Altus area is a direct result of the success of this water project.

After lunch we departed the PCCA facility to make farm visits. Tom Buchanan became our tour guide for the rest of the day as we visited locations around Altus. Tom explained the production of cotton, its reward, and the challenges in farming operations today.

Our first farm visit was to Matt and Kellie Muller. While at the farm, Matt had set up an excellent visual of the growth cycle of the cotton plant. The explanation of the life cycle of the cotton plant educated all to the production of cotton. He also took the time to show how a cotton picker worked and what the machine did when it picked the cotton fiber. Matt also discussed the challenges and issues facing today's farms in labor, water, and governmental regulations. After the presentation in the machinery shed, we traveled to the field and observed the operation of the cotton picker and module builder in action. This farm visit allowed the class to get close and personal with the cotton harvest.

After the farm visit at the Muller's, we visited several fields and discussed the various irrigation systems that are used in the Altus area. One of the stops was to a drip irrigation station. I now have a better understanding of drip irrigation and what the challenges are for the Lugert-Altus Irrigation District.

Next we toured the Cotton Growers Cooperative and saw how the cotton gin worked. This stop allowed us to see the module unloaded, the cotton fiber ginned, and the seed separated from the fiber. We also watched a bale being formed and banded. Though this was a loud stop, it is a wonder even today how the gin works and how it is a final step in separating the fiber from the seed of the cotton plant.

The group then traveled to Eldorado, Oklahoma to tour the Eldorado Farmers Cooperative. Barney Trammell explained the cooperative's purpose and their recent addition of a grain shuttle train. The on-site grain storage facility was impressive and the amount of grain this facility can load and ship is a wonder. This facility now allows for the fast movement of grain in an economical way. The ability to build a train load of grain at one location helps to lower shipping charges and improve profits for the grain grower and the Coop.

We finished the day with dinner at Tanner and Tara Holder's Rio Rojo Outfitters. Mark and Rick Holder provided a nice dinner that included great food and great company. It was good to see another method of agritourism in practice. The lodge provided an excellent backdrop to a day of learning and excitement that the class had participated in, on this first day of session two.

October 14, 2010

Scribe: Vicki Jo Stephens

Phelan Ranch - Mt. Park, OK

John and Tamara Phelan welcomed our class at their ranch home on the "Tall Grass Prairie". His ranch includes 2,600 acres owned and 1,000 acres leased and is in 100% native grasses, mostly blue stem, with no farming. Their belief is to be good stewards of the land, increasing productivity without inputs.

John's native pasture management program begins with "rotational grazing". John is a "custom grazer" giving only the care and grass, having no ownership in the cattle on his ranch. The cattle come in weighing between 450 to 550 pounds around November 1st. He dry winters on 37% protein cake, no hay, and ships the cattle in late July/Aug with an average weight gain of 300 pounds. He then rests the grass until late fall, when he receives his new shipments of cattle. He manages them in one herd on 25 permanent paddocks, subdivided with electric poly wire. The average size of a paddock is 80 acres and takes a herd of 500 to 600 steers only one to three days to graze. There was a gradual transition in the late 1980s from open grazing on five pastures to the rotational grazing operation he has today. All interior fences are electric poly wire, and all barbed wire fencing has been removed. The electric cross fencing was paid for by the EQUIP program. John stated that poly wire is considerably easier to work with than electric wire fencing, both for installation and maintenance aspects. The biggest obstacle faced was water development for each of the paddock areas. This was accomplished with the use of 3½ inch poly pipe for a pipeline to each of the new water points.

"Hair Sheep" or woolless sheep are raised and sold for their meat. The sheep are sold to mostly ethnic customers on the east coast (New Jersey) and bring \$1.40+ per pound. Various guard dogs are used to keep predators away. The alternating grazing of pastures with "hair sheep" or woolless sheep takes care of most all invasive weeds. Since the sheep are "aggressive grazers", they eat the pesky mesquite and cocklebur. Reclaim and Remedy herbicides are also used for good root kill. Chemicals are known to take the diversity out of natural grasses, and are not good for native grass range management. Controlled burns also keep the little cedars and tougher mesquite at bay.

The Phelans grant hunting leases to an outfitter on some of their land. Since approximately 1,000 acres of their land is mountains, there is room for this without interfering with the custom grazing operation. The ranch borders the Wichita Mountains Federal Refuge where there is controlled grazing for longhorn cattle and buffalo. The refuge makes for good neighbors due to their excellent fire department and help with controlled burns. In August, the Phelans do a "summer burn" for grass management. This holds back the "woody species" of grass and brush. This isn't done every year and only a few areas are burned at a time. The main predatory animals affecting the ranch are coyotes.

Son, Grady Phelan, and his wife, Erin, are proud “lunatic farmers”. Grady has his zoology and philosophy degrees, and has studied under Joel Southtown. He believes that the best beef is “salad bar beef” or cattle that graze on all native grasses and other native plants. A native pasture cannot be recreated. Its value comes from the fact that if cattle are deficient in a mineral, they will find and eat a plant that has those trace minerals and thus self-medicate as nature best intended. Therefore, they don’t control grazing by limiting cattle to pasture only planted to all bluestem. However, he does raise “organic” beef cattle.

They also raise “range grown” chickens in knee-high pens that are 10’ x 10’ in dimension. These pens contain approximately 50 chickens in each and are drug around on the native grass. They are fed grain, they eat 10-15% native grass, and they dig through the cow patties to eat maggots as well. The state/federal law allows the Phelans to butcher 1,000 chickens a year without regulation. Grady prefers to “open air” butcher and states that this method results in 36% less bacteria than in Tyson brand chicken you buy at the grocery store. His range-grown chickens also suffer far less heart attacks and have fewer leg problems when grown this way. His “slow growing broiler” chickens are butchered at 10 weeks of age, while his “fast growing broilers” he butchers at 7 weeks of age. These chickens sell for \$3.50 per pound dressed. His laying hens are also kept on natural range grasses. Predators are successfully kept out with 2,000 volt electric netting. Their eggs sell for \$2.50 to \$3.00 per dozen. His customers are all local and buy directly from the farm. Most of his customers are area home school moms, hippies, and yuppies.

The younger Phelans also sell “herd shares” from three Jersey milk cows producing nine gallons of milk per day, to many of the same customers. A customer, who buys a “herd share” or 1/35th of a cow, is entitled to one gallon of raw milk per week. This is equivalent to paying \$5.54 per gallon. The same kind of raw milk would cost \$8 per gal in Dallas, and \$12 per gal in Florida. They stated that it is legal to sell “incidental amounts” of milk in this way. Their Jersey cows are fed all native bluestem grass and no grain, resulting in a higher butter fat content. The value of drinking this raw milk that is high in fat lies in the fact that it has “good” saturated fat and this fat is good for you. The only input is some hay in the winter.

Show pig rejects are also fed on their ranch to an average market weight of 390 pounds. At this weight, the Phelans expect the hogs bring \$1.15 per pound on foot or \$3.00 per pound on the rail. Currently, they are feeding four hogs to be sold to the same customer base as their other products.

Marketing for Phelan Ranch Co. products is achieved by customer word of mouth, via their own website, and by other directories and links on commercial websites. More information is available on the following websites: www.PhelanRanchCo.com, www.LocalHarvest.com, and www.RawMilk.com.

Woods and Waters Winery and Vineyard - Anadarko, OK

Dale Pound has operated his vineyard and winery for 12 years. He grows 11 varieties of grapes on his 20 acre vineyard. His goal is to expand this to 40 acres at this location. Currently, he also has 12 acres “under contract” for a total of 32 acres. These other vineyards that are “under contract” with Woods and Waters, must plant the variety they tell them. They are also monitored for water, etc. during the year to insure a quality grape is brought into the winery. Out of 54 vineyards in Oklahoma, only three or four are as large as Woods and Waters. It is the largest winery in the state that produces wine with their own products. The 11 different varieties of grapes grown produce 19 different wines. These are mostly sweet wines.

Dale explained that prior to prohibition Oklahoma was the fourth largest grape grower in the nation. Vineyards that survived the prohibition were turning their grapes into grape juice for a Methodist minister, which later became Welch’s grape juice. Oklahoma LD soil of sand, clay and loam, holds temperatures stable and the rolling hills allows for good drainage. Since grapes are produced on the plants as a source of survival, fertile ground would be bad. Due to this fact, the state’s premier grapes are grown here in the southwest region where they are stressed the most! The 6B climate zone area is perfect for grapes.

Owls and hawks are welcome here as they prey on the birds that would otherwise eat the grapes. The glassy-winged sharpshooter is a pest that brings virus and disease to the grapevines. Oklahoma's hard freezes are necessary to kill them. The pesticide most commonly used is Seven, plus a lot of fungicides. The number one enemy is 2,4-D. Therefore, maintaining good working relationships with area farmers is essential. One new organic pesticide is a refined mineral oil called Stylet Oil. The application coats the leaves and must take place while the plants are wet. The process is slow and takes four days. Stylet Oil works very well and is inexpensive.

A 17 acre watershed lake is the source of water for the grape crop. Watering is done with drip tubes placed every two feet delivering one-half gallon of water per hour. Dale has a \$5,000 planting expense and then a three year wait on all new grapevines. They are grown from their own roots and not grafted for a hardier plant. VSP is the vertical shoot positioning of each grapevine which includes the trunk and two arms or cord awns. Harvest takes place by early September and occurs only once per year. The grapes must be harvested between 6:00 and 10:00 a.m. This keeps the grapes cooler and the sugar content lower. The harvest is based on the "mean" average, so the under-ripe grapes and over-ripe grapes balance each other out, and all grapes are harvested. The average yield is four tons per acre or 600 gallons of wine per acre. Dale's winery values a ton of grapes at \$1,000. Currently, all the grapes here are harvested by hand by local crews. Dale will be going to France soon to shop for used "harvesters" being 2 to 3 years old. The same equipment here in the states purchased new would cost \$150,000 to \$200,000.

One of the greatest detriments to Dale's operation are the Liquor Laws in Oklahoma. One of these laws prohibits the interstate shipping of alcohol from wineries direct to customers, and is controlled by wholesalers. His comment was that you have to build your business around existing state laws. As a member of the Oklahoma Grape Growers, he has played a role in overturning some of these laws. Currently, as of 2008, wineries have to get a wholesaler's license to distribute just like the huge wholesalers. They are required to use privately owned winery trucks and can't combine shipments with other wineries. If a winery ships over 10,000 gallons per year, they must use large wholesalers to distribute their wines. Wine production is a highly regulated industry, while the actual grape growing is not.

Viticulture is the study of wine. A vintner is a wine maker and making wine is considered to be an art form. Wine measurement is metric and began in Europe. Therefore, a bottle of wine is equal to 750 ml.

On a tour of the Woods and Waters Winery, we saw the basic machinery used as the grapes are brought in from the harvest. These included the shaker, the crush pad and the grape cluster machine that de-stems the grapes. A hose pumps whole fruit to pressers and the juice is pumped inside the winery. The total time from the field to the tank is less than one-half hour.

The industry rule is: If you walk in your winery and don't like the smell, then something's wrong. The winery "dry room" is kept at 68 degrees all year to prevent mold and mildew from forming. The white wine is kept in stainless steel tanks. The red wine is kept in wooden barrels and kept in a climate controlled room for an average time of two years. A barrel holds 60 gallons and is made of American Oak from Missouri. The onsite lab measures and monitors nine items including the sugar content and pH. This winery produces 60,000 to 80,000 bottle of wine per year. It can produce 25 cases of wine per hour on the smaller specialty lines including filling, corking, labeling, and boxing. A fully-automated line fills 60 bottles or five cases per minute on the main production line. Poly tanks are used for equal temperature storage, and for cold stabling in the cooler, stainless steel tanks are used. The tannins are removed from white wine so there is no fallout sediment.

Following the tour of the Woods and Waters Winery & Vineyard, we were treated to a lovely luncheon sponsored by Farm Credit of Central Oklahoma and Russell Strecker - OALP Class VII. Here, Jeff Weeks of Oklahoma Agritourism presented an overview of what their department does to promote all aspects of Oklahoma agritourism. All OALP class members received the specialized informational and promotional brochures.

No Till Farming Operation, Apache, OK ~ Alan Mindemann

Our group then traveled to Apache, OK where we heard Alan Mindemann talk about his No-Till Farming Operation. A no-till operation evens out in 5 to 10 years. The residue provides drought-proof fields. He's been farming on his own since 1995. He is self sufficient in that he owns all of his equipment used on his farm, sprays his own crops, and does his own harvesting. He does not own any cattle, yet sub-leases his grassland to his brother who uses the cattle facilities that are on his place. He accomplishes this farming operation on approximately 3,800 acres of which it's only a small part of the land he owns and the majority is rented.

He averages 60-80 bushel milo and double crops with a Texas bred corn that averages 110 bushel per acre, or soybeans. He also grows canola, soft wheat for seed, hard wheat, sesame seed, and feed grains. All grains are stored on the farm and he does his own direct marketing. His soybeans are sold into the Dakotas for cover crop due to their deep root system. He says that doing his own grain storage really pays off, so he has invested in above ground bins and a 12,000 bushel bagger system. He has 100,000 bushel of permanent storage at his farm.

Alan says that flexible farming has been the key to his success with market changes. His belief is that if you find a small niche in the market and work to fill that niche, you will not only survive... you will make money! He has found that growing cover crops such as oil seed sunflower, grain sorghum, canola and tuff grass have been successful for him. He chooses what crops are to be planted based on the amount of moisture held in the ground, as well as the expected amount of moisture to be received. He always tries to utilize 100% of the water and tries to retain anything left over. He always has a scheduled "Plan A" and also Plans B, C, D, etc. on planting!

Sesame seeds are planted in July and are very hardy with or without rain. They are harvested like wheat, utilizing the same equipment. However, it is cleaned as it is harvested and goes straight to the "plate" as a finished product. He says it's not expensive to plant and easy to break even on sesame, and even make some money... its real value is as a cover crop for moisture retention. His other comments included rotate your crops to keep the grasses out and you will get no dockage at market. Double cropping is always a winner. Cover crops keep rainfall in the field, and planting through the cover crop will build a better soil. It pays to hire a certified seed wheat cleaner.

Horn Canna Farm, Carnegie, OK ~ Dustin Snow

Dustin Snow began our tour of their canna bulb farming operation by relaying their family history. In the 1920s, Dustin's aunt from DeQueen, Arkansas, sent bulbs to his grandparents. They planted these original bulbs, and from them, harvested and peddled canna bulbs and vegetables during the depression. However, at that time, they were making more money on the flowers. His parents eventually traded a Jersey cow to his grandfather for the Canna Flower Company and the farm, in 1946. They sold their bulbs to the TG&Y stores, Gurvey's, and Henry Fields. Eventually, irrigation was added with pipe purchased from Montgomery Wards! His family had the first well in Caddo County.

By 1976, the family had increased the original farm to 115 acres and had greatly expanded their customer base to include large bulb distributors. Currently, they are shipping out over 2 million bulbs to a bulb farm that supplies Wal-Mart and they can even boast to shipping their bulbs to Holland, France, Greece and Thailand. They still ship to "mom and pop" garden centers as well, and consider them important customers. Over 4 million bulbs are sold total. Bulbs sold over their website average \$2 a bulb; whereas bulbs sold in bulk only bring 30 cents wholesale.

The planting of 30 varieties of bulbs is accomplished with a four-row planter that drops bulbs down a shoot. Then, two applications of broadcast urea fertilizer are applied for a total of 450 pounds. A 6.6 soil pH is considered desirable. There is only one harvest cycle per year, averaging 30,000 bulbs per acre. The special-made machinery used to harvest these bulbs resembles a potato-digger type of machine. Bulbs are handled twice; first in a general wash area that takes out the trash, and then the bulbs are placed into crates. Storage areas in their old barns must be kept at a temperature of no lower than 40 degrees and no higher than 50 degrees. Maintaining temperatures is one of their major concerns and heaters and fans are used in the barns. The bulbs must not freeze. On days when the harvest

gets rained out or when harvest is over, the bulbs are rewashed and sorted. They are ready for shipment at this time and placed in plastic crates. Migrant farm workers are utilized in their canna bulb farming operation.

Museum Tour of Stafford Air and Space Museum, Weatherford, OK

Our group then traveled to Weatherford, OK, where we enjoyed touring the Stafford Air and Space Museum. This event was generously sponsored by SS Farms, Inc. and Dean Smith - OALP Class III. Area OALP alumni treated us to a wonderful meal and joined us for an evening of many interesting speakers. We appreciated our alumni for taking the time to join us and for graciously welcoming us into their homes as our host families.

October 15, 2010

Scribe: Jessica Wilcox

Sweet Potatoes

Mr. Jerry Self- RD Offutt - Our first stop was at a Slagell farm to meet Mr. Jerry Self. Mr. Self is a graduate of a program similar to OALP in Louisiana (LALP). Mr. Self coordinates production and harvest of sweet potatoes for a company called RD Offutt. Sweet potatoes have been grown in Louisiana for several decades. RD Offutt is growing 250 acres (with a goal of 500 acres) of sweet potatoes in the Hydro area for a ConAgra plant 550 miles away in Delhi, Louisiana. These sweet potatoes will be used to make French fries. The ConAgra plant is currently at about 25% production capacity, leaving lots of room for expansion of sweet potato production in Oklahoma.

There are two main varieties of sweet potatoes being tried in Oklahoma this year: Beaugard and Evangeline. Sweet potatoes grow for about 130 days before digging begins. The “seed” potatoes are allowed to grow to about 12” tall, then cut off even with the ground and transplanted to the field where the crop will be grown. It takes about five days for the transplants to “look alive” again once planted in the field. During transplanting, a crew typically consists of 35 people. Sweet potatoes do not take a lot of nitrogen fertilizer to produce. In fact, only about 40 units of N (nitrogen) are used per acre. The foliage of the sweet potato plant is cut off about five days before the mature potatoes are dug to increase the sugar content of the potato. The sugar content goal is around 3.5%. Sweet potatoes are mechanically harvested using a typical potato digger. These are a pull-behind type of PTO-driven implement. On a typical day one digger can dig 12 acres, but the goal is 20 acres per day. After the potatoes are dug, they are sorted and culled in the field by seasonal labor, a typical crew being around 14 people per day during digging. The potatoes are loaded directly onto a refrigerated trailer to start the trip to Delhi. Once at the plant in Delhi, they will be offloaded onto a conveyor-type trailer and processed.

A bushel of sweet potatoes weighs 50 pounds. A typical yield per acre is 550 bushels resulting in 27,500 pounds (13.75 tons) of harvested crop per acre. Mr. Self’s target goal for the Hydro area is 600 pounds per acre. At the plant, the potatoes are worth \$0.16 per pound. Using the above figures from Mr. Self, that figures out to be about \$4400.00 per acre. On the day we were there, the crew was loading the trailers at a rate of about 30 minutes per trailer.

In Oklahoma all sweet potatoes grown through RD Offutt are contract acres. These contracts are “Act of God” contracts, meaning that the grower is not penalized by the company for no or low production, and since the potatoes are going directly to the plant and not to a fresh market, they do not have to be as uniform. Labor is the highest input in sweet potato production here. The rent per acre is premium also. After the sweet potatoes have matured and are “harvest-ready” the logistics depend heavily upon the plant in Delhi. The plant coordinates the trucks to keep their plant producing. This can be a problem when the grower is facing rain or frost and needs to get their crop delivered in a timely fashion. There are several reasons that RD Offutt chose the Hydro area for sweet potato production; the winters are severe enough to kill bugs and fungi, overhead (pivot) irrigation (potatoes don’t like “wet feet”), the sandy soil (ease of harvest), and proximity to I-40. If the crop continues to be successful, there is talk of building a storage facility at a strategic location.

Peanuts-Mr. Beck Johnson- Johnson Agronomics

For our second stop we met Mr. Beck Johnson of Johnson Agronomics for some peanut information.

There are three different types of peanuts grown in the Hydro (and Oklahoma) area and they are:

Spanish - typically smaller nut, used for confectionary purposes, highest oil content, 140-150 growing days to maturity, seed count: 1000 seeds per pound. In 2009, there were 5000 acres planted and in 2010 there were 8800 acres planted in Oklahoma. This peanut is the third most profitable per acre.

Runner - most years this peanut is the most common in Oklahoma, commonly used for peanut butter. It is a 150+ day till maturity nut. Seed count: 800 seeds per pound. In 2009, runner accounted for 28% of the state peanut crop. This is the second most profitable per acre.

Virginia - These are the largest and hardest to grow peanuts. They are also known as "Ballpark" peanuts. Seed count: 600 seeds per pound. In 2009, 3000 acres of Virginia peanuts were planted in Oklahoma. In 2010, 5600 acres were planted. Virginias are the most profitable per acre...when you can grow them.

Custer, Blaine, Caddo, Greer, and Beckham counties account for 50% of the Oklahoma peanut crop.
#1 - Caddo #2 - Beckham #3 - Greer #4 - Custer

Peanuts have been grown in the Hydro area since the 1940s.

The aquifer that the producers in Hydro use to irrigate is a formation of Rush Springs Sandstone. This water allows 16 different crops to be grown in the area, making it one of the most diverse production areas in Oklahoma. Irrigation wells average between 290 and 300 feet deep. These wells produce 250 to 1000 gallons per minute (gpm) with an average of 400-500 gpm. When asked how the aquifer is holding up and recharging, the consensus is that it is doing well. According to studies, some recharge is relatively local, but it is also getting some recharge water from an unknown source/area.

Peanuts use 18" to 20" of water per year. Disease is a huge concern, especially in Virginia peanuts. Some soil-borne diseases can stay viable in the soil for a long period of time; the two diseases of biggest concern are Sclerotinia Blight and Southern Blight. It is for this reason that peanuts are used in rotation and not popular as a continuous crop.

Peanuts are usually planted in early May to early June. A total of 80 to 100 pounds per acre is an average planting rate. Peanuts are planted on 36" rows with the goal of 4-6 seeds per foot. Peanuts are a legume which means that they actually "fix" nitrogen from the atmosphere and add it to the soil (other legumes are soybeans, peas, alfalfa, etc.). When planting a legume, it is beneficial to inoculate with rhizobium (specific strains of rhizobium for specific crops), that is added to your seed to promote nodule development and therefore more efficient production. Another problem is herbicide resistant weeds and the lack of herbicides labeled (and researched to be labeled) for peanut production. Primrose and mare's tails in the area are showing signs of glyphosate tolerance and some pigweeds (palmer amaranth, redroot) are showing signs of ALS tolerance. This poses a problem for moisture/nutrient/sunlight competition and harvesting ease for the peanut crop. Soil-borne fungi are a big issue in peanut production. It typically takes 4-5 applications of fungicide per growing season. Nematodes are a parasite that can cause yield problems in peanuts, Mr. Johnson has not seen too much of this damage because of the rotations used. Typical input costs are between \$550 to \$600 per acre on irrigated land.

To tell if a peanut is ripe or not, producers use the "Hull Scrape Method". If a scraped hull is dark brown/black, the peanut is ripe. If the hull is orange, it is not quite mature.

Peanuts are freeze-sensitive. Above 20 degrees Fahrenheit, not much injury is sustained if the peanuts are still in the ground. Once the peanuts are dug, even temperatures in the mid 30s can damage the crop.

Harvesting peanuts takes specialized equipment. A new peanut combine costs about \$300,000 to \$350,000. After a peanut is harvested, it is offloaded onto a solar trailer to dry. Once the nuts are in the trailer, the trailers are not moved much to prevent settling and therefore uneven drying until they are ready to go to the transfer station. The peanuts are dried in the solar trailers 5 days to 3 weeks, depending on weather conditions. A solar trailer will carry 5.5-6 tons.

Morning break at Triple S Farms

At Triple S Farms (Dennis, Meribeth, Virgil, and Chris Slagell) we received a quick overview of a large-scale watermelon harvesting system and some insight on spinach and greens (collard, turnip, and mustard) production. Like many of the producers in Hydro, the Slagells are known for being innovative and forward-thinking not only in an agronomic sense, but in their equipment, also. If there is not an efficient way to harvest the crop, or get the harvested crop from the field to the processor, then the Slagells have or are in the process of inventing one!

At this stop we also were treated to some wonderful homemade cinnamon rolls made by Allen Entz's sister - yum!

Doug Eichelberger- Transfer Station

Doug Eichelberger runs the transfer station in Hydro. Producers bring their peanuts here in the solar trailers for grading/sampling and shipping to the processor. As a solar trailer is pulled over the scales, the trailer is tagged with an orange tag that has the variety, producer name, farm number, sample puller ID number, crop year, etc. Samples are pulled as the peanuts are loaded onto a semi trailer at one sample per minute. Samples are separated down until it reaches a 1000 gram sample for the entire solar trailer load. The official sample is bagged and sealed with the licensed sampler's seal. Producers are paid on the nut itself. Hulls and dirt are deducted. The thinner the hull equals a better grade. Peanuts are graded on a sliding scale, based on a 72 grade. A grade of 73 is a bonus while 71.5 is a deduction. Most of the seasonal help Mr. Eichelberger employees comes from South Africa on an 11-month visa.

Merlin Schantz- Pepper Production

Things are a little hot on Mr. Merlin Schantz farm. Peppers are grown for capsaicin (the chemical that makes a pepper taste hot). The capsaicin is food grade; therefore no pesticides are used on this crop. Approximately 30% of the capsaicin harvested here will be used for pharmaceuticals and 70% will be used for food. Rodent repellent, bug killer sprays, heat rubs, shingles rubs, etc, are all products that use capsaicin. Ocala is the variety grown here and it has 8 years until the patent runs out. An orange habanera has 0.5 million Skoville heat units in its capsaicin. To put that in perspective, Ocala has 5 million Skoville units in its capsaicin. The more capsaicin in a pepper the better the economics are...more return per acre.

Interesting fact: Did you know that it is actually an enzyme in a person's saliva that reacts with the capsaicin to get the hot sensation? True story according to Dr. Jim Motes, Ph.D. Dr. Motes works with Mr. Schantz as a liaison between the grower and the processor in Michigan. A pepper is hottest when it is orange. Another wives tale about peppers is that the seeds are where the heat is; actually it is surface contamination from the tissue of the pepper that makes the seed hot.

Ocala pepper plants are started in Plant City, Florida, in April, and then sent to Oklahoma to be transplanted before May 10th. The cost is approximately \$0.25 per plant. Around 20 acres per day can be transplanted by one crew. There are approximately 9,600 to 10,500 plants per acre, and each plant produces about 1000 pods per plant. The #1 stress on peppers in Oklahoma is water; 21-22 inches of water are needed per crop. The contract is 3000 pounds per acre. These contracts are "Act of God" contracts also. Mr. Schantz mentioned that he also takes out NAP coverage on his peppers and other vegetable crops, but that it is not worth the money he pays yearly for it (\$250 per crop, up to \$750). Peppers are grown for the capsaicin in Denver City, Texas, and Hobbs, New Mexico for the same company as here in Hydro. Dr. Motes said that the peppers grown in the high country of Texas and New Mexico are actually higher in capsaicin than what is grown here due to cooler nights.

Mr. Schantz harvests his peppers using a modified 9600 John Deere combine. This machine is modified so that instead of using augers to move the peppers through the machine, a fan blows the peppers through the machine reducing harvest loss and damage to the pepper from the separator. This year due to increased demand, the company asked Mr. Schantz to harvest some of his crop early. To do this Mr. Schantz swathed part of his crop, allowed it to dry in the windrows, and ran it through the combine using a pick-up header. Usually, they wait until after a killing frost, and harvest it with a soybean header.

After combining, the peppers are taken to Dean Smith's farm in Hinton, Oklahoma, and dried down farther, bagged, and shipped to Michigan where the capsaicin is extracted, encapsulated in vegetable oil, and marketed.

While at the Schantz farm, Dr. Lynn Brandenberger talked to us about the OSU Horticulture Extension Program and how they encourage a producer/research symbiotic relationship.

A little history of agriculture in the Hydro area was discussed at lunch.

Center pivot irrigation revolutionized the Hydro areas agronomy and economy.

Approximately one million bushels of wheat are delivered to the Hydro Cooperative annually. This has some impact on the local economy, but not as much as the vegetable crops. This is attributed to all the labor needed in the vegetable crops.

Custom spraying is a benefit to the local economy also. Between the vegetables and peanuts, there are many acres sprayed several times per year.

Water use permits are becoming an issue, and are expected to only become harder to get. Producers encouraged us to keep water issues in mind when voting for candidates.

Moving the Hydro Food Pantry to its New Location

We helped move and set up the food pantry at its new location in the old high school. It was really neat to see us put our leadership skills in action to meet a common goal quickly and efficiently.