

ALFALFA IN OUR DAIRY OPERATION

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Welcome to Robey Farms. Our farm has been in our family for six generations. The farm was founded by my great grandfather, Herbert Robey, in 1899. Four generations live and are actively involved in the farm operation today. My mom and dad, Jane and D.L., my wife Denise and I, our oldest son Chris and his wife Jessica and three grandchildren, Jessalyn, Ethan, and Whitley, our middle son Adam and his wife Amanda, our youngest son Eli, who is a Sophomore at U.K. majoring in Ag. Economics, and my older brother Carr.

Our farm consists of 7500 acres. Approximately one half of that is owned and one half is leased. Our main enterprises are dairy, grain, and tobacco. The dairy consists of 960 mature cows with 1200 more of young stock. Our cropping for 2005 will consist of approximately 4000 acres of corn, 500-600 acres of that being chopped for corn silage. 2600 acres of wheat and barley that will be double-cropped in soybeans, 450 acres of alfalfa, 500 acres of pasture and hay, approximately 150-175 acres of tobacco.

Our alfalfa program is very important to our farm and especially important to our dairy herd. We try to plan ahead at least 2 years in advance to establish a new stand. We prefer fall seeding and usually seed between August 10 and September 10. Our preferred seeding method is to harvest wheat in late June. Then we like to lime with 2½ - 3 tons and till the soil. In some years we will harvest corn silage in late July and lime and prepare the seedbed. We till the ground with John Deere disk rippers that do a good job of breaking up any compaction that could be in the soil. Then we like to use a field cultivator because it does such an excellent job of leveling the ground. After one pass with the field cultivator, we will use disc and roller to make a firm seed bed that will retain moisture. We are always watching new alfalfa varieties and considering new varieties that will work in our program for yield and quality. Currently, we are using 403T and FK421.

Our farm supplier dealer will blend our alfalfa seed with fertilizer and spread it on our fields with an air truck. Our seeding and fertilizer are 25 pounds of coated seed, 200 pounds of 11-52-0, 300 lbs. 0-0-60, 2 lbs. Boron, 5 lbs. of Sulfur, 40 lbs. of a complete micronutrient mix. Then we roll that seed in with Brillion rollers and also a John Deere roller harrow. It is very important not to get the seed too deep, ¼ to ½ inch. For us, that usually requires about 3 passes with the rollers. This gives us excellent seed to soil contact and leaves a very firm seed bed. That conserves moisture and prevents erosion. It is very important that the blenders, tinder trucks, and the air trucks

that are handling the seed and fertilizer mix aren't contaminated with any other seed or chemicals.

Hopefully, before we seed, we would have good moisture and then again enough rainfall for the seed to germinate. If necessary, we will irrigate to get our seeds well germinated. We have a hard hose irrigation machine that applies approximately $\frac{3}{4}$ of an inch per acre per hour. Hopefully, approximately in 14 days, we will have good emergence and at that time we will apply an insecticide to keep aphids and insects off the young plants. I feel that this is very important. In years past, I have seen when we have had a very good stand of young plants and that little shot of insecticide just gave it a rapid growth boost. We have never harvested a fall seeded stand until the next spring. Our 2003 seeding was extremely large and should have been harvested. We considered it with our '04 seeding but the weather turned cool in the late fall, slowing growth. The fields were also too soft for the equipment. By fall seeding, we are able to get a full year's production starting the next spring.

In the spring, we scout for alfalfa weevils very early. In southern Logan County, if we have warm temperatures in late February and early March, we will have weevils. We take a preventative instead of a curative method with alfalfa weevils. Most years we do a split application of insecticide to give us complete control.

We cut all of our alfalfa with 946 John Deere mower-conditioner with urethane rollers. We have operated two of these 14 ft machines in the past and will begin to use 3 machines in 2005. When the weather conditions are right and the crop is good, we want to be able to cut the alfalfa quickly. We will spread some and windrow some depending on the weather and the density of the crop. As simple as it may seem, we have not figured out the raking or windrow merging. There are so many variables with the crop and the weather. We use a Kuhn rotary rake, a New Holland 12 wheel rake, 2 New Holland row bar rakes with a caddie and a New Holland windrow inverter.

We make haylage out of all of our alfalfa. It is chopped with a John Deere 7300 chopper and bagged in 10 ft. silage bags. This chopper gives us a lot of flexibility in length of cut. 1½ inches seems to store and feed better than a longer cut. An inoculant is applied to the crop at the feed rolls of the chopper. We will chop alfalfa at 30-50% dry matter. We would prefer to have it all in the 45% DM range.

Now what we have harvested and stored the alfalfa haylage, I will back up and address the cutting schedule, herbicide, insecticide and fertility program. 2004 was a very challenging year to harvest alfalfa but quality was good. Granted, it is easier for us to make haylage than it is for any producer to make dry hay. Our biggest concern with all the moisture with 2004 is that we were in the fields with heavy equipment on several occasions when the soil was too wet. We are very interested in alfalfa varieties that can handle traffic under these conditions. Our cuttings were made in '04 as follows:

1 st	4-25 to 5-5
2 nd	5-25 to 6-1
3 rd	6-22 to 7-11
4 th	7-26
5 th	8-23
6 th	9-15
7 th	11-15

The long period after the fall cutting was because of the dry weather in September, the cool temperatures in October, and then wet weather in late October and early November.

7-10 days after each cutting, we apply 3 gallons of 3-18-18 with micronutrients, $\frac{3}{4}$ rate of insecticide, with 5 gallons of water, giving us an 8 gallon spray rate. We want to leave as much of this treatment as possible on the tissue of the plant. We feel like this program is really giving the regrowth a big kick. We follow this for the first 6 cuttings.

14-21 days after the third cutting, we will use a post-emergence grass herbicide where needed to control johnsongrass and crabgrass. In the fields where broadleaves are a problem, we will use Pursuit or Raptor which will give us residual control for the rest of the season. It is very important for forage quality and dry matter intake into the cows that these alfalfa fields are free of weeds and grasses. We work hard and spend a lot of money on herbicide programs on our grain and tobacco crops and it is equally or more so important with alfalfa.

We will soil test in the fall and apply fertilizer impregnated with Sencor in late January when the alfalfa is dormant. This mix is applied with an air truck and we have very little crop injury because there is little material on the plant. This program controls winter annuals and the first cutting is clean to improve quality.

Our nutrition program for our lactating dairy cows is built around alfalfa haylage and corn silage. We feed a total mixed ration that consists of alfalfa haylage, corn silage, whole cottonseed, and a grain mix. The grain mix consists of 30% dry shelled corn, 18% soybean meal, 20% soybean hull pellets, and 32% of high energy concentrate. There are 2 concentrates, high energy and low energy, 2 grain mixes, and four TMR mixes fed to the eight different production groups. The second grain mix is 30% dry shelled corn, 15% soybean meal, 20% of soybean hull pellets, and 35% of a low energy concentrate. The production groups are as follows:

Group 1	50-75 head	00-30 DMI
Group 2	90 head	30-80 DMI
Group 3	170 head	100 DMI
Group 4	175 head	140 DMI
Group 5	175 head	210 DMI
Group 6	175 head	300 DMI
Group 7	20 head	Bedded pack lame cows
Group 8	20 head	Dump pen

The TMR is balanced at 46 lbs. DM and increased on consumption. DMI range from 46 lbs. to 60 lbs. The TMR average on a DM basis is 10 lbs. alfalfa haylage, 14 lbs. of corn silage, 25 lbs. grain mix, as fed, and 3 lbs. whole cottonseed.

Alfalfa quality ranges from 20-25% protein on the 1-3 year old stands, and 18-20% on the 3-6 year old stands. TDN's range from 58-67%. Our best cuttings were on 8-23-04 at 24.7% protein and 67% TDN. The November 15 was 23% protein and 66% TDN.

Dry matters are checked daily to insure that rations are delivered to the cow properly. Chris and Adam use a Koster Crop Tester. Haylage varies much more than corn silage. Corn silage is tested weekly. The grain to forage ratio is also off which is not economically sound, but even more dangerous, is the risk of LDA's and the possibility of hemorrhagic bowel syndrome or clostridium from slug eating and drastic rumen pH changes, resulting in cows off feed or dead.

Forage nutritional quality is an economic issue. Forage condition quality is a dry matter intake issue. Cows are most productive in milk, reproduction and health when both are maximized.