

USE OF A DESICCANT ON ALFALFA HAY -
A HAY GROWER'S/DAIRYMAN'S EXPERIENCE

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I was first introduced to a hay desiccant at last year's California Alfalfa Symposium in Fresno. That presentation was given by Mr. George Fenn of Oregon. The product was based on research done in Australia with further development by his organization.

The product efficacy had been corroborated by university research at four different locations across the United States in the summer of 1981--a fact I found rare indeed on a product that new. I also talked at some length with Dr. John Shenk of Pennsylvania State, who had tested some samples of hay that were treated with the material. He verified that moisture evacuation from the green hay was speeded up as well as the fact that the baled hay yielded a slightly higher level of total digestible nutrients (TDN) and protein than untreated hay.

We harvested our hay with a Hesston 6610 Swather with a 14-foot header. Modifications to the unit to apply the desiccant cost approximately \$1,200.00. They included:

1. 150 gallon Pak-Tank.
2. 14 foot spray bar with cone nozzles on 6-inch centers.
3. Pump driven by auger drive shaft.
4. Solenoid valve and pressure regulator remote control in cab.

In addition we had on hand a 500 gallon tank wagon trailer with a pump which we used for a premix and nurse tank.

The push bar for use in tall crops was augmented with a second bar located about 8 inches above and 36 inches ahead of the cutter bar. This bar pushes the standing alfalfa over to expose the stems at an angle. The nozzles above spray straight down from a height of 27 inches above the ground and 29 inches in front of the cutter bar. The object is to direct the desiccant at the stems because it works by disorienting the wax layer on the stems which allows them to dry almost as rapidly as the leaves. At one point this summer we compared nozzle types for effectiveness of spray application. The flat 90° Tee Jet increased drying time by 25 to 40% when compared to the cone-type nozzle that emits a swirling mist. This finding was consistent with desiccants from two different manufacturers.

Comparison of Harvest Timing

| | Material | Cut | Rake | Bale | Baling moisture |
|----------------|------------------------|-----------|-----------|------------------------------|-----------------|
| In past year's | None | Monday | Friday | Sunday | 15% |
| May | Conservit Full rate | Monday | Thursday | Thursday p.m. Friday a.m. | 16% |
| | Conservit | Wednesday | Friday | Saturday a.m. | 15.2% |
| | Pro Cure | Monday | Thursday | Saturday a.m. | 16.4% |
| | Conservit 1/2-2/3 rate | Monday | Wednesday | Thursday a.m. | 13% |
| August | None | Monday | Friday | Sunday a.m. | 15.5% |
| September | Conservit 75% + rain | Monday | Sunday | Monday a.m. | |
| October | Conservit 100% | Monday | Friday | Friday p.m. | |

Points to observe about a desiccant:

- 1 Weigh sample - dry down - weigh again and calculate moisture. The feel and peel method is not accurate.
2. Either use a desiccant or don't. Dry down time is shortened with a desiccant. If you don't treat as you cut on Monday and you do treat as you cut on Wednesday, it may all be ready to bale on Saturday.
- 3 Spread the swath out as wide and flat as possible as you cut. Direct sun dries hay out faster.
4. Rake at 25% moisture and bale as the next dew comes in. If the hay gets wet after raking it dries very slowly.

We found the desiccant to soften the stems a great deal. Drying time in the first 24 hours wasn't much different than untreated hay. However, the next 24 hours the hay dried very quickly. Then, after the hay was raked and fluffed up it got to baling moisture very quickly.

Our alfalfa hay yields in past years have run from 8.5 to 10 tons per acre--dry baled basis. This year we have baled up 11.48 tons per acre on 300 acres through November 1. Part of the yield increase is as a result of a desiccant as we have been out of the field with the bale wagon in four or five days instead of six, seven or eight days. The regrowth is not as tall when the last traffic leaves the field and crown damage is not as great. Stand persistence also seems to be significantly improved this fall.

How does it feed? All dairymen look for lush, green, leafy, soft alfalfa hay. Our hay this year has been just that when treated with a desiccant. Our cows have relished this hay like no other and cleaned the mangers like a vacuum. When we feed untreated hay we clean up the leavings each morning. Average production in the herd is up 2.3 pounds of milk per day. Rolling herd average is up from 18,047 pounds of milk to 18,459 pounds. Average fat is up from 633 to 671 pounds.

Analysis Comparison, Alfalfa Hay, 1982¹

| | April #8 | May | June #7 | July #9 | July #7 | Pro Cure | Conservit |
|----------|-------------|--------|------------|------------|------------|----------|-----------|
| Moisture | 18% | 10.12% | 8.4% | 3% | 6.7% | 5.0% | 4.0% |
| Protein | 23.6 | 19.87 | 18.83 | 21.24 | 18.19 | 18.15 | 16.77 |
| TDN | 69.04 | 62.89 | 60.6 | 59.42 | 58.30 | 57.94 | 59.01 |
| Fiber | 29.08 | 23.30 | 24.64 | 29.47 | 27.73 | 31.68 | 33.71 |

¹Data compiled by Triple S Laboratories, Loveland, Colorado, based on 100% dry matter.

As we look to next year, we do intend to use a desiccant on our early hay cuttings in April, May, June and very early July and later in September and October. Those times when high humidity or rain can make high quality hay a chancy proposition we will use a desiccant to lessen our field exposure time. In July and early August we get a rank growth of hay that we normally use for heifers and we will not go to the expense of a desiccant on that hay.