

## **OVERSEEDING ORCHARDGRASS INTO ALFALFA**

Jim Morris<sup>1</sup>

### **INTRODUCTION**

The Bryan Ranch is located in Scott Valley, Siskiyou County, California about 30 miles south of the Oregon border and 20 miles west of Interstate 5. At 3000' elevation we average 143 frost free days (28 degree frost-free days) with an average annual rain fall of 22" (14" - 32" is the range). This family ranch is a cow/calf and hay operation. There are currently 380 acres under irrigation; 120 acres of fescue and clover pasture (which are occasionally hayed) and 260 acres of hay ground irrigated by overhead sprinkler (wheeline) irrigation.

The main goal of the ranch is to produce quality hay for sale. Cows are used to browse un-farmable ground, to eat aftermath from hay fields in the fall, and to consume off-quality (rain-damaged) hay. The crop of choice for our area is alfalfa, with cereal grains used as a rotational crop. Typically, 3 cuttings (occasionally 4) of alfalfa are harvested with yields expected around 5 to 6 tons to the acre. Alfalfa stand persistence is very long, with many stands continuing to produce acceptably for 8 to 10 years. When yields begin to decline, it has become common practice to overseed orchard grass into the alfalfa, a practice that can increase the stand life a few more years. Many growers do not strive to produce dairy quality alfalfa hay in this area due to the long distance to dairies. In this area the premium paid for dairy quality hay seldom overcomes the loss in yield associated with cutting alfalfa early.

### **BENEFITS OF ORCHARDGRASS/ALFALFA MIXED STANDS**

Orchard grass/alfalfa mixed fields have many benefits over straight alfalfa in this area, and for our type of operation. Weeds are generally not a problem in a strong stand of orchardgrass/alfalfa. In most fields, herbicide application is unnecessary. Yields are higher in a mixed stand, sometimes dramatically (up to 8 ton per acre). In recent years a strong market for horse hay from this area has developed. Good quality orchard grass/alfalfa hay brings a price comparable to good quality alfalfa while very good quality grass/alfalfa bring prices comparable to dairy quality alfalfa. For horse hay, quality usually means color, with bright green hay being the most desirable. Orchardgrass hay, particularly second and third cuttings, meet this criteria; the hay often appears dark blue-green in color. Most buyers prefer hay that is 50% alfalfa and 50% grass. Another benefit of adding grass is a decreased chance of cattle bloating while grazing these fields, providing more options in times when pastures may come up short.

### **ESTABLISHING A MIXED HAY FIELD**

The two most common practices for establishing alfalfa/orchardgrass stands are 1) to seed orchardgrass together with alfalfa at planting or 2) to spring overseed orchardgrass into lightly tilled established alfalfa. Some problems may be encountered with these practices. When

---

<sup>1</sup> J. Morris. Bryan Ranch, Etna, CA 96027; In: Proceedings, 28<sup>th</sup> California Alfalfa Symposium, 3-4 December, 1998, Reno, NV, UC Cooperative Extension, University of California, Davis.

orchardgrass is seeded together with alfalfa, the orchardgrass tends to out-compete the alfalfa, even at a very low orchard grass seeding rate (2-3 pounds per acre). The resulting hay mixture is high in grass and often less salable. This practice also limits the herbicides that could be used to reduce weeds in the new alfalfa stand. Spring overseeded orchardgrass does not produce enough grass to produce the desired mix the first year, and the limited amount of grass is insufficient for effective weed suppression.

In August of 1996, at the prompting of University of California Farm Advisor Steve Orloff, we overseeded a 50-acre strong (eighth year) alfalfa stand with orchardgrass. We used a grain drill to plant 10 pounds to the acre of a late-maturing variety of orchard grass (Hallmark) in recently irrigated ground after removing the second cutting of alfalfa. The grass germinated and was 2 - 3" tall when the third and final cutting was taken in mid September. One more irrigation (1") was applied after this cutting for the benefit of the grass-seedlings.

### **PRODUCTION PRACTICES**

Nitrogen was applied as ammonium sulfate in May at the rate of 60 units of N/acre. The first cutting contained some mustards (Shepherd's purse, black mustard) and Persian speedwell, but herbicides were not applied and the hay was very acceptable. Another 60 units of N were applied after the first cutting was removed. Subsequent cuttings were clean and a yield of 8 tons per acre was realized. Another 40 acres was overseeded in the same way in 1997 with similar results.

Some benefits of this practice are that no field preparation is necessary and the grass component of the hay the first year is high (near 50%). Weeds appeared to be controlled well, possibly due to the new grass growing over the winter to provide a more complete canopy early in the year.

There are some concerns with overseeding orchardgrass into alfalfa. Harvest must be done in a timely manner, as the quality of orchardgrass declines rapidly after it flowers. Orchardgrass will out-compete alfalfa, so stand life extension is not indefinite. Eventually the stand will consist of mostly orchard grass and will be less salable. The shallow root system of orchardgrass is less tolerant of drought than alfalfa, so fairly frequent irrigation is necessary to maintain a strong orchardgrass/alfalfa stand. Nitrogen, although not necessary, will greatly increase yields and the percentage of grass in the hay and, while this may be seen as an added expense, the savings in herbicides may offset this expense. Alfalfa weevil control hasn't been necessary in the orchardgrass/alfalfa stands.

Putting up orchardgrass/alfalfa hay is not the same as putting up straight alfalfa. Both the length of curing time and the baling conditions are altered by continued transpiration from the grass plants below the cut hay. As these plants transpire, they allow moisture to escape into the windrows above them, increasing drying time and making it necessary to rake the windrows once, or often twice, more than would be necessary for straight alfalfa. As with all grass, complete curing of the hay is essential to prevent mold in the bale.

To bale, we turn the cured hay just after the morning dew moisture has dried from the top of the windrow and bale with the moisture that is found on the bottom of the windrow due to grass

plant transpiration. This practice allows us to control the amount of moisture, but often necessitates baling in the middle of the day.

## CONCLUSION

Overseeding orchardgrass into alfalfa is a practice that can be profitable in some areas and in some types of operations, but a few points should be considered before planting a mixed stand. Growers should determine if there is a market for this kind of hay in their area. Orchardgrass grows best in cool weather and may not be suitable in areas with very hot growing conditions. Growers should realize that a mixed stand limits the herbicides that can be used. Putting up mixed hay may also necessitate some changes in haying practices. Frequent irrigation and additional fertilizer application are necessary for maximum yield. For an operation like ours, the benefits of a mixed stand of orchardgrass/alfalfa have clearly outweighed any inconveniences.

## REFERENCES

Orloff, S. B. and H. L. Carlson. 1995 *Intermountain alfalfa management*. Oakland: University of California Division of Agriculture and Natural Resources, Publication 3366.