



Orchardgrass-Alfalfa Establishment Studies

Orchardgrass is very well adapted to much of the Northeast region, although it is occasionally susceptible to winter damage in New York, and even more susceptible in northern New England. It is reasonable to consider it for mixture with alfalfa in the region. Any grass grown with alfalfa is going to provide a healthier forage source for lactating cows compared with pure alfalfa.

In the past there were two primary reasons why orchardgrass was not popular in mixture with alfalfa. Orchardgrass matured very early, and tended to be much too mature when alfalfa reached early bud stage. The second reason is that orchardgrass is extremely competitive with alfalfa in the Northeast. Now that many cultivars have been developed that are late maturing, orchardgrass matches up a little better with alfalfa for spring harvest. A relatively low seeding rate is required, or the stand will be dominated by orchardgrass.



Figure 1. *Satin* orchardgrass in mixture with alfalfa.

Satin orchardgrass

Satin orchardgrass is a late maturing, smaller-seeded cultivar that is reputed to be less competitive with alfalfa, but the recommended seeding rate for *Satin* with alfalfa is 0.5 to 1.0 lb/acre. It is also reputed to be more palatable due to smoother leaves than normal

orchardgrass cultivars. Our objective was to compare *Satin* with a standard late maturing orchardgrass (*OKAY*) for competitiveness with alfalfa.

Methods

We compared *Satin* with *OKAY* orchardgrass at 3 seeding rates. *OKAY* seed weighed 1170 grams/100 seeds, while *Satin* seed weighed 880 grams/100 seeds. The "Low" seeding rate was 0.5 lbs of *Satin*, compared with an equal number of seeds of *OKAY*. The "Medium" seeding rate was 3 lbs/acre of *OKAY*, compared with an equal number of seeds of *Satin*. The "High" seeding rate was 6 lb/acre of *OKAY*, compared with an equal number of seeds of *Satin*. All plots were seeded with 12 lb/acre of PLH-resistant alfalfa.

Table 1. Low, medium, and high seeding rates for *Satin* and *OKAY* orchardgrass. Each seeding rate had the same number of pure live seeds for both cultivars.

Cultivar	Seeding rates		
	Low	Medium	High
<i>Satin</i>	0.5 lb	2.1 lb	4.2 lb
<i>OKAY</i>	0.72 lb	3.0 lb	6.0 lb

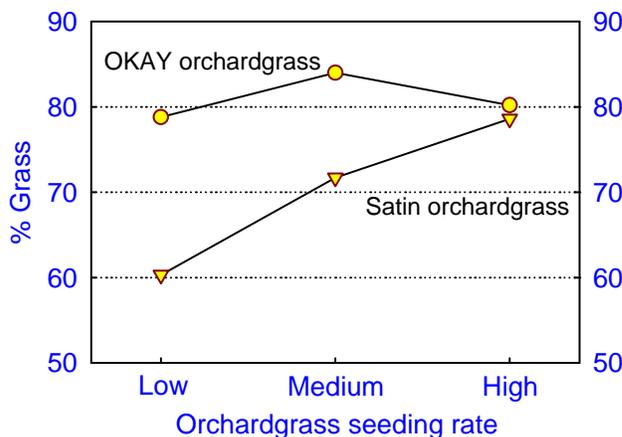


Figure 2. Orchardgrass seeding rates in mixture with alfalfa at Ithaca, NY, 2004.

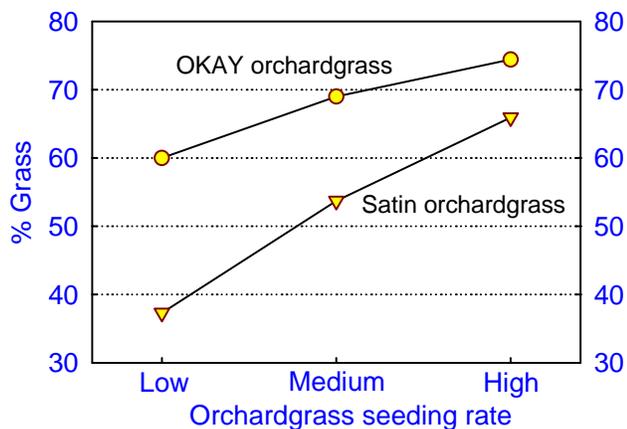


Figure 3. Orchardgrass seeding rates in mixture with alfalfa at Mt. Pleasant, NY, 2004.

Results

Spring growth in late May of 2004 was sampled and grass and alfalfa were separated and percentages determined on a dry weight basis.

Orchardgrass was a larger component of the mixture at the more productive site (Fig. 2), compared to more marginal site (Fig. 3). *Satin* was clearly less competitive with alfalfa than *OKAY*, except at the high seeding rate on the good soil (Fig. 2). The only seeding rate that resulted in less than 50% grass in the mixed stand was *Satin* at 0.5 lb/acre on a marginal soil.

Although these studies were not continued beyond the spring after the seeding year, it was assumed that the orchardgrass component of the mixtures would only increase with time, particularly with sites marginal for alfalfa production.

Vegetative orchardgrass may be better

On a good soil, *OKAY* was very competitive with alfalfa, regardless of seeding rate. Sparse-heading orchardgrass cultivars are being developed for grazing, with few seed heads produced in the spring compared to standard cultivars. As long as these sparse-heading cultivars are capable of producing good seed yields in the Northwest, they may economically feasible for distribution by commercial seed companies. Although they have not been tested for this purpose, such cultivars may be useful in mixture with alfalfa for silage in the Northeast.

Summary

Orchardgrass is very well adapted to the Northeast climate, and it would be advantageous to use in mixture with alfalfa if the amount of grass in the stand could be kept to a reasonable level.

Conclusions from this study:

1. Orchardgrass seeding rate in mixtures with alfalfa is site-dependent.
2. A half pound/acre of orchardgrass seed in mixture with alfalfa may be sufficient under good soil conditions.
3. *Satin* orchardgrass probably is less competitive, particularly at low seeding rates.

Additional Resources

- 2011 Cornell Guide for Integrated Field Crops Management. Electronically accessible at: <http://ipmguidelines.org/Fieldcrops/>.
- Cherney, J.H., D.J.R. Cherney, and D. Parsons. 2006. Grass Silage Management Issues. p. 37-49. In Proceedings from "Silage for Dairy Farms: Growing, Harvesting, Storing, and Feeding". NRAES-181. 23-25 Jan., 2006. Harrisburg, PA. Natural Resource, Agriculture, Engineering Service, Ithaca, NY.

Disclaimer

This information sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this information sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of particular discharge levels from agricultural land.

For more information



Cornell University
Cooperative Extension

Grass Management Manual
<http://forages.org>

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