



**EFFECT OF DISC AND SICKLE MOWER-CONDITIONERS ON STAND PERSISTENCE AND YIELD**

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The use of disc mower-conditioners has grown rapidly since their introduction and surpassed the sale of sickle mowers in 1997.

Despite these trends, there are still many producers who resist purchasing a disc mower because they feel this mower is too aggressive on alfalfa plants. These producers are concerned about stand persistence and yield reductions that a disc mower may cause.

With this concern in mind, a study was initiated in Wisconsin to evaluate the yield and persistence of alfalfa cut with a disc mower-conditioner (DMC) compared to a sickle mower-conditioner (SMC).

Plant stands were equal between fields cut with the DMC and the SMC with an average of 6.2 alfalfa plants per square foot. Similarly, yields were equal between DMC and SMC machines averaging 1.48 tons per acre.

Based on this study, there doesn't appear to be any more stand reduction or yield loss for a DMC compared to a SMC. However, research station staff found that the DMC allowed a faster cutting speed and earlier morning cutting with less plugging than with the SMC machine.

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**FALL-GRAZING MANAGEMENT EFFECTS ON GRASS PRODUCTION AND PERSISTENCE**

As the costs associated with animal agriculture increase, so does the interest in grazing season into the fall or early winter helps reduce animal production expenses relative to feeding hay or silage. Tall fescue has traditionally been the grass species used for fall grazing and/or stockpiling (accumulating standing forage during the growing season for use in late fall or winter).

However, other grass species which have excellent fall growth attributes may also work well for fall grazing and/or stockpiling. Our objective was to evaluate the seasonal and whole-year production of perennial ryegrass, prairie grass, and tall fescue under different fall grazing management schemes.

In 1994, 1995 and 1996 three fall-grazing treatments consisting of: 1. Stockpiled; 2. Lax (grazing once in September and then not grazing again until spring); and (3) Intensive (continue grazing on approximately 30-d schedule through November) were imposed on established stands of "Barcel" tall fescue, "Citadel" perennial ryegrass, and "Grasslands Matua" prairie grass at the Haller Livestock and Forage Research Center near State College. Swards were grazed to a residual 2 inches stubble height by mature crossbred ewes. Forage yield, persistence, and ewe grazing days were monitored throughout the study.

Perennial ryegrass and tall fescue responded similarly within and across grazing treatments. Total season yield and persistence of perennial ryegrass were equal to those of tall fescue regardless of the fall grazing management.

During the first year after implementing the grazing treatments, prairie grass had lower survival and lower total season yield in the Stockpiled compared with the other grazing treatments. By year two of the study, prairie grass had not survived in any of the grazing treatments. Poor winter survival of Grasslands Matua prairie grass in Pennsylvania makes it an unsuitable grass in perennial pastures.

Continuing to graze grasses on an approximate 30-d interval into the fall until the grasses stopped growing produced the most annual forage and consequently the most grazing days. However, unlike stockpiling, this grazing practice (Intensive) cannot extend the grazing season beyond November in Pennsylvania. In addition, spring growth of fall grazed and stockpiled grasses is less than when grasses are not harvested after September (Lax). Consequently, a combination of Lax, intensive and Stockpiled grazing may be the most desirable under similar conditions.

Recommendations: Tall fescue and perennial ryegrass were similar in performance regardless of the fall grazing

treatment. Grasslands Matua prairie grass did not survive in this and other studies in the northeast region.

Therefore, varieties with improved winter survival must be available before farmers in northern climates consider prairie grass as a viable component in perennial pastures. Using a combination of Lax, Intensive and Stockpile grazing may be most desirable. Intensive and Stockpile grazing would allow continued grazing into the fall and early winter, respectively, and Lax grazing would permit early spring grazing while the fall-grazed pastures recover.

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**HARD SEED IN ALFALFA: DOES IT MATTER?**

Questions about hard seed in alfalfa are becoming more important with increased seed production in the northwestern United States where seed tends to have higher levels of hard seed. To answer questions about hard seed, two studies were conducted at three midwest locations in 1992 and 1993. Each year four varieties with three levels of hard seed were planted at each location.

In study one, 100 seeds were planted in a ring in the ground and germinated alfalfa seedlings were counted monthly and then removed. Most of the seed germinate within the first month after seedling with very little germination in later months, regardless of hard seed level. This tells us that, when farmers ask about hard seed filling in a thin alfalfa stand, the answer is that it will not because very few seeds germinate after the first month.

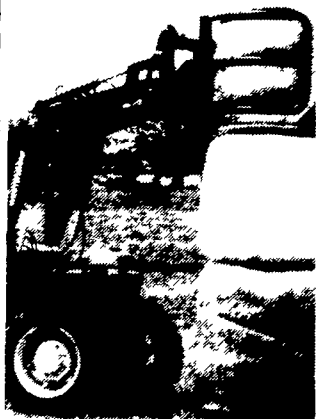
A second study looked at the effect of hard seed levels on alfalfa yield. In this study all plots were seeded at 12 lbs./a regardless of the level of hard seed. As shown in the table below, hard seed had no effect on yield in either the seeding year or the year after seeding.

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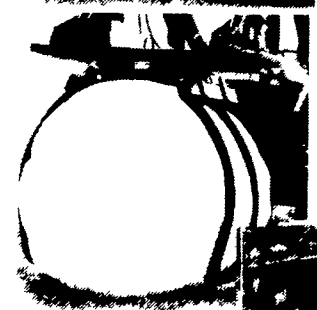


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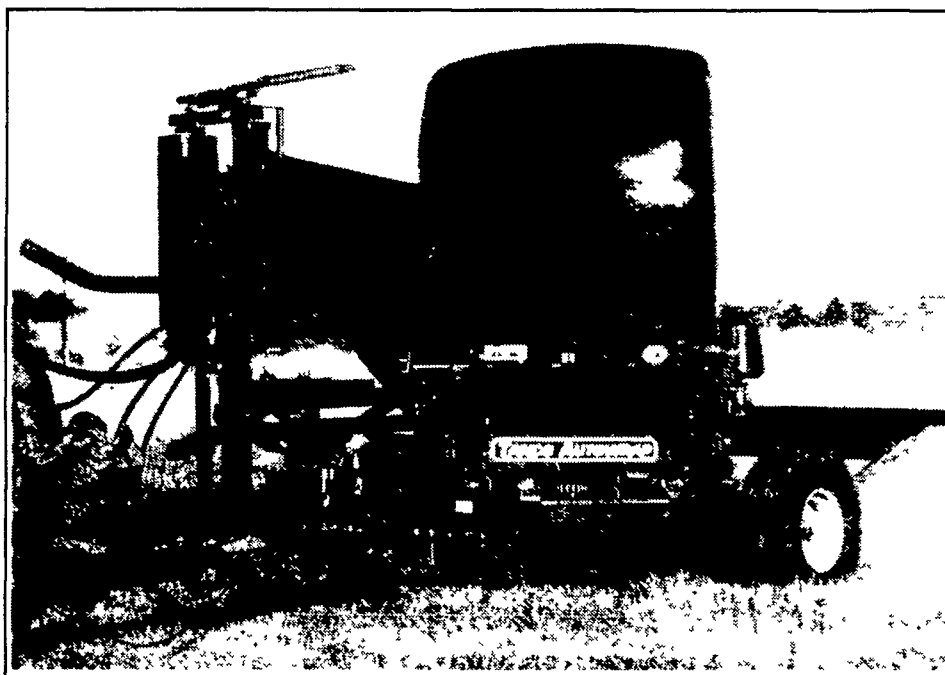
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