

# **Stockpiled Pasture: Effect of Stockpile Grazing in Fall on Forage Production the Following Season**

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## **Introduction**

Stockpiling is the practice of saving certain hay or pasture fields for grazing in the fall and winter after forage growth has stopped due to cold weather. Stockpiled pasture is also referred to as fall-saved pasture or deferred grazing. The primary reason for using stockpiled forages is to reduce feed costs. One concern that many livestock producers express is that grazing in the fall will damage the pasture, resulting in reduced forage production in future years. In this update, we examine forage productivity after one or more years of fall clipping or grazing.

## **Methods**

Spring yields following fall clipping or grazing were measured on three separate trials. The management of each trial is described below:

- i) In the first trial, small research plots of pure grass (5 species) were clipped either on September 1, October 1, or November 1 for three consecutive years (1994 to 1996). The grass plots had been stockpiled under two management systems: a Hay system which consisted of a single cut in early July followed by stockpiling, or a Pasture system, which consisted of simulated pasture harvests in mid- June and late July, followed by stockpiling. In 1997, all plots were allowed to grow unharvested until early July at which time they were harvested and yields recorded.
- ii) In the second trial, lambs grazed paddocks of stockpiled pasture mixtures (mainly tall fescue, smooth brome grass, reed canarygrass, and bluegrass) weekly from early October until late November in each of 1995, 1996, and 1997. The mixtures had been stockpiled under one of two management systems: an Early system which consisted of a silage harvest in mid-June followed by mob grazing by sheep in mid-July followed by stockpiling; or a Late system which consisted of a silage harvest in mid-June followed by mob grazing by sheep in mid-August followed by stockpiling. In mid-June of 1997 and mid-May of 1998, forage yield measurements were taken from paddocks that had been grazed in early October, mid-October, early November, and mid-November the previous year.
- iii) In the third trial, beef cows were strip grazed across mixed pastures from early October to mid-December in 1997. Fresh pasture was allocated daily but no back fence was used so cattle had continuous access to the previously grazed area. In late May, 1998, pasture yield measurements were taken in areas previously grazed in mid-October, late October, mid-November, late-November, and mid-December. Yield

measurements were also taken from an area where the stockpiled forage had not been grazed the previous fall.

## Results

- i) After three years of clipping on either September 01, October 01, or November 01, hay yields the following spring ranged from 6500 kg/ha to over 8000 kg/ha

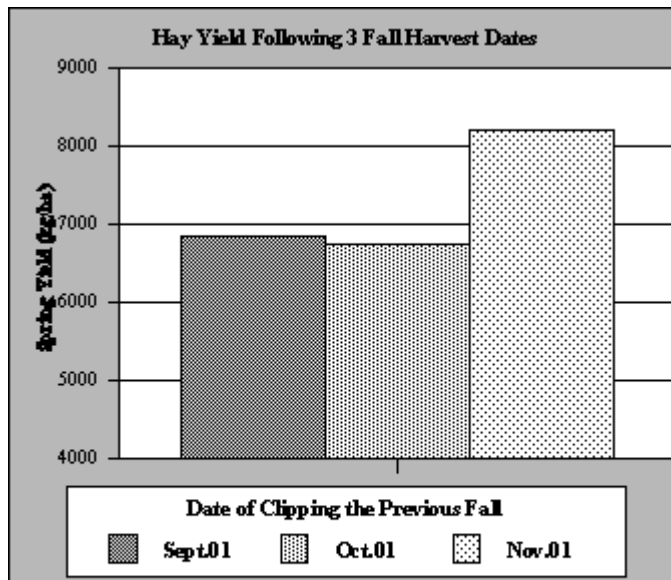
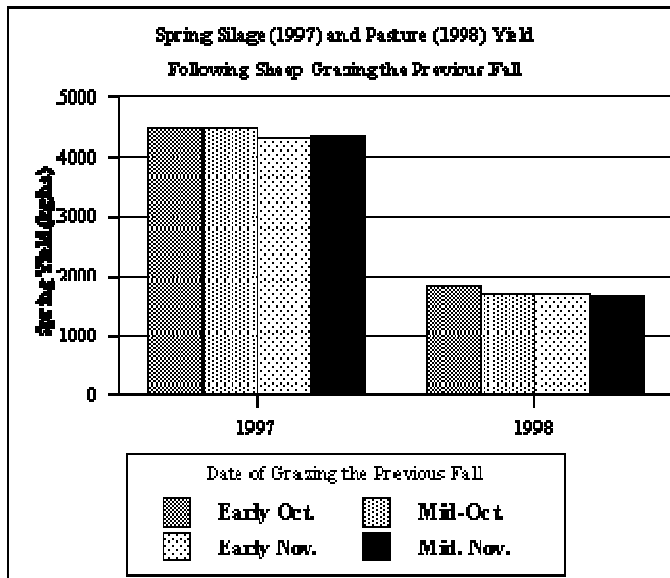


Figure 1. Hay yield following clipping the previous 3 years at three different dates in the fall.

There was no difference in spring hay yield between plots harvested the previous fall on September 01 or October 01, but each of these treatments yielded less than plots previously harvested on November 01. This suggests that plots harvested in September and October may not have been completely dormant (a reasonable assumption) and some regrowth occurred, which weakened the reserves available for growth the following spring. Despite this, the absolute yields the following spring were quite acceptable considering the stand was pure grass and 4 years old. There was no difference in spring yield between the Hay or Pasture stockpile management systems (data not shown). The yield of various grass species was not affected by the previous fall harvest date (data not shown).

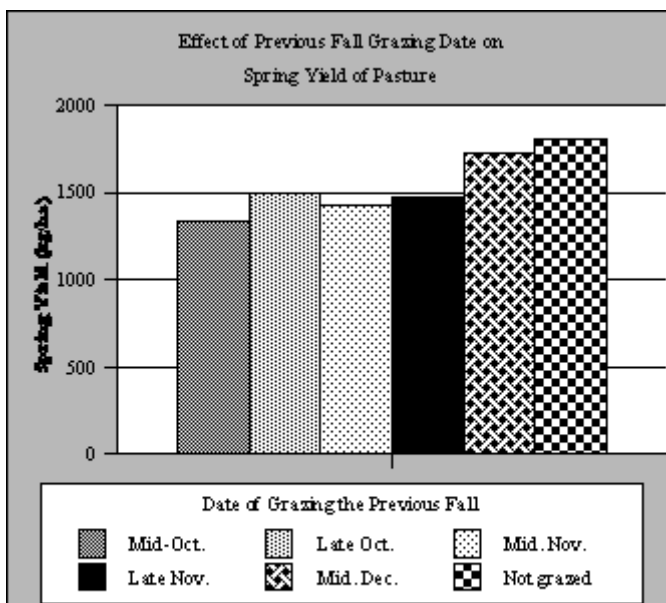
- ii) Spring yield data following sheep grazing is shown in Figure 2.



**Figure 2.** Spring silage yield (1997) or pasture yield (1998) following sheep grazing at four different dates the previous fall.

Spring yields were collected from areas grazed by sheep in early October, mid-October, early November, and mid-November. In 1997, spring silage yield (cut mid-June) was not affected by the date of grazing the previous fall. In 1998, spring pasture yields (cut mid-May) were not affected by the date of grazing the previous fall. Forage yields the spring after fall grazing were not affected by the stockpile management system used the previous fall (not shown).

iii) Spring forage yield following fall grazing by beef cows is shown in Figure 3.



**Figure 3.** Spring pasture yield following grazing by beef cows at different dates the previous fall.

There is a trend toward increasing spring pasture yields as the date of fall grazing moved from mid-October to mid-December, although this trend was not statistically significant. Areas that were not grazed the previous fall had absolute yields higher than the grazed areas, but the difference again, was not significant.

## **Summary and Interpretation**

Fall grazing has been carried out under clipping, sheep grazing, and beef cow grazing. No serious damage to the pastures has been noted under any system to date. Under clipping, hay yields the following spring were highest when the fall clipping was done in November. Under sheep grazing, fall grazing dates from early October to mid-November did not affect first cut silage or pasture yields the following year. Under cattle grazing, a trend towards higher spring yields with late (mid-December) or no fall grazing was noted, although spring yield differences were not significant.

Our experience with sheep grazing in fall (October and November) suggests that when the period of stay on an individual paddock is relatively short (7 days or less), spring vigour and yield are not adversely affected. The value of the manure and urine from the grazing sheep should be a positive factor in maintaining pasture production. Wet soil conditions do not appear to be a great concern when grazing sheep in fall since the pressure exerted by their hooves is relatively low. By grazing at high stock density for short time periods, pasture recovery seems to be good. Given the ability of sheep to graze quite close to the ground, it is important to provide a back fence to prevent the sheep from completely defoliating the residual forage.

Concerns with grazing on wet soil are likely much more important with cattle. Damage to the pasture was not noted in the cow-grazing trial. By not using a back fence the cattle are allowed to spread out and this may help to prevent excessive trampling damage. In any case, there will be occasions on heavy soils when grazing cannot be carried out because of wet conditions. It may be possible to feed cattle in a sacrifice area until the ground has frozen and then allow them to continue grazing.