



Learning for life

Managing Hail Damaged Alfalfa and Red Clover

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For determination of keeping stand of new seedings:

All plants with damaged terminal buds will die. Count remaining plants and keep if over 25 plants/square foot.

For hay from established stands:

Hail damage of alfalfa and red clover occurs in varying degrees of severity ranging from some terminal bud and leaf damage to completely defoliated plants. Stands may also be lodged by accompanying wind and rain.

Alfalfa and red clover grow from the terminal (highest) portions of the plant. If these are damaged growth is stopped on that stem. Thus, loss occurs from physical removal (loss) of forage and from terminated growth, requiring the plant to begin new shoots (stems) for growth.

Yield losses from any percentage defoliation will be in relation to the total undamaged yield potential. Data collected at UW Marshfield Research Agricultural Station by Dan Wiersma suggest that forage losses for hail damage to first cutting will be approximately 35 lb dry matter per acre for each percentage defoliation occurring with two weeks of harvest for both alfalfa and red clover. This occurred on stands where the undamaged yield was 2.25 tons dry matter/a. Hail damage losses for later cuttings are the same for alfalfa and 23 lb dry matter for each percent defoliation of red clover occurring with two weeks of harvest. Actual losses are lower for 2nd or 3rd harvests since undamaged yield will be typically lower for these cuttings.

Forage quality losses also occur, since the top and highest quality portions of the plant are removed when hail defoliates a plant. However, these losses are small.

Hail damage occurring earlier than two weeks before harvest will generally be to plants short enough so that the crown is exposed to some light. These plants will put out new shoots and produce a hay crop, though somewhat delayed.

When harvesting lodged alfalfa or red clover, our experience has been that disc mowers will pick up more forage than sickle bar mowers. Harvesting against the direction the forage is leaning will allow more to be harvested. With both mower types, tilt the cutter bar or discs forward to increase forage picked up. When using a sicklebar mower one can additionally move the reel forward and down and increase reel speed to help pick up downed forage.

Recommendations are:

1. If alfalfa or red clover is within two weeks of harvest and lodged, wait 3 to 4 days to allow stand to recover and harvest.
2. If alfalfa or red clover is within two weeks of harvest and but less than 50% of terminal buds damaged allow stands to mature to normal harvest schedule and harvest. Yield will be reduced but undamaged buds will continue to grow and produce additional yield.
3. If alfalfa or red clover is within two weeks of harvest and but greater than 50% of terminal buds damaged harvest immediately because little additional growth will occur (to the extent that terminal buds have been destroyed) except that coming from new stems which could better be a part of the next regrowth.
4. If alfalfa or red clover is not within two weeks of harvest (stand generally 12 inches or less tall) wait to stand to regrow from new shoots and harvest when forage at normal harvest height and quality.

| Recommendations for Managing Hail Damaged Alfalfa | | | |
|---|-----------------------|--|---|
| | | Less than 50% of terminals damaged | 50% or more of terminals damaged |
| Damaged more than 2 weeks before planned harvest | For harvest as hay | Wait until normal harvest time – expect reduced yields | Wait until regrowth reaches harvest maturity |
| | For harvest as silage | Wait until normal harvest time – expect reduced yields | Flail or cut immediately. Wait until regrowth reaches harvest maturity |
| Damaged less than 2 weeks before planned harvest | For harvest as hay | Wait until normal harvest time – expect reduced yields | Harvest immediately if yield justifies harvest- If lodged, delay 3-4 days before harvest If yield does not justify immediate harvest, wait until regrowth reaches harvest maturity |
| | For harvest as silage | Wait until normal harvest time – expect reduced yields | Flail or cut immediately. Wait until regrowth reaches harvest maturity |

The information and graph listed below is taken from:

<http://www.extension.umn.edu/cropenews/2008/08MNCN11.html>

Yield losses will be in relation to the percentage defoliation. Data collected at University of Wisconsin Marshfield Research Agricultural Station suggest that alfalfa yield losses from hail damage on first cutting will be approximately 35 pounds of dry matter per acre for each percent defoliation occurring with two weeks of harvest (Figure 3). This occurred on stands where the undamaged yield was 2.25 tons dry matter per acre. Hail damage losses for later cuttings are usually less. Forage quality losses from hail also occur, since the highest quality portions of the plants are removed. However, these losses are small relative the yield loss.

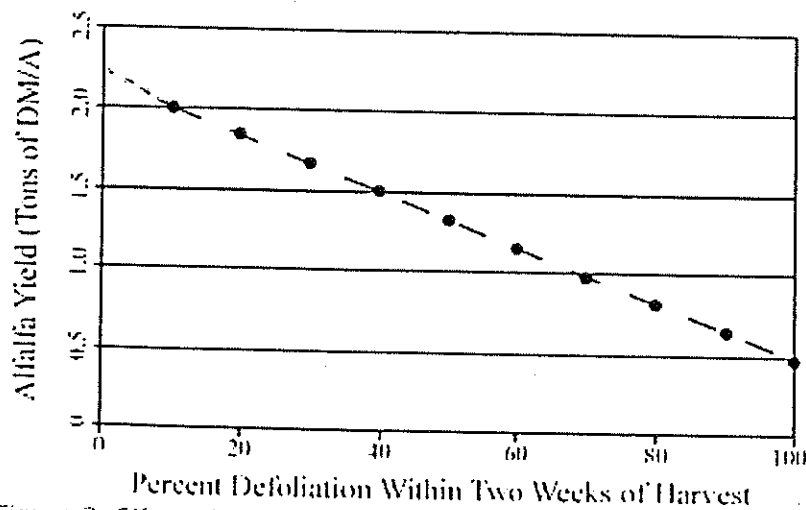


Figure 3 Effect of Hail Defoliation on Alfalfa Yield