



Getting the Most from Drought Stressed Forages

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Good management of moisture stressed forages will increase maintenance of a good stand and reduce the loss of forage production. Management of alfalfa, grass hayfields, pasture and corn each have some special considerations.

Alfalfa

Moisture stress has the following effects on the alfalfa plant:

- Cell enlargement is inhibited.
- The number of basal buds and the number of shoots or stems/plant is reduced when moisture stress occurs in the first 14 days after a harvest.
- The stem internode length is reduced; thus, the flowering is seen at reduced plant height.
- Leaf area/leaf size and leaf growth rate is reduced, although to a lesser degree than stem growth. Therefore, leaf to stem ratio is higher under moisture stress.
- Stem nitrogen percentage is increased while leaf nitrogen percentage is decreased, therefore whole plant nitrogen (CP) may be reduced though effect varies with severity/timing of moisture stress.
 - NDF is generally decreased, though effect varies with severity/timing of moisture stress.

Recommendations:

1. If stand is over 10 inches tall and flowering, harvest if economic to do so. Moisture stressed alfalfa should be mowed at the normal cutting height. There is no advantage to raising the cutting height. Alfalfa can regrow from axillary buds higher up on the stubble but they are smaller and produce lower yield than stems growing from the crown buds. Since quality is not declining as rapidly with advancing maturity as under normal growing conditions, let the plants approach 100% bloom before harvest to allow the plant to build nonstructural carbohydrate reserves.
2. If stand is 10 inches or less tall and flowering, do not cut. Let regrowth come through existing growth. Mowing will not increase regrowth.
3. Make sure that soil fertility is at optimum levels.
4. Scout and control potato leaf hopper, army worm and other insects.

5. New seedlings should not be harvested during the season but may be harvested in late August if adequate growth is present to harvest. A late fall cutting may also be taken. The key is to time harvests so that alfalfa either has no regrowth or more than 8 inches of regrowth at frost.

Grassy Hay Fields

Moisture stress effects on grasses are similar to alfalfa except that, if stems are present, forage quality of grasses may be lowered by stress rather than increased. Most grassy fields are stunted but are leafy and have few stems.

Recommendations:

1. Harvest if tonnage justifies and/or height is over 8 to 10 inches.
2. Apply 40 lb/a nitrogen to stimulate fall growth if rain occurs before mid-August. This cannot be manure since it will become available too slowly to provide optimum fall growth.

Pasture

Most pastures are short but regrowth will occur when it rains if adequate nitrogen is present.

Recommendations:

1. Graze to take advantage of any existing vegetation.
2. Mow tall, weedy or brushy growth.
3. Apply 40 lb/a nitrogen to stimulate growth as soon after Aug 1st as possible.

Corn for Forage

Many fields are stunted; some have significant firing.

Recommendations:

1. Plants will put out more growth, all are too wet to ensile now. Check moisture before chopping or baling to ensure excessive moisture does not cause poor fermentation and seepage losses.
2. If grazing, consider potential for nitrate toxicity. This is especially likely to be a problem if growth was reduced to less than 50% of normal and/or high levels of nitrogen were applied. Samples taken for nitrate test must be frozen or analyzed immediately as nitrate will decline in tissue over 3 to 4 hours. If above toxic, levels feed hay or some other forage in the morning and graze corn a couple hours in the afternoon.