

## HARVEST MANAGEMENT

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Harvest management is not an easy topic to address. Every farm or field may present a different situation, thus, decisions must be made by the grower as to the harvest schedule he uses. Most everything I will discuss has research to back it up but I will not reference it. I must say that some of my comments have come from experience and observation over a period of many years.

The most difficult and controversial issue in harvest management is cutting schedules or intervals between cuts or harvests. It could be a grazing schedule also. I will limit my comments mostly to cutting for hay or silage.

I feel that in the past we were too rigid in our approach to cutting intervals. In general, our recommendations on established stand were: Make first harvest at late bud to 1/10 bloom stage. Succeeding harvest should be made every 35-40 days during the growing season with last harvest being made by September 10. An aftermath harvest was recommended after freeze down. Freeze down being when we have temperatures of 24 degrees or below. Some year's freeze down does not occur until mid to late November.

### Some Basic Principles:

On established stands, the timing on the first cut determines to a great extent how many cuttings you can make during the growing season. It also affects yield and quality. I recommend making the first cut in bud stage if possible. This stage will occur about the first week in May in this part of the state. I have seen some April harvests. This will vary depending on spring weather. I, obviously, don't recommend cutting when rain chances are high. If the first harvest can be made when the alfalfa plant is in the bud to early bloom stage, it will increase the quality of the hay or silage as the case may be. It will generally stop alfalfa weevil damage and winter weed competition. If grass is growing in association with the alfalfa, the grasses, especially orchardgrass and fescue, will generally headout and bloom by the first of May. Cutting early will reduce, somewhat, the maturity of the grass and improve quality. All of our forage species, except corn when grown for silage, lose quality as they get more mature. Research shows that each day cutting is delayed past bud stage, feed value drops about 1% per day. That adds up to a 20 pound feeding loss for each ton each day.

If the first harvest is made early with immature plants, this may let you get an extra cutting during the growing season. In some cases, this will be five cuts and an aftermath harvest. In a dry year, the number of cuts may be reduced due to slow growth of plants. They may not grow tall enough to rake in five weeks. In some cases, it may take seven weeks for enough growth to accumulate so it can be raked. Plants may bloom and seed pods form under dry conditions.

In the past we have been told that cuts should be made on a 35 day schedule. This is based on data that was collected many years ago and was appropriate for the time. Since then, there are many new fast recovering varieties and our fertility programs are generally better so it may not take as long to restore root reserves after plants are harvested.

The 35 day cutting schedule doesn't fit most years for the second cut of alfalfa. Generally, May and early June have good moisture supplies and the temperatures and day lengths are conducive to rapid regrowth and production. Generally, the plants will start to lodge or bed-down at about four weeks. When this happens, then the crop should be harvested. Plants that bed-down lose their lower leaves, thus, quality. In most cases, new buds from the crown are appearing at this time also. There may be other times through the growing season that this condition will exist and a shorter cutting interval can be used.

It is important to have adequate time in the late summer and fall for the alfalfa plant to build root reserves before winter so the plant will survive and have enough carbohydrates to make rapid spring growth the next spring.

We generally recommend six weeks from last cutting to freeze down (24° or below) which stops growth. Our average date in Bowling Green, Kentucky, when we have 32° temperatures is October 26. As mentioned earlier, temperatures of 24° or below may not occur until November. Some years we get 24° or below by late October. This means that we need to make our last cutting by about September 15-20 in this part of the state. For more Northern areas, this would be September 10.

Now lets look at a calendar for 1983 and impose a cutting schedule for an established stand.

<u>1. Rigid</u>	<u>2. Average</u>	<u>3. Lax</u>
May 4	May 18	May 25
June 1	June 22	June 29
July 6	Aug. 3	Aug. 10
Aug. 10	Sept. 14	Sept. 21
Sept. 14		
Nov. 1 aftermath	Nov. 1 aftermath	

We all know it is easy to write down dates. We also know weather conditions prevent us from cutting just when we want to, but if we have our plans made, we can usually be within a week of our schedule. The most critical date is the first harvest. Every day we delay, we are reducing the number of days in the growing season for production. If a crop is left for two weeks past optimum cutting time, this is two weeks regrowth we can never recover. We also lose leaves and quality by delayed harvests as mentioned earlier.

Now for newly established stands, the cutting system is different. For late summer established stands, where seedings were made in August or early September and plants become well-established in the fall and alfalfa plants have early vigorous growth in spring, I don't feel that we have to go to full-bloom before first cutting. The first cutting may be made at one-half bloom which will be about May 15-20. We generally recommend about May 30 for first harvest at full bloom. This would still hold for plants that made slow growth in spring and tended to be weak. If we get the first cutting by May 20-25, then we can make four harvests the first year if moisture supplies are good, but would not cut more often than every five weeks in most cases. See average cutting schedule.

For spring seeded alfalfa, I would make first cutting about last week in June to July 1 when plants were in full bloom. A heavy infestation of potato leafhoppers may be causing serious plant stress, so, first cutting may be made earlier or before full-bloom. Fields should then be sprayed with an insecticide to control potato leafhopper. See Extension Leaflet Ent-17 for insecticide recommendations. Weather or rainfall will determine whether you can get one or two additional harvests the establishment year plus an aftermath harvest.

I would take a freeze down or aftermath harvest if at all possible. Late October or early November is generally not conducive to haymaking. It may never cure (dry-down) enough to bale. The alternatives are to cut, wilt and chop for silage - if you have a silo, or it could be harvested as green chop. If you have livestock, then grazing is an effective way to utilize this forage. Whatever method is used, it should be harvested within 10 days to two weeks of freeze down as plants lose quality rapidly. If you graze, feed cattle the first 2 or 3 days before they are turned on alfalfa to reduce the possibility of bloat. Also, graze only when ground is firm so the cattle's hooves will not damage crown of alfalfa plants. This will happen on soils that are wet or thawing.

A problem, I see, that seems to be more prevalent the past couple of years is alfalfa being cut at heights of 3 to 5 inches from the ground. I think the reason farmers are raising the mower height is to get above rocks and uneven ground to reduce the risk of breaking guards and knives. They are also mowing at a faster ground speed. I know down-time and repair parts

are costly but when you mow higher than 2-3 inches, you are causing three or four things to happen. (1) You leave from 500 to 1,000 lbs. dry matter in the field. (2) You don't control weeds as well. Close mowing weakens and often kills weeds but is not harmful to alfalfa. (3) You may leave more diseased residue in field to infect new shoots coming from the crown. (4) You often leave a stem with a side shoot on it. The alfalfa plant tries to regenerate growth in the side shoot which grows slow and often prevents new shoot development from the crown. This often reduces yield of the succeeding crop.

We often see slow recovery of alfalfa after cutting. Quite often it is attributed to inadequate fertility or weakened plants due to cutting schedule followed. The problem generally is insect related. A heavy alfalfa weevil population at first harvest may be left to forage or eat on the new shoots as they come from the crown. This can result in loss of stands and surely reduces yield.

The potato leafhopper is an insect that is ever present on alfalfa, especially on all but first cutting of established stands and can be a problem on first cutting of spring seeded alfalfa. Their feeding reduces protein of hay, weakens plants, and can lower yields of next cutting by as much as 1/2 ton per acre according to research from Purdue University. A good scouting program and use of insecticides can control the leafhoppers.

Alfalfa is a very valuable crop and harvesting should take a high priority to insure that we get high yields, quality and maintain stands. I hope you can use some of the material presented to sharpen up your alfalfa production program to make it more profitable.