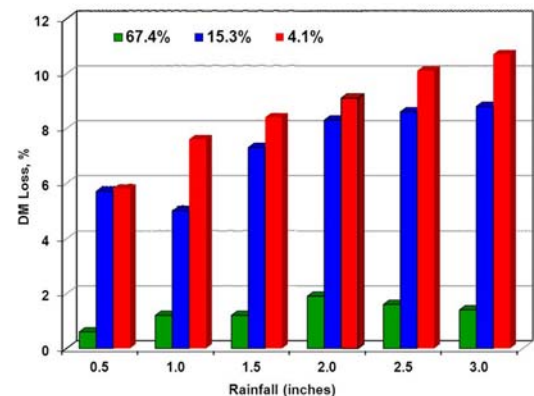


When alfalfa is rained on after mowing, forage quality and dry matter are lost. Rain amount and intensity are the significant factors affecting the amount of loss:

- A light drizzle will have little effect (other than to lengthen drying time and increase respiratory losses of starch and sugar.)
- A prolonged rain additionally will leach out some of the soluble nonstructural carbohydrates (sugars) and soluble protein.
- An intense rain will additionally cause leaf loss, resulting in dry matter loss and quality loss since the leaves are low in fiber and the stems remaining are higher in fiber.

Some common questions about rained-on alfalfa are;

**Is it better to have alfalfa in a wide swath or a windrow when rain occurs?** Generally, leaching loss is highest on freshly cut material while leaf shattering is low on wet forage and highest on drier forage (shattering is more of an issue for hay making than haylage at 60% moisture, graph at right from Scarbrough et al. 2005). Leaching and leaf loss will generally be less in a windrow. On the other hand, the windrow must be turned or spread out to dry again after a prolonged or intense rain which will cause leaf loss. A swath may also be compressed by moderate to heavy rain and need to be turned to enhance drying. Thus, when making haylage, it is often best to leave forage in a wide swath and rake/merge into windrow just ahead of chopping.



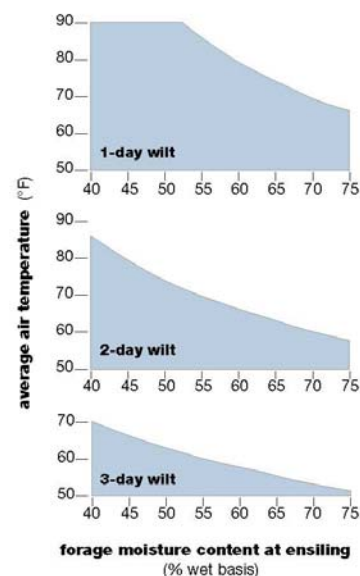
**How long can I leave alfalfa in the field to dry and still harvest for haylage?** (Alternatively, **when do I decide to chop the alfalfa back onto the field rather than harvest?**)

The major concern with harvesting rained-on forage are accumulation of mold and mycotoxins and ability of forage to ferment in silo. Generally, alfalfa is worth harvesting (at least for heifer feed) as long as slime molds have not developed on the forage. When such molds have developed, palatability and fermentability of forage are reduced and likelihood of secondary microorganisms producing mycotoxins is increased. Therefore, recommendation is to chop slimy forage back onto the field. This will at least return nutrients to the soil for regrowth.

Forage left in the field for more than 3 days will have lost much of the nonstructural carbohydrates (starch and sugars) which are the foodstuffs of silage fermentation bacteria.

**Should I apply an inoculant to rained-on alfalfa?** The data from Rich Muck in the graph at right show that lack of starch and sugars for fermentation will reduce likelihood of profitable *Lactobacillus plantarum* inoculant use as forage is left in the field longer. The probability of successful inoculant benefit is also reduced as air temperature increases. Beyond three days in the field, sufficient starch and sugar have been lost to suggest that inoculant is generally not beneficial. At this point, silage should be ensiled with propionic acid (preferably mixed with some acetic and/or benzoic acid). The recommended rate of acid application is 2 lb. active ingredient/fresh weight ton of forage.

**Figure 28.** Conditions for profitable use of inoculant on silage. Shaded areas indicate profitable conditions.



Source: Adapted from Muck, USDA, 1993.