

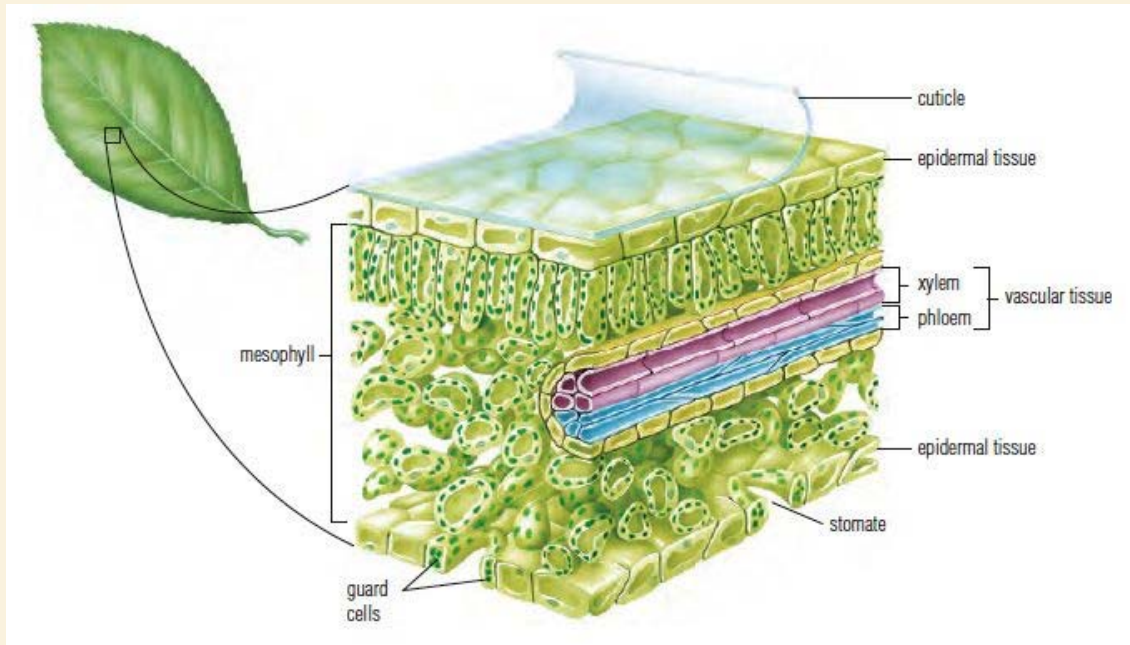


The Fenceline

Do I really need a surfactant with my herbicide?

Matt Booher, Virginia Cooperative Extension

Most of the hay and pasture herbicides we use call for a non-ionic surfactant (NIS). Non-ionic surfactants primarily helps the spray spread out over the leaf surface and penetrate a the leaf's waxy cuticle layer. A new group called organo-silicates is slowly taking the place of non-ionic surfactants, and they provide improved effectiveness, so be on the lookout. Can't I just use liquid dish soap? NO! Dish soap may break the surface tension of the water, but it was not designed as a surfactant, and does not increase the effectiveness of the herbicide. Dish soap also creates excessive foam. Next time you spray, be sure to purchase a commercial non-ionic surfactant with at least 80% active ingredient...unless, of course, the use of all the dish detergent in the house gets you out of doing the dishes.



Leaf cross section. A layer of waxes (cuticle) is an effective barrier to herbicides; a proper surfactant helps to spread the spray over the surface of the leaf and to penetrate these waxes so the herbicide can enter the vascular system of the plant.

The Importance of Proper Hay Storage

John Benner, Augusta County Extension, Livestock Agent

We have just spent hours and days in the field harvesting hay. We set aside time to service our equipment properly prior to heading to the field and had all tractors and implements ready in order to avoid a breakdown. We made the right decision in terms of how much hay to cut down and when. We had good weather to ted, rake and bale, and we successfully avoided (the majority) of afternoon T-storms prior to baling. So, what are the next steps? How do we

preserve the quality of hay for feeding next year and beyond? How do we reduce the amount of dry matter losses from the time we cut hay until the time we start feeding? The answer to both of these questions is proper hay storage. It has been estimated that the total amount of value lost in hay storage and feeding in the United States has totaled \$3 billion. To reduce our share of this dreadful sum we must take action to properly store hay from the time we harvest it to the time we feed it. Here are a few considerations to reduce hay storage losses

Store the best hay in a barn – Many of us make or purchase more hay than we have barn space for. To optimize this space we should put the best hay in the best storage. If purchasing or making twine wrapped hay, consider placing this in the barn. Make notes on how much hay was placed in the barn, from what field, etc. Submit a forage test to determine quality and help formulate feeding plans.

Consider laying down rock in hay storage areas. Storing bales on top of rock or gravel reduces the amount of moisture wicked up into the bale from wet soil. In my experience most bales that are stored on top of soil with covering weather worse from the ground up than the top down. This action should definitely be considered if hay storage areas have been determined to be permanent. Permanent hay storage areas should be well drained, and located near hay harvest and feeding areas to minimize transportation from fields and to cattle. Bales also may be placed in north-south arrangement to equalize sun exposure through the course of a day. It is generally best to place the bottom layer of bales ends down with the flat face on the ground to reduce moisture wicking and rot of twine and net wrap. The next two levels can may be stacked with faces out and round side on the bottom and top.

Cover hay – Whenever possible, cover hay. According to a survey by the

University of Georgia, hay covered with a tarp may experience 5-10% dry matter loss, when compared to 15-40% for net wrapped hay left outside. Twine wrapped hay stored uncovered outside losses were even more, as much as 20-40%. Tarps are not cheap and do need to be replaced, usually lasting as much as 3-4 years. However they certainly do pay for themselves in reduced waste. If hay cannot be covered, it should not be stacked. Stacking hay without covering it only traps moisture directly inside of bales, wasting as much as 40% of net weight of hay. See next point below on how best to proceed if covering and stacking is not an option.

Wrap hay – Wrapping dry hay bales is yet another preferred method of storing hay. Similar to stacking hay and covering hay with a tarp, wrapping hay is a proven method of reducing losses. University of Georgia expected losses from this method are around 5-10%. If hay is to be left outside in a row on the edge of a field, it may be the most favorable option to bring a wrapper to the field and wrap the bales in line. Similar to wrapping for baleage, 6-8 layers of wrap would be preferred to help preserve dry matter. And reduce losses

Consider building a hay barn – Barns are expensive, but may pay for themselves over time through reduced hay storage losses and expenses from other means, such as wrapping hay or covering hay. As David Fiske, the late superintendent of McCormick Farm used to say, “pay me now or pay me later”. There are some tools from various Extension services that evaluate the decision. Both the University of Wisconsin Extension and Iowa State University Extension have developed excel tools to evaluate hay storage costs. Click the below links to download them and try them

out. <https://www.extension.iastate.edu/agdm/crops/html/a2-37.html>

<https://fyi.extension.wisc.edu/forage/files/2014/01/BaleStorage5-7-04.xls>

Finally, hay stored over time, especially in less than ideal conditions, eventually

loses quality. This drives up hay waste at feeding time as animals avoid extremely weathered hay, driving up waste and feed costs. Do have a plan to store your hay, because in the long run good storage will save hay, time and most importantly, \$\$\$.

Hemp dogbane

Matt Booher, Virginia Coopreative Extension



Dogbane has a very aggressive rhizome (underground stem) that serves as an energy storage organ and gives rise to new plants.



Target dogbane with herbicides during the early bud to early flowering stages for best control.

Dogbane is a summer perennial that sprouts from a large taproot and spreading root system. Target the plant, taproot, and root system through herbicide application at the early-bud stage in early-summer & again on any fall growth. In my area we are close to the early-bud stage, but other areas of Virginia are likely there already. If it's in a hay field and you wish to spray, its

best to make the first cutting and then give the dogbane a chance to regrow to the early bud stage. There are multiple effective herbicide options, though it may take a couple years to eliminate a large stand. Here are a couple example recipes:

<u>Per acre</u>	<u>Per gallon of water (spot treatment)</u>
1 pint Remedy Ultra	6.25 mL (1/4 oz) Remedy Ultra
3 pints 2, 4-D ester	19 mL (2/3 oz) 2,4-D ester
8 oz non-ionic surfactant	9.5 mL (1/3 oz) non-ionic surfactant

<u>Per acre</u>	<u>Per gallon of water (spot treatment)</u>
2.1 pints GrazonNext HL	13 mL (1/2 oz) GrazonNext HL
1 pint Remedy Ultra	6.25 mL (1/4 oz) Remedy Ultra
8 oz non-ionic surfactant	9.5 mL (1/3 oz) non-ionic surfactant

Questions? Feel free to contact me.

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