

David Hallauer  
District Extension Agent  
Crops & Soils/Horticulture

### **Basal Bark Herbicide Applications**

As referenced in the cut stump discussion last week ([https://www.meadowlark.k-state.edu/news/agent\\_weekly\\_columns.html](https://www.meadowlark.k-state.edu/news/agent_weekly_columns.html)), there are times when we just can't fit all of our brush control work in to the growing season. In some cases, even removal of the trees to get to a point where stumps can be treated is a time challenge in and of itself. For smaller trees (less than four to six inches in diameter), a basal bark application might be what fits the bill.

Basal bark treatments are made to the bottom 12 to 18 inches of bark of smaller trees extending from ground level with liberal coverage of the bark all the way around the tree. Products containing triclopyr or aminopyralid are the most common used. Often mixed with a carrier to enhance penetration across the bark to the cambium layer, applications can be made mid-summer to mid-winter and are a good option if you are trying to kill trees prior to removal.

Make sure you read and follow all label directions to determine if the species you are trying to control are susceptible and how product should be mixed. For example, some triclopyr products are ready to use while others vary in the amount of oil type (typically diesel fuel) carrier required (Crossbow is mixed as a four percent solution in diesel fuel. Remedy Ultra and PastureGard HL are 25-30 percent). Aminopyralid containing products (often most effective on black and common honeylocust) are mixed at a five percent level, but have to be with a compatible basal oil and may require a jar test to check compatibility. Do not apply when soils are saturated, snow covered, or frozen.

For products and mix rates, check out the *2022 KSU Chemical Weed Control Guide* at <https://bookstore.ksre.ksu.edu/pubs/SRP1169.pdf>. Sections of the guide are also available upon request from any District Office or via e-mail to [dhallaue@ksu.edu](mailto:dhallaue@ksu.edu).

### **Pruning Trees and Shrubs in the Fall**

If you read the title of this news column and thought you were going to get the green light – not so fast. Dr. Rich Marini, Penn State Extension wrote once: 'Based on everything that has been published we can conclude that woody plants do not attain maximum cold hardiness when they are pruned in the fall.' The reason? Woody plants are moving sugars and other materials from leaves to storage portions of the plant just prior to leaf fall and pruning could disrupt that important process. However, he does go on to say as well: 'Trees are affected more by heavy pruning than light pruning.' In short, that means we might have some opportunities for pruning – so long as we're at least a little bit careful.

So when will it work and when is it best to avoid? Damage is most likely to occur if we have a sharp drop in temperature before plants are completely hardened off. This could be worse on some species than others, so even though light pruning and removal of dead wood are fine this time of year, you may want to delay severe pruning until spring.

Pruning is considered 'light' if ten percent or less of the plant is removed (dead wood does *not* count in this calculation). Remember as well that even light pruning of spring-blooming shrubs (think lilac and forsythia...) will reduce flowers for next year and should be pruned after flowering. If you're working with junipers, remember: they do not break bud from within the plant and therefore should be trimmed lightly if you wish to keep the full shape with overgrown junipers removed.

## Ross Mosteller

District Extension Agent  
Livestock & Natural Resources

### Nitrates and Prussic Acid

Fall is finally in the air and officially on the calendar! I've pulled my vests out of the closet, appreciate the freshness of mornings/evenings and enjoy fall colors dotting the landscape. As I write this, a freeze warning popped up on my phone, so it's a perfect time to discuss the subject of Nitrates and Prussic Acid in our annual forage crops, as it applies to the grazing animal.

If you've grazed livestock at all, you know those two terms can bring fear and anxiety, especially in times of plant stress - like dry weather and frost events. Although they are not specifically related to each other and have different management approaches, both can cause serious issues in livestock including reduced performance, abortions and death. The causative effect is due to the reduced oxygen carrying capacity of red blood cells in both cases. Prussic Acid is most often discussed in sorghums, Sudan grasses and the hybrids of those two. Nitrates may accumulate in these annual plants, but can accumulate in a wide range of both cultivated and wild species.

Prussic acid is likely the more toxic issue, but probably easier to manage. Prussic acid, also known as Hydrocyanic acid or hydrogen cyanide (HCN), is a compound that is released when the cells of plant species mentioned, burst under stressful conditions. The highest management intensive times are: 1) during new plant growth - such as after planting, tillers after harvest or flush of growth following rain and 2) after a killing frost. Management for new growth should allow the plant to regrow to a height of 18-24 inches, as the concentrations tend to dilute to safe levels. Waiting a week after a killing frost should nearly completely remove prussic acid concerns, as hydrogen cyanide dissipates in dead plant tissues in that amount of time.

Nitrate poisoning is a bit misleading, as it is actually nitrites within the rumen causing issues. Many more factors come into play with nitrates, but stressed plants are still the indicator. As adequate to excessive soil nitrogen is available, and stunted plants are unable to convert nitrates to plant proteins, nitrates will accumulate in the forage plant. This starts in the lower plant portions, but can be present throughout. The same two major time periods mentioned for HCN are also key for nitrates, but any condition that prevents normal healthy growth is suspect. Unlike prussic acid, once accumulated in a plant, nitrates will not dissipate after plant death.

Testing is always the best idea to know exactly where these levels are within plants. Costs to test can run from around \$6-\$7 individually to \$20 in combination, for nitrates and Hydrogen cyanide. As discussed, cured or dead forages will dissipate HCN, so most tests are run for nitrates. If nitrate levels are found to be high in a plant, there are really three management options. First, if the plant can be ensiled, the ensiling process will reduce nitrates - somewhere in the neighborhood of half. Secondly, probably the most applicable, is to dilute high nitrate feed with safe feed, to reduce the total nitrate concentration. Feeding to different classes of livestock is also an option, as some animals can tolerate nitrates better. Finally, do not use the feed!

I think you can see that there are similarities with these two issues, but also important differences. Although we've experienced the dry condition stressor, the majority of nitrate samples ran through our offices have shown relatively safe results. The impending killing frost of fall signals another time to be vigilante in testing and grazing management. Additional information on both issues can be found in KSRE publications: [MF3040](#), [MF3244](#) and [S115](#). Please reach out to your local Extension office for additional information and support as well.

## Teresa Hatfield

District Extension Agent  
Family and Community Wellness

### **Are Vitamins and Supplements Safe?**

With so much advertising bombarding us daily, it's hard to know what to believe. We see ads for vitamins and supplements; fantastic advertising claims to improve memory, gain a renewed zest for life, and have healthier hair. With all these claims, which ones can we trust?

The Food and Drug Administration (FDA) advises that dietary supplements are not reviewed for safety like other drugs. Manufacturers are responsible for the safety of their products. Still, they are not required to include warnings about potential side effects. Adverse reactions to dietary supplements can happen. People with certain medical conditions or taking prescription medications can have side effects. Problems can include liver damage, kidney failure, reduced bone density, and some types of cancer. You can also experience harmful situations if you get too many specific vitamins in your system.

Be alert for products that make astounding claims. Products may claim to cure a multitude of ailments, such as rheumatism, arthritis, infections, prostate problems, ulcers, cancer, heart trouble, hardening of the arteries, and more. Be aware of misleading scientific terms, undocumented testimonials from patients or doctors, or promises of no-risk "money-back guarantees. No one supplement can cure all ills.

Vitamin supplements can also contain inert ingredients that may be harmful. The FDS claims "extra ingredients" may not be listed on the label. These can cause serious side effects or interact in dangerous ways with medicines or other supplements you're taking. People have suffered strokes, acute liver injury, kidney failure, and pulmonary embolisms (artery blockage in the lung); some people have died. To find out more, visit the FDA website at: [www.fda.gov](http://www.fda.gov).

Make sure to talk with your healthcare provider before taking any supplements to avoid harmful reactions. If your healthcare provider recommends taking a supplement, follow their recommendations. Supplements that have reached their expiration date should be appropriately discarded. Take supplements with food to improve absorption and gastrointestinal distress. Separate calcium and iron supplement intake for several hours, so each mineral has the opportunity to absorb—store supplements in a cool, dry location.

Research suggests that nutrient absorption from food is greater than from supplements. The best way for your body to get the necessary vitamins and nutrients is from a healthy diet containing fruits, vegetables, and whole grains. Fruits and vegetables contain the vitamins, minerals, and fiber you need, but they also contain disease-fighting antioxidants. Choose a variety of fruits and vegetables at every meal: select whole-grain bread, cereals, crackers, or other grains like barley.

*Resources; Food and Drug Administration; Federal Trade Commission, Stay Strong Stay Health Factsheet KSRE*

## Cindy Williams

District Extension Agent  
Family & Community Wellness

### **Preserve Salsa Safely**

Many gardens are producing an abundant crop of tomatoes this year!!! One popular way to preserve tomatoes is to can salsa. While tomatoes are an acidic food, adding low acid foods such as peppers and onions changes the acid content. Instead of using a tested recipe, many canners like to make up their own recipe. This, however, can be unsafe. Here are some tips to preserve salsa safely:

1. Use a tested recipe. These can be found in Extension publications or in reliable sources such as the Ball Blue Book. These recipes use water bath processing. Do not change the amounts of ingredients. You can change the types of peppers to increase or decrease heat but use the amount specified in the recipe. Packaged salsa mixes, such as Mrs. Wages or Ball®, are also safe to use.
2. Freeze salsa. To preserve your own salsa recipe, a safe preservation method is freezing. This method will increase the wateriness when thawed. You can drain the tomatoes of excess juice prior to freezing to help reduce the liquid. The salsa may also be a little mushy when thawed but will still have a fresh-made flavor.
3. Canning untested recipes. The only way to can untested recipes is to use a pressure canner. Use the processing time for the ingredient that has the longest processing time. For example, processing a mixture of tomatoes, onions and peppers will be based on the onions because they have the longest process time. Do not pressure can garlic. It loses flavor and there are no recommended processing times.
4. Do not use open kettle canning. This method involves heating the food, then pouring into the jars and screwing on the lids. No further heat processing is done. This is not a safe canning method because bacteria, yeasts and mold can still be present and can lead to spoilage.