New Weed Control Options
Eileen A. Coite, REINS Coordinating Agent

This spring has brought a few new options for those managing pastures and hay fields. Minimizing weeds in pastures is a continuous challenge and its promising news when we hear about new and improved products to reach this goal. An assortment of chemical weed control products has been on the market for years to control broadleaf weeds. A few have had some impact on grass-type weeds as well, but options have been very limited up to now. With our predominant forage crop in Southeastern NC being bermudagrass that often competes for nutrients with other grasses, its exciting to find new ways to control these weeds, such as crabgrass, vaseygrass, bahiagrass, fall panicum, johnsongrass, and goosegrass.

Just released in April 2010 is a product containing a chemical called nicosulfuron. This chemical is on the market under the brand name “Pastora”. The active ingredients in Pastora are 56% nicosulfuron and 15% metsulfuron methyl. The exciting thing about Pastora is that it will help control the weeds that I described above, where minimal control options existed before. Other chemical options on the market for grass type weeds include Cimarron Plus (48% metsulfuron methyl and 15% chlorosulfuron), Panoramic (imazapic), Prowl (pendimethalin) and Journey (8% imazapic and 22% glyphosate). Most of these products are fairly new on the market, having become available over the past 2-5 years. Some other options that have been around longer are Roundup Ultra (glyphosate) and Direx (diuron). Each has its place and time in a successful weed control program, depending on the problem and type of grass weed you might be dealing with, and time of the year. Additionally, some are more harmful to bermudagrass than others, so it’s important to re-
search each product and decide which fits your situation best. For example, products with met-sulfuron methyl are recommended if your goal is controlling bahiagrass. If you are just sprigging a new field of bermudagrass, diuron might be the chemical of choice since it is recommended for newly sprigged fields. Late winter options (when the bermudagrass is still dormant) include the use of glyphosate and pendimethalin, but these should not be used once the bermudagrass starts to grow and spread.

As you can see, each chemical has its place in cleaning up grassy-type weeds in a hay or pasture situation. It is exciting to have more options for these weeds, since just a few years back the choices were extremely limited. Along with matching up each chemical to the situation, it’s important to remember that each one also has specific application directions, precautions and grazing restrictions. Don’t forget to read the label for this information, ideally before you purchase the product. Some require a spray adjuvant (surfactant) that will help the product make contact with the weed you are targeting to control, and the label will give these recommendations too. There are many, many products also on the market for broadleaf weed control, and most of the above mentioned products will control various broadleaf weeds along with grasses. For a complete list of forage weed control products or for additional help with identifying a weed and selecting a chemical for weed control, be sure to call your local extension office for assistance.

Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension in your county.

**Vision Affects Behavior**

Will Walls, Johnston County

Imagine being on a trail ride. Everything has been perfect. Your mare is calm and relaxed. You’re both looking forward to getting back to the barn and cleaning up for supper.

Suddenly you see a rabbit dart out of the bushes and race across the trail in front of you. Your mare gets skittish and begins to bolt. You need all your riding skills just to stay in the saddle and calm her down. Heart beating fast, you wonder what got into her. Surely she saw it was a rabbit. Surely she knows rabbits don’t eat horses.

The answer is “yes” she knows rabbits don’t eat horses. But “no” she didn’t see a rabbit. You did. She saw a blur that she couldn’t quite identify and that could easily have been a predator. The difference between what you saw and what she saw is profound. It goes back to our basic structures. We are predators. Horses are prey.

Our eyes sit in sockets that stare forward allowing us to see in binocular vision. Our circular pupils dilate and contract rapidly to accommodate varying light conditions. Our focus is quick. We automatically compute distance because of our superb depth perception. Our eyes work together to send a single, unambiguous image to the brain. Our comprehension is virtually instantaneous. These vision gifts were essential to survival for our hunting ancestors.

We all know that horses tend to spook quickly and run away from perceived dangers. Typically they’ll run over a few hundred yards, stop, and stare back at the source of their fright to evaluate whether it was truly a predator. If not, they’ll start to graze quietly. If so, they’ll assess whether they need to continue running. It’s common behavior and as riders, we need to understand what’s causing it.

First, of course, horses have no defensive weapons or armor. Their survival depends upon putting
quickly and getting away from danger without a second thought.

Second, their senses of hearing, smell, and sight are optimal to give them early warning to predators without necessarily giving them exact information. As predators we need precise information about our prey in order to capture it. As prey, they only need to know predators are active. Your horse’s vision is a perfect early warning device for predation.

Because the horse’s eyes meet different need than ours do, they work differently and the horse sees the world quite differently from the way we do. Most obviously, the horse has much greater peripheral vision. With eyes set wide apart, on the sides of its head, the horse can see most of the way around its body. It has an eight to 10 foot cone-shaped blind spot directly behind and a four foot blind spot directly in front of its nose. Horses move their heads frequently to view into the blind areas.

That wide vision comes at a cost. The horse normally views the world through a monocular perspective. Each eye sends a separate image to separate sides of the brain. Most of the time that works just fine. Occasionally it can cause confusion and even startle the horse. Just because he’s seen something with one eye doesn’t necessarily mean he’s comprehended it with the other one.

The horse doesn’t focus an image the same way we do. Its focusing muscles are weak so it relies upon the retina for obtaining a clear image. It maneuvers its head in such a way that it adjusts the focal length between its eye and the object to focus. To obtain a binocular image the horse must use the top part of its eye, look directly at the object, and hold its head quite still. With these limitations, you can understand why the horse didn’t recognize the grey blurry streak as a rabbit. His vision isn’t built for that purpose.

While we can’t get a horse to read an eye chart, we can estimate its visual acuity through other study methods. Compared with standard human 20/20 vision, most horses appear to fall in the range of 20/30 through about 20/60. The difference isn’t great, but it can reduce their ability to discriminate between objects as accurately as we can.

Horses are not forest animals. Their original habitat was grassy plains and steppes. With their large horizontal pupils, they can scan nearly all around the horizon through the upper portion of their eyes while simultaneously using the lower portion of their eyes to examine the ground right around them. They are optimally configured to spot movement and be alert to danger. They are not configured for rapid identification and classification like we are.

Interestingly, it appears that horses rarely, if ever look up. That may reflect their origins as animals of the plains. In that environment, their predators were on the ground. Had they come from the forests, as we did, they might have more ability to look up.

Most humans have what is called trichromatic color vision. That is, we see the three primary colors. Horses have dichromatic color vision. They see combinations of blues and yellows, not reds and oranges. They also have fewer cones than we have so their color world tends toward pastels and sepia. Like visual acuity, their color vision is optimal for a grazing animal.

We have long known that horses have more rods than cones and a reflective structure in the retina that should enhance night vision. Recent testing of horses has shown that are able to identify different shapes accurately in increasingly darker situations. It is only in near total darkness that the horses became unable to differentiate between shapes.

Your horse will be a reliable companion helping to get you home in the dark. Even if you can’t see, she can move confidently through the roughest terrain. Just be careful of low branches. She can see them even if you cannot.

In summary, it’s clear that people and horses view the world through different lenses. We have predator eyes. Quick to focus, our eyes allow us to identify, classify, track, and bring down quarry. Horses have the eyes of a grazing animal of the plains. Broad ranging monocular vision alerts them nearly instantaneously to predatory behavior such as sudden movement.

The lesson is clear: your horse cannot see, perceive, and understand as rapidly or as accurately as you can.
If you’re like most people, the first thing you do in the morning is wash the sleep from your eyes. It makes you feel better. It turns out that horses like it, too. The problem is, they can’t do it for themselves. We have to do it for them.

It’s really quite easy. Start with a good quality washrag. If it isn’t good enough to wash around your eyes, don’t use it to wash around your horse’s eyes. Lukewarm water is best but if you can’t do that, clean cold water will work.

Sanitation is critical. Always use a clean rag and clean water. Change rags between horses. Rags are cheaper than eye infections.

At first, while you’re training your horse, it’s best to have him tied in a familiar place. Later, as he’s become accustomed to it, you can approach him in his stall or even in the pasture. As with everything, start by asking permission. Standing at the shoulder, show him the wet rag. Never sneak up on him with it. After sniffing it, most horses will lose interest until you start bringing it to their eyes. If he turns his head away or backs off, retreat and ask permission again. Take as long as it takes to get him to accept you and the rag.

Start by washing under the eyes. If he has allergies, he may have drainage from the eyes on his cheek. You can gently wash that area without getting too close to the eye itself. Move to the other side and repeat the process with the other eye. Remember to stand in the safe zone by the shoulder. The trick is to be gentle and take small steps at first. It may take a several sessions before he’s comfortable with you washing around his eye. Be as gentle with his eyes as you would with your own.

As you build trust and he gains confidence, you will be able to wash closer to the eye and even put the rag over his eye and wash all around it. You will also eventually be able to approach him from the front and wash both eyes without him moving his head away. Take your time. There is no rush. You will know when you can move to the next step. The day will come when he turns his head toward you so you can wash him. Eventually, you’ll be able to wash his eyes while he’s standing freely in his stall or in the pasture. That’s when you know he enjoys and appreciates it.

As a secondary benefit, you will find the trust and rapport you’ve built up with your horse will make it much easier for your veterinarian to work with his eyes when the need arises. Before you turn him out for the day, don’t forget that a clean fly mask is the best protection his eyes have from insects and the harmful effects of ultraviolet (UV) radiation.

Deworming can become a confusing issue with so many products to choose from. How do I know if my horse has worms? Which products control which types of worms? Which worms should we be concerned about? It’s enough to stress out any horse owner.

Worms should definitely be a concern for horse owners. They can play a major role in feed efficiency, intestinal health, use of available nutrients, immune health, and general appearance. Horses that have heavy worm loads can show symptoms of weakness, anemia, rough hair coat, cough (due to worm migration), digestive disturbances, pot belly, and poor appearance. But in some cases, especially if there isn’t a heavy infestation, horses may not show any symptoms at all.

The biggest issue with deworming that livestock and horse owners face today is parasite resistance. This means that the worms are developing a resistance to the drugs that we are using and are able to survive deworming treatments. We’re also starting to see that even if the worms are killed off, the egg reappearance periods are beginning to get shorter. At this point in time, all of our current dewormers have reported parasite resistance problems of some degree in the United States. This is a major problem because the drugs available to us for deworming are all that we have. There are no promising alternatives on the horizon, so we need to be smart about how we use what is available to us now.

It is important to realize that no matter what brand name the dewormer is sold under, there are only 3
Deworming Dilemmas Continued...

classes of dewormers: benzimidazoles (fenbendazole), tetrahydropyrimidines (pyrantel salts), and avermectins/ milbemycins (ivermectin, moxidectin). Horse owners are strongly encouraged to rotate dewormers to avoid parasite resistance, and this means rotating between different CLASSES of dewormers and not just brand names. The biggest factors contributing to parasite resistance are 1) only using one class of dewormer, 2) high frequency of doses, 3) underdosing due to misjudgement of weight, and 4) losing product during administration.

The worms most common in horses are bots, threadworms, tapeworms, pinworms, ascarids (roundworms), and small and large strongyles. Most of the current research is focusing on small strongyles, which appear to be the biggest threat to adult horses in terms of control. During stage 1 through stage 3 of larval development, the small strongyles are found on the grass. After ingestion by the horse, stage 3 (or L3) can migrate to the horse’s cecum and colon after being ingested, where it can then encyst and remain protected in the gut for quite some time. Encysted strongyles can cause frequent colic or diarrhea in an infected horse, and many dewormers are unable to control them. Other signs may include weight loss or decreased rate of weight gain. Current methods of control for encysted strongyles are the use of moxidectin (Quest) or a double dose of fenbendazole for 5 days in a row (Panacur PowerPac).

Tapeworms are also a common problem and are difficult to detect in live horses. Their eggs often go undetected during a routine fecal egg floatation, giving the false impression that they are not present in the horse. It’s a good practice, however, to target tapeworms in your deworming program at least once a year. A product that contains praziquantel will control tapeworms (Zimectrin Gold, Quest Plus, Equimax, etc) and many dewormer rotations will include these in the spring and fall of the year.

There are 3 types of deworming programs. A scheduled program includes either a fast rotation of dewormer classes used 4-6 times per year or a slow rotation where each class is used 1 time per year. These schedules can be based on the egg reappearance periods of the various dewormers. On average, the egg reappearance period (ERP) after use of pyrantel or fenbendazole is approximately 5 weeks. For ivermectin, the ERP is approximately 6 to 8 weeks, and for moxidectin, the ERP increases to approximately 10 to 12 weeks. Daily deworming involves the use of a daily low dose feed through dewormer and treatment with a second class of dewormer once or twice a year. There is some debate as to whether there is an increased instance of parasite resistance with this method. Veterinarians at NCSU recommend that horse owners using a daily deworming program also use fecal egg count reduction tests to monitor possible parasite resistance and to use other methods of control, such as pasture rotation or manure removal, to help reduce parasite populations. A targeted deworming approach is the method that researchers and veterinarians are beginning to promote over traditional methods. This method uses fecal egg count tests (FECs) to determine which horses have worms and what type of worms are present. In reality, a small number of horses on the farm carry the majority of the parasite load, so these are the horses we should target in our deworming program. They will be the ones shedding eggs and continually reinfecting the rest of the herd. This method avoids the excessive deworming of horses who don’t need it and allows you to select the dewormer that will best control the parasite.

Pasture management also plays a role in parasite control. Most parasite larvae will not survive temperatures above 85°F so it is not necessary to deworm adult horses as often during hot, dry summers. When temperatures are consistently below 45°F, larval development stops but the larvae do not die. Unfortunately, in southeastern NC, we don’t often stay consistently below 45°F for very long in the winter, so the larval development is probably not completely halted as it might be in colder climates. Although dragging pastures is recommended in terms of forage management, it may not be a good idea in terms of parasite management. The ideal time to drag pastures is during periods of hot or dry weather when the larvae can be exposed to sunlight and killed. Pastures that are overstocked with too many horses will have a higher parasite load than those that are lightly stocked or on a long pasture rotation schedule.

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Note: The article above is meant for informational purposes only and should not replace the advice of a veterinarian. The brand names mentioned are for reference purposes only and should not be considered as an endorsement by NC Cooperative Extension. Please work closely with your personal veterinarian to design a deworming program that is most appropriate for your herd.
Kids Corner

“Horsing Around”

The answers to this crossword puzzle describe different kinds of things a horse may do on any given day.

Across
4. A Western word for a slow trot
6. An English term for a smooth 3-beat gait
8. When a horse kicks with both hind legs at the same time
9. Something a horse does with its nose
10. A way that a horse scratches its back
   After you take off its saddle
12. What horses do at the trough
13. A springy, showy gait

Down
1. A slow 4-beat gait
2. When a herd of horses run wildly
3. A gait that English riders post to
5. What horses do that are put out to pasture
7. A horse’s fastest gait
9. A soft noise horses make
11. A Western term for canter

Answers on page 7
**Regional Equine Information Network System**

**REINS Volunteers by County** (Volunteers may be contacted via Extension Agents)

**Johnston County:** Julie Walls, Will Walls & Roger Davis

**Wayne County:** Jerry Boone, Lynn Lepley, Vivian Rowe, Cindy Wheaton & Vickie Yelverton

**Wilson County:** Carol Kyles & Kathy Moore

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**Hoof Prints** is a quarterly newsletter written by a team of experienced and certified equine professionals for persons interested in equine information in Southeastern North Carolina. For more information on material and events presented in this newsletter, contact your local agent and Cooperative Extension office at:

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**Answers to Kids Corner “Horsing Around” Crossword Puzzle…**

**ACROSS:**

**DOWN:**

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**Calendar of Events**

**May 22nd & 23rd - Southeast District 4-H Horse Show, Williams-**

**ton** for entry forms go to www.sed4hhc.com

**July 7th - 11th - State 4-H Horse Show, Raleigh**

*For more information about events please contact Kim Davis at (919) 731-1520*

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**We’re on the Web!**
www.ces.ncsu.edu/wayne