

# PLANT & PEST ADVISORY

FIELD AND FORAGE CROPS EDITION \$1.50

MAY 24, 2001



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### Tissue Nitrate Concentration in Grass Hay

*Jeremy W. Singer, Extension Specialist in Field and Forage Crops*

The recent rains have eased concerns about high tissue nitrate concentrations in grass hay that is 7 to 14 days from being harvested, nevertheless, the following information will help if we encounter dry spells during the remainder of the growing season. High tissue nitrate is of primary concern for ruminants. Horses are capable of tolerating about 10 times the tissue nitrate level that ruminants can before showing symptoms of nitrate toxicity.

The symptoms of acute nitrate poisoning in livestock include staggering, gaits, muscle tremors, rapid pulse and urination, labored breathing and bluing of the mucous membranes, and abortion. Consequently, nitrate poisoning is a serious concern during periods of drought. Nitrate poisoning occurs during periods of drought because nitrate uptake exceeds protein synthesis. Usually, we think of nitrate poisoning in corn, but a number of calls about potential nitrate poisoning in grass hay have been received lately.

Livestock show signs of nitrate toxicity when consuming forage above approximately 2,500 ppm tissue nitrate, although this varies according to the percent of the ration that is high in tissue nitrate. Forages that contain greater than 9,000 ppm nitrate are dangerous to cattle and often will cause death. The following data are from a grass hay research study that was conducted in 1999 and 2000 at the Rutgers Snyder Research and Extension Farm, near Pittstown, NJ.

Orchardgrass hay at first cut in 1999 and 2000 receiving 100 lbs. N/acre as ammonium nitrate had tissue nitrate concentrations of 3,612 and 500 ppm, compared to 2,363 and 925 ppm in smooth bromegrass and 377 and 250 ppm in timothy. Second cut orchardgrass in 1999 and 2000 receiving 50 lbs. N/acre had 2,600 and 625 ppm tissue nitrate compared to 309 and 425 ppm in smooth bromegrass. Only one timothy harvest was made in 1999, but second cut timothy in 2000 had 1,117 ppm tissue nitrate. Third harvest of orchardgrass in 1999 and 2000 receiving 50 lbs. N/acre had 3,855 and 300 ppm compared to 4,725 and 325 ppm in smooth bromegrass.

SEE NITRATE ON PAGE 2

## Deadline Near to Install Reflective Tape on Trailers

Trailer owners are reminded that June 1, 2001, is the deadline for the installation of red and white conspicuity tape to improve nighttime visibility on old and new trailers with a gross vehicle weight of 10,000 lbs. and 80" (or wider) overall width. This high-visibility reflective tape will greatly increase visibility of trailer boarders in low light and darkness. Using the tape on box trailers, flatbeds, livestock/grain trailers and tankers can help prevent serious accidents and cargo damage. For information on where to apply the tape on the trailer, refer to Section 393.11 of the Federal Motor Carrier Safety Regulations. This retrofit rule represents the first time federal safety standards applicable to new vehicles were made applicable to old ones. □

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### NITRATE FROM PAGE 1

Clearly, tissue nitrate concentrations were always higher in a dry 1999, except for second cut smooth bromegrass, where very low yields affected tissue nitrate concentrations. However, if you follow the current recommendation of 75 lbs. N/acre in the spring followed by 50 lbs. N after each successive cutting, tissue nitrate concentrations should be safe for horses. If you are feeding hay harvested during a drought to livestock, it is prudent to determine tissue nitrate concentrations to avoid animal health problems. Rutgers Cooperative Extension Fact Sheet 935 'Feed and Forage Testing Labs' provides information about labs that provide this service. Contact your County Extension Office for the Fact Sheet. □

## To Hoe or Not to Hoe

*Daniel Kluchinski, Mercer County Agricultural Agent*

In many corn and soybean fields, seed has been in the ground for several weeks. One concern is staggered germination and stand variability due to the extended dry period of the past month. The other is if pre-emergence herbicides were applied to these fields. According to Mark Loux, Ohio State University weed specialist, farmers in areas that have received little rain may want to consider using a rotary hoe on emerging weeds in order to gain time on herbicides that haven't been activated.

In general, pre-emergence herbicides applied at planting need a half-inch to 1 inch of rain within 7-10 days for effective weed control, Loux said. But if rain is lacking, the rotary hoe is very effective on weeds about to emerge from the soil — the so-called "white stage." Even if rain is forecast, hoeing may be a good idea because pre-emergence herbicides might not control emerging weeds, Loux said.

Farmers may still want to consider rotary hoeing if their area received less than 0.75 inch of rain since planting, Loux said.

Different products vary in their rainfall requirement, so a light rainfall might not get you out of the woods. Dry soils generally need more rain to get herbicides going compared to relatively moist ground. Following are tips on the effective use of a rotary hoe:

- The ideal time to rotary hoe is after weeds germinate but before the shoot emerges, or the "white stage." This may be as early as three to seven days after planting. Weeds germinate and emerge more rapidly at later planting dates.
- Rotary hoeing five to seven days after the first hoeing will improve control, and may be necessary if weather stays dry.
- Visible weeds are probably past the stage of maximum rotary hoe effectiveness, especially large-seeded weeds such as velvetleaf and giant ragweed.
- The rotary hoe is most effective on smooth, dry and firm soil surfaces, or where a crust is present. Rain shortly before or after rotary hoeing can greatly reduce effectiveness.
- For best results, operate the hoe in the same direction as crop rows at a minimum speed of 6 mph.
- Take precautions to reduce stand loss. Crop injury is more likely when the seed is not planted deep enough. Avoid covering the crop with soil as it emerges. Corn can be hoed to a height of 4-5 inches. Avoid hoeing corn planted in loose soil from the spike to one-leaf stage to prevent covering plants.
- Don't hoe soybeans at the crook stage, just prior to emergence.
- Wait until approximately three days after emergence. Hoeing soybeans during emergence results in a 5 percent to 10 percent stand loss.
- If possible, rotary hoe a test strip and evaluate crop damage.

*Adapted from "Ag Answers", May 15, 2001. Steve Leer, writer/editor, Purdue University, West Lafayette, IN, <http://www.aganswers.net>. □*

## Foot and Mouth Disease Briefs

*Michael Westendorf, Specialist in Animal Science*

### Websites

Below are two web pages from the New Jersey Division of Animal Health website. These are also linked from Rutgers Cooperative Extension's Foot and Mouth Disease website at:

<http://www.rce.rutgers.edu/fmd/index.html>

Biosecurity recommendations for fairs, field days, and animal exhibits:

<http://www.state.nj.us/agriculture/bioreccom.htm>

Special recommendations concerning international travelers:

<http://www.state.nj.us/agriculture/travrec.htm>

The internet search engine YAHOO has a Foot and Mouth Disease website which includes up-to-date information on the disease worldwide:

[http://dailynews.yahoo.com/fc/World/Foot\\_and\\_Mouth\\_Disease/](http://dailynews.yahoo.com/fc/World/Foot_and_Mouth_Disease/)

### Foot and Mouth Disease Status

Total number of confirmed foot-and-mouth cases in the UK 1,621 - Six on May 20, 2001

2,952,000 animals slaughtered

78,000 animals awaiting slaughter

28,000 carcasses awaiting disposal

Although the number of new cases of Foot and Mouth Disease (FMD) has dropped recently, there is still concern about the number of new cases in the UK. Brazil and Argentina are also experiencing outbreaks of FMD. The concerns about contracting FMD in America will continue to require vigilance. This will affect all those involved in county fairs, sales, demonstrations, etc. in the coming months.

### Brazil Spots More Foot-And-Mouth After Slaughter

Brazil confirmed a fresh outbreak of FMD in its southernmost state and began slaughtering infected cattle immediately. It is Brazil's fifth case of FMD in the past 2 weeks and comes 2 days after the state euthanized hundreds of livestock. At least 2 more outbreaks are suspected in the region. The agricultural secretariat of Rio Grande do Sul state said it began slaughtering a herd of 67 animals on Brazil's border with Uruguay after 20 cattle were confirmed with the disease.

A spokesman for the secretariat added that blood and tissue samples from herds in the nearby town of Alegrete had been taken to laboratories to confirm 2 more suspected outbreaks. The latest outbreaks came as state authorities used police roadblocks and vaccinations to fight the scourge, which causes fever and blisters on cattle and other cloven-hoofed animals.

## Attn: Fax Subscribers

This season we are using a new fax broadcast system. Unfortunately, there are a few kinks in the system, and not all fax subscribers are receiving their faxes. Until we have the problem fixed, we are temporarily suspending the fax broadcasts.

If you are a fax subscriber and have not been receiving previous weeks' issues, please contact Cindy Rovins at 732-932-4539 or by fax at 732-932-9838, or e-mail [rovins@aesop.rutgers.edu](mailto:rovins@aesop.rutgers.edu). We can send you back issues of the newsletter.

We apologize for the inconvenience and hope to reinstate the fax broadcasts shortly. Thank you for your patience. □

FMD has ravaged farms in Britain and other parts of Europe and there have been widespread outbreaks in Argentina and Uruguay. Brazil's cases prompted the rest of the country, Europe and some Asian countries to ban imports of beef from Rio Grande do Sul. The government said the bans could slice \$300 million off Brazil's meat exports this year, estimated at \$2.5 billion. Brazil is home to the world's largest commercial cattle herd, with 167 million head. Vaccinations of the state's herd are expected to continue for about the next 45 days.

### Argentina Vaccinates 28 Million Cattle for FMD

Argentina has vaccinated close to 28 million of the country's roughly 49 million cattle against foot-and-mouth disease (FMD) and expects signs of the disease to disappear by 2003, a top health official said.

Health authorities aim to achieve the status of "free of FMD with vaccination" in 4 years, said Bernardo Cane, president of the national food and animal health agency Senasa. "Our experience in the 1990's was that after 2 complete years of vaccinating...(or) by 2003, there should be no presence of the disease (in our animals)," said Cane.

Argentina said in April it planned to vaccinate 98 percent of the country's herd to bring the disease under control. Under the program, cattle are vaccinated twice a year. Twenty million more cattle must be vaccinated in the first round, said Cane. The second round will begin later in the year.

The latest outbreak of the highly contagious virus has closed Argentina's main export markets — including the United States, Canada, Chile and the European Union (EU) — and put in danger some \$600 million worth of annual meat exports. □

## Tick Warnings

Deborah Smith-Fiola, Ocean County Agricultural Agent, and Steven Rettke, Program Associate in IPM

Excerpted from Landscape IPM Notes, Rutgers Cooperative Extension of Ocean County, May 2001.

During the weeks ahead, the peak activity for the immature stage of the **deer tick** (now called the **black legged tick**) will commence. This stage is the vector of 70% of all cases of Lyme Disease. The nymph is very small, about the size of a poppy seed. The tick is picked up by brushing against low (4"-6") vegetation. Since ticks don't fly or drop from trees, they crawl up and wait on vegetation for a person to walk by, and then grasp onto clothing, and crawl up. Tucking your pants into your socks (so they don't crawl up your leg unaware), wearing high rubber boots (too slippery to crawl up – but in the summer?), and wearing a repellent (to kill them upon clothing contact) are thus all precautionary recommendations

to prevent a tick bite. The nymph stage will feed for 3 to 5 days, swelling with blood to the size of a sesame seed before it drops off.

The nymph prefers to live in the woods, or in adjacent vegetation, *not* in properly mowed lawns. A lawn is simply too hot and dry for nymphs to survive. Research shows that 84% of nymphs are found in the woods, 13% along wood-edge vegetation, and only 3% in the lawn.

Reliable control of deer tick nymphs currently involves one application of a granular insecticide (Sevin G or Dursban G) broadcast 8-12 feet into the woods. Shaded turf adjacent to the woods is also treated. One application during late May or the first week of June has given > 95% control of nymphs. Liquid insecticides are also labeled, but *thorough coverage*, by drenching foliage until runoff, must be performed. Only one pesticide application is necessary, because nymphs rarely move more than 10 feet from where they molted from a larva. Once they are killed within an area, they won't re-infest again until the adult moves in via animal activity during the fall season. □

## Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged below normal. Extremes were 84 degrees at New Brunswick on the 20th and 38 degrees at Pemberton on the 15th. Weekly rainfall averaged 0.11 inches north, 0.08 inches central, and 0.27 inches south. The heaviest 24 hour total reported was 0.80 inches at Glassboro on the 20th to 21st. Estimated soil moisture, in percent of field capacity, this past week averaged 67 percent north, 54 percent central and 38 percent south. Four inch soil temperatures averaged 58 degrees north, 60 degrees central and 60 degrees south.

### Weather Summary for the Week Ending 8 am Monday 5/21/01

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.16	7.01	-3.22	81	42	58.	-3	335	130	62
CANOE BROOK	.14	6.73	-4.56	82	42	59.	-2	388	204	69
CHARLOTTEBURG	.05	7.40	-3.72	81	41	57.	-1	285	171	59
LONG VALLEY	.12	5.17	-6.35	76	42	56.	-3	269	127	67
NEWTON	.08	8.08	-1.81	82	41	57.	-2	347	203	63
FREEHOLD	.03	10.14	-.53	81	45	59.	-3	460	213	64
LONG BRANCH	.00	11.06	.04	75	47	58.	-3	331	121	41
NEW BRUNSWICK	.03	8.80	-1.65	84	43	60.	-3	384	110	69
PEMBERTON	.32	7.35	-2.83	83	38	59.	-4	427	156	48
TOMS RIVER	.00	9.25	-1.43	77	40	58.	-4	388	156	38
TRENTON	.09	7.76	-1.90	82	46	60.	-4	421	114	45
CAPE MAY COURT HOUSE	.13	6.29	-3.07	73	45	59.	-3	381	110	26
DOWNSTOWN	.10	7.59	-2.03	75	42	57.	-7	406	87	43
GLASSBORO	.85	7.67	-2.54	79	49	61.	-3	458	153	72
HAMMONTON	.04	7.45	-2.49	77	43	59.	-4	415	118	28
POMONA	.06	7.21	-2.10	75	42	58.	-4	371	122	35
SEABROOK	.54	8.21	-.56	76	44	59.	-5	448	124	59
ATLANTIC CITY MARINA	.19	5.38	-3.42	74	50	59.	-2	358	120	34
SOUTH HARRISON	.10	8.30	-1.66	75	45	59	NA	423	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week		153	(Ending 5/14/01)		This Week		125	(Ending 5/21/01)	

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