

Date: May 8, 1997

Volume: 43

INSIDE

Horticulture In-Service 2
"Eradication" of Fire Ants 2
2174 Released 2
Rotational Restrictions of Chemicals 3
Notes on Pasture Legumes Planted in OWB Near Cordell 4
Horticulture Training 4

Forage Sorghum Nitrate Accumulations

Robert Stewart

Many farmers and livestock producers have raised and fed sorghum forage crops to their livestock over the years without too many problems. However, the crop from last year caused quite a few deaths of livestock, mainly because of high nitrate levels in the feed. A common theme from last year was haygrazer planted in failed wheat fields. The combination of excessive nitrogen plus drought increased accumulation of nitrates in the stems of plants to high and dangerous levels. Sorghum hybrids are frequently fed in cow-calf operations and sometimes in stocker operations, but when nitrate levels are high, abortions, weak calves, slowed growth rates, lowered milk production, and death can result.

What factors affect the nitrate levels in the feed? The amount of nitrates present in the crop when it is cut remains the same after baling and when being fed to livestock. So to avoid dangerous nitrate levels, the farmer/producer needs to take into account what plant factors are involved in nitrate accumulation. This is

usually triggered by some environmental stress, where plant growth slows or stops, but nitrate absorption from the soil continues. For summer annuals, drought is the most common stressor. When this is combined with excessive soil nitrogen for the existing growing conditions, the result usually is toxic levels of nitrates.

Other stress factors that can cause nitrate accumulations in plants are cool, cloudy weather, acid soils, and phosphorus-deficient soils. Also, excessive nitrogen applied to the crop can increase nitrate levels. Plant type also will affect nitrate levels. Pearl millet usually will accumulate significantly higher quantities of nitrates than the sorghum or sorghum-sudan plants. Pearl millets will cease growth earlier in stress conditions than will sudangrass, which allows more nitrate buildup in a smaller plant volume. The stalks of the plants are the highest in nitrate content, especially in the lower six inches of the stem. Therefore, elevating the cutting bar above this six inch point can potentially reduce nitrate levels. Round baling offers a potential to increase the danger of nitrate toxicity. Usually nitrate accumulation occurs in "hot spots" and is not uniform throughout the field, and the "hot spot" is concentrated in one large bale.

The worst accumulators of nitrates are the sorghums and pearl millet. Other annuals that less frequently accumulate nitrates are small grains (wheat, oats, and rye). Some perennial grasses (fescue and johnsongrass) and certain weeds (kochia, pigweeds, lambsquarter, and Russian thistle) have high potential for accumulating dangerous levels of nitrates. Bluestem, bermudagrass, buffalograss, and gramagrass offer low potential for nitrate problems.

This newsletter was developed by your team of Area Specialists in the Southwest District. Our goal is the dissemination of research-based information.

Southwest Area Specialists:

Dr. J. C. Banks
State Ext. Cotton Specialist
(405) 482-2120

Mark Gregory
Agronomy Specialist
(405) 832-3356

A. L. Hutson
Ag. Economics Specialist
(405) 255-0601

Lonnie D. Sellers
Agronomy Specialist
(405) 255-0601

Dr. Miles Karner
Entomology Specialist
(405) 482-2120

Dr. Robert Stewart
Livestock Specialist
(405) 832-3356

J. Wes Lee
Water Quality/IPM Specialist
(405) 255-0601

Al Sutherland
Horticulture Specialist
(405) 224-2216

The Oklahoma Cooperative Extension Service does not discriminate because of race, color, national origin, religion, gender, age or disability, and is an Equal Opportunity Employer.



Horticulture In-Service

Don't forget to call Cathy Koelsch (278-1125), by May 15, if you are interested in attending the Hort In-Service. The In-Service is scheduled for June 5 and the place and time will be decided following the May 15 deadline. Plant problems

including insect, disease, and other stresses will be discussed. This will especially be informative to new county agents in helping with homeowner questions this summer.



"Eradication" of Fire Ants

Wes Lee

There has been an increasing amount of media coverage lately concerning Red Imported Fire Ants (RIFA). Many of you in the southern half of the district or metro. areas will be getting more and more calls concerning RIFA as residents get outdoors. Much of the media coverage I have seen refers individuals to contact their "county agents" for help with RIFA.

Much of this renewed attention is centered around proposed legislation from Senator Graham from Texas. He has obtained support from many in Washington to try and curtail the spread of, or eradicate the RIFA. Most informed entomologists, including OSU's, believe that eradicating the ants would be impossible with technology available today. Legislators often refer to the mostly successful boll weevil eradication effort to support their stance on eradication of the RIFA. Keep in mind, fire ants can occur anywhere in the areas they have become permanently established, including high public use areas, urban yards, crop lands, remote forest lands, etc. With the boll weevil program spraying is limited to cotton fields. Spraying or baiting the vast amounts of lands inhabited by RIFA would be impossible, not to mention

the fact that a significant portion of homeowners/landowners are strongly opposed to any pesticide use. Also, currently available pesticides/baits, even if used properly, seldom provide complete control and have to be reapplied as the colony reestablishes (3-12 months). Many are also non-selective and would damage other insects such as native ant colonies.

A much better and cost effective approach would be to learn to live with and manage RIFA. This includes focusing attention in high use areas with currently available products or techniques. Low use area will have to be handled with changes in management strategies.

At a recent RIFA workshop held in Durant, scientists discussed some promising, newly introduced biological control agents. If established, these may help keep the ant populations reduced to a more manageable level. Whatever the outcome of the RIFA legislation our goal is to provide proven, research based information to our clients.

PS. We have a slide set on RIFA from OSU, complete with script, available for use in the Duncan office.

2174 Released

Lonnie D. Sellers

2174 is the name of the new variety just released by Oklahoma State University. The pedigree of 2174 includes PL145, a line from Illinois, and Pioneer 2165, says Ed Smith, OSU wheat breeder. It basically comes out of the Pioneer genetics program, consisting of half 2165...2174 is about the same maturity and height as 2163. It has adult plant resistance to leaf rust, and resistance to tan spot and powdery mildew. It is resistant to soil-borne mosaic. It is intermediate in tolerance to acid soils, not quite as good as 2163 or 2137...2174 has good winterhardiness, but probably slightly less than Karl 92. Test weight is above average, much better than 2163. It has an early growth habit in the fall, but its pasture potential remains to be evaluated...Its best region of adaptation at the moment seems to be central and northcentral Oklahoma. Custer has had better performance than 2174 in western Oklahoma and the Panhandle.

Rotational Restrictions of Chemicals

Lonnie D. Sellers

If you plan to destroy your wheat and plant a row crop, be careful about herbicide carryover. Many of the herbicides that are labeled for wheat have residual activity that limits what row crops you can plant this spring. The Finesse label may soon be changed to four months for grain sorghum.

Label Rotational Restrictions of Chemicals for Spring Weed Control in Wheat			
Herbicide	Label Rotational Restrictions	Herbicide	Label Rotational Restrictions
2,4-D Residual weed control: No	None	Express Tribenuron Residual weed control: No	Any crop can be planted 60 days after the application of Express.
Ally + 2,4-D Metsulfuron + 2,4-D Residual weed control: Yes	Do not rotate to grain sorghum or proso millet for 10 months, sunflower for 22 months, field corn for 12 to 14 months, soybeans for 22 to 34 months, or any other crop until a field bioassay has been performed. Do not use on soil with pH above 7.9. Ally should not be used more than once in a 22-month period. Refer to the label for additional use and crop rotation guidelines.	Finesse 62.5% chlorsulfuron (Glean) and 12.5% metsulfuron (Ally) Residual weed control: Yes	Do not rotate to oats for 10 months, grain sorghum for 14 to 48 months, soybeans for 14 to 36 months, or any other crop until a field bioassay has been performed. Do not apply to soils with a pH below 5.0 or above 7.9. Refer to the label for additional use and crop rotation guidelines.
Amber Triasulfuron Residual weed control: Yes	Do not rotate to oats, barley, or rye for 6 to 18 months, grain sorghum for 14 to 24 months, soybeans or corn for 14 to 36 months, or any other crop until a field bioassay has been performed. Do not apply any herbicide with the same mode of action within 12 months on soils with pH less than 7.5 or 15 months on soils with pH above 7.5 after Amber application. Refer to the label for additional use and crop rotation guidelines.	Glean Chlorsulfuron Residual weed control: Yes	Do not rotate to oats or barley for 10 months, grain sorghum for 14 to 48 months, soybeans for 14 to 26 months, or any other crop until a field bioassay has been performed. Do not apply to soils with a pH above 7.9. Refer to the label for additional use and crop rotation guidelines.
Banvel Dicamba Residual weed control: very short (2-3 weeks)	Following a normal harvest of wheat, any rotational crop may be planted.	Harmony Extra 50% thifensulfuron (Harmony) and 25% tribenuron (Express) Residual weed control: No	Do not rotate to crops other than wheat, barley, or oats for 60 days.
Bronate/Bison 2 lb. bromoxynil (Buctril/Moxy) and 2 lb. MCPA per gallon Residual weed control: No	None	MCPA Residual weed control :No	No rotational restrictions by itself, but MCPA is almost always tank-mixed with another product, such as Ally, Amber, or Glean.
Buctril/Moxy bromoxynil Residual weed control: No	Do not plant rotational crops until the next season.	Peak Prosulfuron Residual weed control: Yes, some	Do not rotate to soybeans or canola for 10 months, alfalfa for 15 months, or sunflowers for 24 months following Peak application.
NOTE: This chart is only a brief summary of some of the relevant information on herbicides for wheat. For specific and complete information consult and follow all label directions.			

