

AGRONOMY

UNIVERSITY OF
FLORIDA
IFAS EXTENSION

NOTES

December, 2005

IN THIS ISSUE

FORAGE

Manage for Lower Cost Production	2
Poor Small Grain Growth	2
Top-dress Winter Grazing in January	2

WEED CONTROL

Beware of Coffeeweeds in Pastures	2
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MISCELLANEOUS

Summary of the Agricultural Health Study	3
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Manage for Lower Cost Production

Prices for fuel and fertilizer are at an all time high. It is important for growers to consider ways to use these resources more efficiently. The following ideas for reducing fuel and fertilizer prices are being implemented and have solid research and farmer experience behind them: 1) consider switching to conservation tillage to minimize equipment cost. 2) Use residual herbicides at planting, along with glyphosate, to reduce the need for directed applications. 3) Consider using new genetically modified cotton technology that will allow growers to use broadcast glyphosate all season to save time and fuel. 4) If cover crops are to be planted, low populations of legumes (like crimson clover) may be used to supply some of the nitrogen to the following cotton crop. 5) Include cattle in cotton rotations with winter annuals for grazing. This will result in better utilization of nutrients by recycling nitrogen that will be available for following crops. Cattle in cropping systems have proven to make the farm system more profitable and better utilizes land and labor resources by letting animals harvest forages. Some of these practices will take longer to implement into farm activity than others, but all have shown benefit in research and farm practice.

David L. Wright

Poor Small Grain Growth

Over the years, one of the biggest causes of poor small grain growth has been due to lack of deep tillage. If fields are spotty with irregular growth, this is a good indication that deep tillage was not done over the field. The lack of deep tillage will often show when root systems are shallow and above average rainfall has leached nitrogen below the limited root system. It is very difficult

to compensate when this occurs. Many people will try applying additional nitrogen, but this will also leach below the shallow root system. Sulfur may then be applied, but the results are rarely beneficial. Poor crop growth is most commonly seen if the compaction layer is in the top 4-6 inches, with fewer problems if the compaction zone is 10-12 inches deep. Regardless, these fields should have deep tillage done on a routine basis to overcome these obstacles.

David L. Wright

Top-dress Winter Grazing in January

If small grain were planted in October or November, it is advisable to split nitrogen applications by using another 40-50 lbs/A in January to stimulate growth. Applications every 6-8 weeks keeps winter annuals growing well without exposing large amounts of fertilizer to leaching. Herbicides may be applied with liquid nitrogen and sulfur to control most broadleaf weeds. If clovers are present in the winter grazing, broadleaf herbicides should not be used.

David L. Wright

Beware of Coffeeweeds in Pastures

Coffeeweeds, both sicklepod and coffee senna, are common pasture weeds. These weeds are toxic to livestock, but are unpalatable and rarely grazed when suitable forage is present. However, coffeeweeds are more tolerant to frost than many other plant species. After a light frost, bahiagrass and other pasture grasses will brown-out while coffeeweeds remain green. It is at this

time that animals are more likely to browse coffeeweed in search of fresh forage.

The symptoms of coffeeweed poisoning range from weakness and dark urine, in slight cases, to “alert downers” in more extreme situations. An alert downer will be fully aware and willing to eat, but unable to stand. The toxin in coffeeweed has not been identified and treatment for affected animals is unknown. Therefore, if an animal consumes a sufficient quantity of coffeeweed and becomes a downer, there are no effective treatments and recovery is not likely.

Coffeeweeds are annual plants that germinate each spring from seed and die in the winter. Therefore, the most effective means of controlling coffeeweed this time of year is by mowing. Clipping areas with high coffeeweed density is essential while controlling individual plants is less important. Mowing should completely eliminate the weed and regrowth is not likely to occur until next spring when seed germination begins.

Jason A. Ferrell

Summary of the Agricultural Health Study

The Agricultural Health Study is a long-term survey of pesticide applicators and their families with the primary objective to determine if pesticides used in their work are associated with health problems. More than 55,000 farm pesticide applicators, 30,000 farm spouses, and 5,000 commercial applicators participated in the study, which was conducted in North Carolina and Iowa. The team effort was conducted by the National Cancer Institute, National Institute of Environmental Health Sciences, U.S. EPA, University of Iowa, the Battelle

Centers for Public Health Research and Evaluation, and the National Institute of Occupational Safety and Health. The study reflected agriculture in those two states, primarily corn, soybean and hog production in Iowa, while North Carolina’s agriculture is a much more diverse group of commodities. Of the farm wives, 51 percent actually engaged in active farm work and 40 percent of those mixed or applied pesticides.

The survey took many factors into account, primarily related to participant lifestyles and their medical histories. A major survey hypothesis was that cancer rates of pesticide applicators are greater than those of the general population. Other questions of interest were how spouses differ in exposure to pesticides and if certain pesticides pose greater risks to applicators and their spouses. Of the 50 pesticides identified used by the applicators and their spouses, 2,4-D and glyphosate were the two used greatest in both Iowa and North Carolina.

The study also introduced an interesting approach to estimating a person’s lifetime exposure level to pesticides. This was done by assigning a point value based on a person’s average work-day exposure, the number of days exposed per year and the number of years of pesticide use. The work-day exposure factor used a point system based upon practices involving mixing, application, equipment repair and use of protective equipment. For example, more points were assigned to applicators who repaired their own equipment versus those who did not. Exposure levels were then correlated with cancer and other health-related incidents reported by those participating in the survey.

Although this study only involved correlation, and not cause and effect, there were some interesting findings. The overall

cancer risk for pesticide applicators was lower than that of the overall population and of the 20 specific types of cancers, pesticide applicators had lower incidence in 18 of those. Applicators did have greater risk (14 percent) of prostate cancer and their spouses were shown to have greater skin melanoma risk compared to the general population. In Iowa, applicators' children had slightly higher rates of all cancers and lymphomas compared to Iowa's general population. With prostate cancer, there was more association in those who were rated to have "high exposure" to methyl bromide and to chlorinated pesticides (men over 50 years of age with a family history of prostate cancer). Methyl bromide was a common soil fumigant used in North Carolina, and the greatest number of incidents with prostate cancer was reported to be in North Carolina. With men who had a family history of prostate cancer, there were 5 pesticides showing a correlation. Farmers' wives had no clear association for any of the 50 pesticides related to breast cancer incidence. Comparing those farmers' wives (ages 21 to 40) who mixed and applied pesticides versus those who did not, there were some

differences in female reproductive health aspects. The wives who mixed and applied pesticides appeared to have longer and missed menstrual periods compared to those who did not mix and apply. Several other health aspects were of interest, including nervous system health. The use of fungicides was associated with retinal degeneration in both farmers and their wives. Other health aspects were reported and the entire study may be viewed at <http://extension.tox.ncsu.edu/index.html>.

The study is ongoing and will continue until at least 2013. Although the study is based upon correlation and not cause and effect, these findings stress the continuous need to take into account why it is important to safely use pesticides. Such basics, including reviewing labels and properly using protective equipment, are important. Prostate screenings are a necessity, especially in men over the age of 50. Finally, using sunscreen and covering exposed skin, should be stressed, especially under Florida's conditions.

Fred M. Fishel

The use of trade names does not constitute a guarantee or warrant of products named and does not signify approval to the exclusion of similar products.

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