

PLANT & PEST ADVISORY

FIELD AND FORAGE CROPS EDITION \$1.50

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Keep Stored Grain Losses at a Minimum

Daniel Kluchinski, Mercer County Agricultural Agent

There are numerous stored grain insect pests that can cause large losses in stored grain. These insects feed on the grain, reducing kernel weight and grain quality, which can lead to financial losses at the elevator or reduced nutritional value of livestock rations. It is therefore important to prepare storage bins and develop a plan for preventing or reducing grain losses.

The most common source of insect infestation is old grain from internal and external sites. Internal sites would include old infested grain near or upon which new grain is placed. External sites include spillage areas, grain residue in augers and other equipment, and stored animal feed or grain. To reduce and eliminate such sites for these pests, clean around the outside of the bins. Remove any brush, weeds, fallen leaves or spilled grain from around the bins. This can be a haven for insects as well as mice and rats looking for a good meal and a protected site. Also, clean equipment and augers if you have been moving grain from farm to farm or bin to bin, or if the time period between such movements might have allowed for pests to infest the equipment.

Over the winter, monitor and inspect the bins periodically. A good program should include inspection once a month during storage. Look for any signs of infestation such as crusting or webbing on the upper surface, musty odors or wet, warm grain. All are indications that insect activity may be present. Probing the grain is particularly useful in determining infestations, grain damage or moisture in the grain mass. If present, further sampling may be helpful in determining the problem and course of action.

For grain in long term storage, the key is aeration. During the fall, winter and spring, the best way to slow insect activity is to cool the grain mass. The optimum temperature for insect development is 70° F. If the grain temperature is below 55 to 60° F, insects quit feeding and egg laying, and if maintained at even lower temperatures, will eventually starve out.

These procedures should help to reduce potential losses due to insect pest infestation. If insects are found, bring a sample to your county agricultural agent for identification and information on best control practices. □

Hay Quality

Donna Foulk, Program Associate in Field Crops IPM

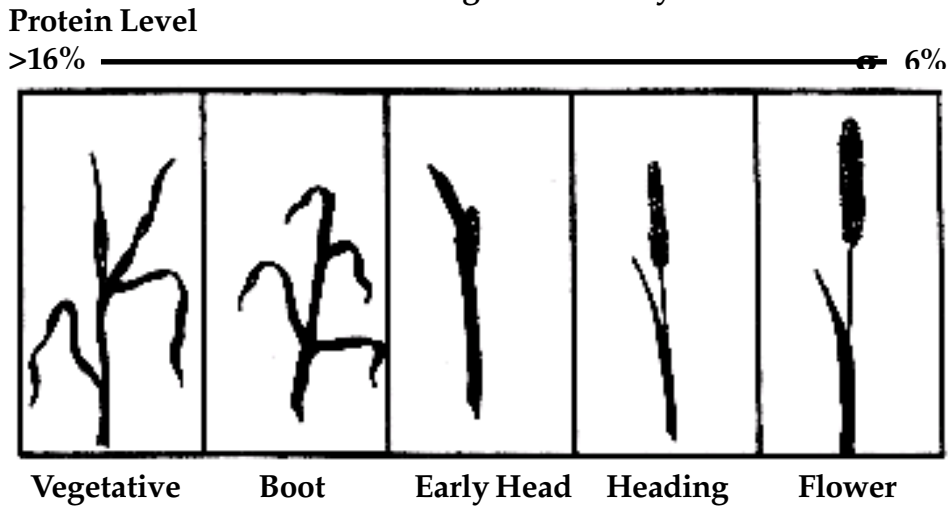
Animals that were grazing on pasture all summer received a significant portion of their nutrients from the grasses in the pasture. Young pasture grasses can contain as much as 18 to 20% protein on a dry matter basis. As the pasture begins to decline in late fall, livestock owners need to locate other sources of fiber and nutrition for their animals. Hay can readily fill these needs.

Hay varies greatly in protein levels and total digestible nutrients. Just as young pasture grass is high in protein, hay that is in the vegetative stage is young, tender, and high in protein. As hay plants get older and produce a seed head or flower, the carbohydrate in the

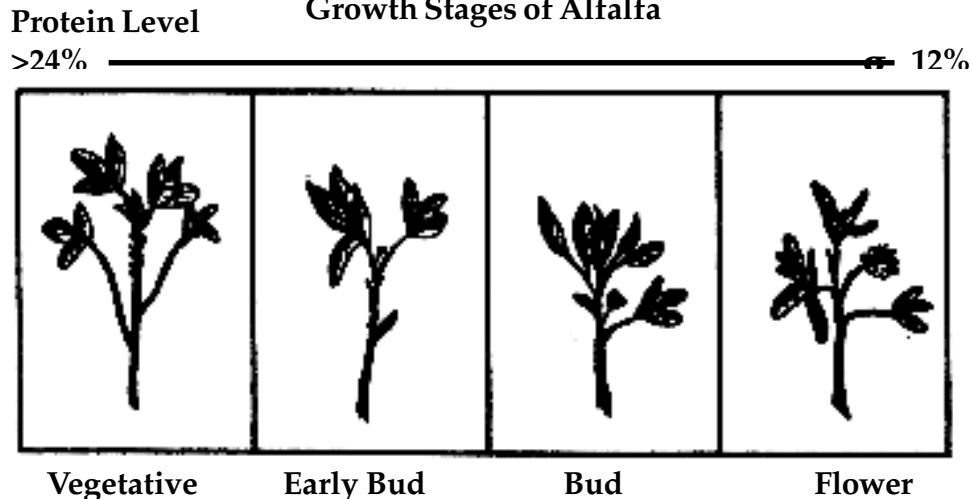
hay is converted to cellulose and lignin that horses cannot digest. Protein levels and digestible nutrients begin to decline. The stage of development of the plant determines the nutritional quality of the hay. Grass hays that are vegetative often contain protein levels nearing 20%, but will drop to 12% protein at flowering, and as low as 5-6% after the seeds have dropped. Coarse hay with low levels of protein has lower feed values. In general, pleasure horses require a diet that has a total protein value of 8-10%, while horses in work require 10-11% protein. It is important, especially in winter, to feed hay that is higher in quality and, therefore, higher in protein, calories, and digestibility.

The state of maturity of both leguminous and grass hays can be estimated by using the stage of development of the grass or plant. The chart below can serve as a rough guideline of hay protein levels.

Growth Stages of Timothy



Growth Stages of Alfalfa



Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

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CONTRIBUTORS

Rutgers Cooperative Extension Specialists

George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Jeremy Singer, Ph.D., Field and Forage Crops
Michael L. Westendorf, Ph.D., Animal Science

RCE County Agricultural Agents and Program Associate

Burlington, William J. Bamka (609-265-5757)
Hunterdon, Robert C. Mickel (908-788-1338)
Mercer, Daniel Kluchinski (609-989-6830)
Monmouth, Bill Sciarappa, Ph.D., (732-431-7260)
Salem, David L. Lee (856-769-0090)
Sussex, Daniel Wunderlich (973-579-0985)
Warren, Everett A. Chamberlain (908-475-6503)
Donna Foulk, Program Associate, IPM

University of Delaware Cooperative Extension

Mark Van Gessel, Ph.D., Weed Science

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Crop Management Communications Editor

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