

Round Bale Quality Loss from Hurricane Floyd



These bales (mix of fescue/clover/dallisgrass) were sampled at the Center for Environmental Farming Systems in Goldsboro, NC. The bottom of the bale reveals considerable losses as a result of being stored on a poorly drained soil; this site received 36" rain in Sept.

Photo taken Oct. 12, 1999

Round Bale Quality Loss from Hurricane Floyd



The outer portion of the bale was completely spoiled, offering little feed value.

Total wet bale wt=500lbs. Spoiled wet Hay=145lbs; Unspoiled Hay=355 lbs.

Moisture samples taken from the spoiled and unspoiled fractions of the bales indicated 87% of the hay (on a dry matter basis) was satisfactory.

Photo taken Oct. 12, 1999

Round Bale Quality Loss from Hurricane Floyd



The second bale sampled revealed far less damage as a result of the high rainfall.
Total wet bale wt.=594 lbs. Spoiled wet Hay=95 lbs.; Unspoiled wet Hay=499 lbs.
Moisture samples taken from the spoiled and unspoiled fractions of the bales indicated 94% of the hay (on a dry matter basis) was satisfactory.

Round Bales of Coastal Bermudagrass stored on a well drained site new Goldsboro, NC that received over 30” of rainfall but no flooding



The thatch layer on the bale shed the excessive rainfall preserving the quality inside the bale, much the same as would be expected in normal winter period.

Photo taken Oct. 12, 1999

Round bales of Coastal Bermudagrass stored on well drained site near Goldsboro, NC that received over 30" of rainfall but no flooding



Very little hay spoiled on the outside of this bale due to the hurricane. The 2-3" of spoilage shown here is normal for the outside storage losses. The inside of the bales revealed minimal losses since they were butted together tightly.

Photo taken Oct. 12, 1999

Round bales of Coastal Bermudagrass stored on well drained site near Goldsboro, NC that received over 30” of rainfall but no flooding



The bottom of the bales showed normal spoilage with little evidence of any additional “wicking” effect from the well drained soil.

Photo taken Oct. 12, 1999

Brief summary of hay damage from hurricanes

- Bales that were actually flooded will not be worth anything for feeding; they may be used for erosion control, compost or fuel. Some bales may heat and could combust if moisture conditions within the bale remains in the 25-40% range.
- Bales which were packaged tightly and stored on well drained soil, gravel, pallets, old tires, etc. appeared to have no unusual damage due to the high rainfall of the past few weeks.
- Bales that were loosely packaged or stored on poorly drained soils or stacked in such a way to allow water drip between bales may have some additional spoilage; perhaps the same amount and kind of damage as one might see in bales stored in a similar manner for more than a year.
- A significant amount of hay is wrapped for haylage, and there would be no excess losses in this forage due to the storms. In fact, “tubes” of haylage that were flooded at CEFS, floated out of position, but were not torn, and the haylage inside was in good shape.

Hurricane Floyd's Effect on Pastures at the CEFS



Pastures that were flooded twice in Goldsboro showed significant stand loss. Common bermuda, bahia, and dallis appeared to have survived best. The dead plants in this photo are crabgrass and broadleaf signalgrass
Photo taken Oct. 12, 1999

Bermuda growing up through about 3 inches of sand which had settled over it from a big wash-out nearby.



Hurricane Floyd's Effect on Pastures at the CEFS



Bermuda grass was the only survivor in this mixed pasture of crab grass, dallisgrass, goosegrass and thin stand of alfalfa.
All alfalfa along the lower part of this field (tree line) was killed by the flooding.

Photo taken Oct. 12, 1999

Hurricane Floyd's Effect on Pastures at the CEFS



Bahiagrass survived the flooding with little damage. However, the growth which was more than 3-4 inches tall seemed to suffer more than short growth.

Photo taken Oct. 12, 1999

Hurricane Floyd's Effect on Pastures at the CEFS



Alfalfa which was flooded did not survive.
Photo taken Oct. 12, 1999

Surviving fescue



Surviving fescue on a moderately well drained site (Lumbee sandy loam) within the same field where most fescue died; however most of the dead fescue was on a Wagram loamy sand and/or Johns Sandy loam. The green plants in the background of this photo are the Georgia5 variety and the dead plants are Jessup endophyte-free variety. The Georgia5 plants were shorter than the fescue that died. So there are too many "confounding" aspects to try to draw many conclusions about why some plants survived and others died.

Hurricane Floyd's Effect of Pastures at the CEFS



Fescue stands were devastated by the high water conditions. Complete stand losses were noted in several fields, especially where the growth was "rank".
Photo taken Oct. 12, 1999

Only a few tillers survived where several inches of growth was present at time of flood.



Fescue



Fescue with more than 3-4 inches of growth at time of flooding suffered more than closely grazed growth, but the response may also be related to soil drainage.

Pasture with Matua



Field on left was a closely grazed pasture of Matua mixed with crabgrass, on right was closely grazed crabgrass and signalgrass. The green plants on left are Matua seedlings which have germinated following the flood.

Poorly Drained Site



Field of dallisgrass, signalgrass, crabgrass flooded for several days showing surviving curly dock, some dallisgrass and signalgrass. This site is very poorly drained Leaf loam that stays wet, even in normal years.

Signs of Regrowth



Close up photo showing dead crabgrass with newly germinated buttercup and new regrowth of a single broadleaf signalgrass plant.

Impact of Several Days of Flood water



Several days of flood water cover resulted in death of most grasses and left a "thatch" of "matted" tissue on the leaves of the surviving leaf tissue. Animals are not likely to eat this vegetation. Note the green tissue in the "close-up." These plants will eventually recover.

Broadleaf Signalgrass



Broadleaf signalgrass showing leaf coating of sediment and mildew, etc.

Animals are not likely to eat this tissue.

Stagnant Water



Stagnant water in low lying areas showing an “oily” film on surface. It is probably best to keep animals away from such areas for awhile.

Brief Summary of Some Flooded pastures at CEFS, Goldsboro, NC

We walked the pastures at the CEFS beef in Goldsboro on Oct 12, 1999 and can make the following general observations.

- Areas that did not have standing water looked satisfactory, but may be Nitrogen deficient because of leaching.
- Areas that flooded for several days caused death of all of the annual type plants (crabgrass, broadleaf signalgrass, goosegrass).
- Generally alfalfa, fescue and rescue grass also perished.
- The grasses that seemed to tolerate the flooding and were green on Oct 12 included bermudagrass, bahiagrass and dallisgrass. Only one small area of flooded fescue survived and that was due to a complicated combination of plant height at flooding, soil texture and variety difference too complicated to really determine WHY it survived.
- Rescue was killed by the flooding, but new seedlings had emerged by Oct 12 and where the old dead residue had been removed or was very short at the time of flooding, those seedlings will develop normally, assuming Nitrogen is available.

Cont'd Summary of Some Flooded Pastures

- Some other observations indicate that Eastern gamagrass survived the flooding as well as the bermuda and bahia.
- It appears that live plants that are covered with silt and mold will likely survive, but it may take a few weeks before animals will want to eat such plants. If winter pasture is to be planted on those areas, it may mean trying to mow the old residue down or trampling it into the soil before planting... so that germinating seedling can compete for light during early development.
- Damage to the pastures will extend to the feeding period at least 30 days on the beef unit.
- Fences were probably 20% damaged (mostly broken insulators and debris that needs cleaning up).

Summary Suggestions for Fall Pastures

- Apply 20 – 50 lbs N/acre to cool season grasses like fescue, orchardgrass small grain to stimulate some fall growth.
- Plant rye or wheat or ryegrass immediately for late winter-spring grazing.
- It is expected that all of the rain may have leached much of the N from the root zone, therefore watch for “yellowing” appearance on the cool season species. However, the growing season is getting short now and there will be little need to apply more the 20-50 lbs N/acre at this point