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Flood Damaged Forage Considerations: Documenting Damage, Cutting Losses, Avoid Compounding the Damage

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Damage Assessment

First, properly document damages and losses for potential relief funds: Even if you didn't purchase crop insurance, funds may be available. It is critical to take photos that are date stamped and show all aspects of damage. Reporting and documentation of the damage needs to be done **Before Clean-up.**

This Vermont Agency of Ag link provides a good list of where to report damages and potential relief funds: https://agriculture.vermont.gov/agency-agriculture-food-markets-news/severe-storms-and-flooding-recovery-next-step-farmers Even if you don't think you have crop insurance, report damage to FSA and to 2-1-1.
Next, estimate feed losses and inventory replacement needs including tons of: dry matter (DM), protein, starch, fiber (digestible fiber). Contact Extension personnel, your nutritionist, or crop consultant for assistance with this process.

Harvest and action plans will depend on crop type, time of growing season, extent of damage and extent of loss of forage inventory needs. Replacing fiber, protein and/or energy of lost crop. Consider options to grow digestible fiber in limited growing season with your Agronomist. Options to purchase forage may be limited. Expense of purchasing replacement feed may be least expensive option in the long-term when considering potential animal, production and equipment costs of feeding flood damaged forage.

Contamination Concerns: Flood waters may contain sewage and disease organisms along with silt and debris. Sewage contamination of flood waters carries risk of coliforms, listeria and other toxic microbes in flooded forages.

Managing the Corn Crop

Dead: Brush cut 2x at angles, disc, till, and replant or plant to summer annuals or a cool season annual depending on time of the year. If August or later, cool season annuals (oats, barley, rye, peas, etc.) will provide the best option for fall forage. Please refer to the UVM Annual Forage Guide for more information: https://www.uvm.edu/sites/default/files/Northwest-Crops-and-Soils-Program/Articles_and_Factsheets/Annual_Forage_Guide_5.pdf.

Down/Sideways (Gooseneck growth) but Not Dead:

Possibly plan to harvest new growth only; high chop, snaplage, earlage. Is it worth the expense (equipment wear, time) and nutritional risk or should we terminate and re-plant? See Above

Upright/Living but silt laden:

Assess the extent of silt accumulation & possible tissue damage leading to fungal and microbial growth. Many mycotoxins in forages are formed in the field before harvest. There is **NO** prevention or treatment at harvest to ameliorate this. Inoculants or acid preservatives can only help minimize the risk of further fungal growth while in storage.

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Besides silt, consider that living tissues have been "inoculated" with wild yeasts, mold other micro-organisms that are likely not friendly forage fermenters. (See forage preservation below)

Consider chopping above silt line and above diseased plant tissue to minimize contamination.

Managing the Hay Crop

Assess level of Silt contamination: Depending on the forage type, <10% soil ash is a conventional feeding limit, above 10% poses a higher risk to animals. Consider hand sampling silt laden forage and submitting for Ash analyses. Keep in mind most grasses typically have <8% ash as inherent mineral content; legumes <15%. Total ash values greater than these values can be attributed to soil contamination. Consider the cost of wear on equipment and possible animal & production losses. The value of 1 high producing milk cow, new set of chopper knives, versus buying forage either locally or from afar.

Dry Hay, Balage or Silage: Flood damaged forage does not ferment as well. If possible, harvesting as dry/drier forage is advised. Soil, silt & debris is harmful and damaging to animals and equipment. High levels of soil minerals Fe (iron) and Al (aluminum) act as buffers against proper silage fermentation. Soilborne Clostridia can be a source of Botulism toxins, butyric acids and biogenic amines in fermented forages, putting animals at great risk especially with wetter forage. With fermented forages, drier conditions 35-40% DM helps to inhibit Clostridial spore formation, but too dry >40% DM increases risk of low packing density, prolonged aerobic fermentation and yeast/mold formation. High levels of soil contamination of ingested feeds will inhibit rumen fermentation and possibly cause digestive upset, off feed and reduced productivity, in addition to the potential toxic activities of aforementioned organisms.

Grazing: **Do not graze silt laden pasture**. Rain and time may allow silt to wash of plants and give time for new growth. However, scout pastures carefully before grazing, and graze with a tall post grazing residual (not too short) to avoid cows consuming silt. If silt levels are still too high to safely graze, skip that area. Report loss of fences, water lines and water tubs and damage to pasture lanes as well as lost/damage to pasture forages in pastures to FSA along with other crop losses

Harvest delayed by flooding; NOT flooded but now over mature forage. Mature forages (>60% NDF), chop at 35% DM. Standing crop is likely to be 25-30% already, not much wilting or drying required. Short Total Length of Chop (0.75") is ideal for packing and fermentation. This will also improve Dry Matter Intake (DMI) of lower quality/higher NDF forage.

Managing dead, trashed or silt/gravel covered forage: corn, pasture and hay crop

Debris and gravel removal
Brush cut, multiple angles rather than risking chopper equipment
Till vs Remove
How long to wait to replant?

What to replant with? (call us for advice)

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STORE GOOD FORAGE SEPERATELY away from "At RISK" Forage. If putting up at risk forage, then control the level of feed out by segregating it and having proper forage analyses conducted. Do not Co-Mingle with good forage. Feeding dilute amount of "at risk" forage is tolerable to minimize DMI and milk losses as well as health and death risk to animals. Unfortunately, feeding high risk forages is a matter of roulette with animals and productivity. If harvested and co-mingled with the good forage, we have no control of feeding levels of the bad or possibly increasing deterioration of the good forage.

Forage Preservation:

Proper moisture/DM, length of chop, packing density - Always critical. Now more than ever. Clostridial spore activity is minimized at 40% DM. **Avoid TOO WET or TOO DRY**; Goal of 35-40% DM for silage, 45-60% DM for balage.

Silage Inoculant - Strong lactic acid formation (Lactobacillus species, Pediococcus pentosans) and possibly L. buchnerii for stability at feed out. Inoculant should provide at least 10^5 CFU/g of forage. **Apply at least 1.5x "normal" application rate if not 2x.**

Acid (Buffered Propionic) - with drier forage, propionic acid may be a better option than microbial inoculants. If forage is suspect, low sugar content, "inoculated" with flood borne microbes, propionic acid may be best option to preserve and limit further fungal growth while in storage. Nothing helps with Toxins formed in the field. Apply 3-4lb/T forage

Feeding of High-Risk Forage

Limited feeding of flood damaged forage may be tolerable to some animals. This depends on level of contaminants and potentially toxic compounds and physiologic status of the animal (young, dry cow, lactating). Consult with your nutritionist.

Analyzing Flood Damaged Forage: Wet chemistry analyses is the only means of analyzing ash laden forage. Analyze total ash, and mineral content; especially Fe and Al; mycotoxins and pH and VFA profile of fermented feeds. Feeding rate of flood damaged forage will depend on these wet chemistry analyses; work with your nutritionist.

Please feel free to contact us at:

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