

## Why did the large round bale cross the road?

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*photo by Greg Roth, Penn State University*

The answer to that is really quite simple - it was the flood. Many of us, farmers included, are now faced with cleaning up the mess. And many of us are navigating in uncharted waters (no pun intended). Some farms have been hit by a second round of flooding in one of the wettest July's on record.

Some farmers are faced with salvaging submerged and flood damaged crops while others have spotty damage resulting from ponding in low areas of their fields. And then there are the ag bags and large round bales that were submerged. Silage made from flood damaged fields in Vermont several years ago ranged from ok to black or rotten and some farmers reported decreased milk production.

Unfortunately, there are no guarantees or magic bullets, but I have been able to glean some guidelines for salvaging flood damaged crops and feeds after talking to several agronomists and "surfing the web" for guidelines.

Of course, crop insurance may cover flooded crops but it is important to report damage as soon as it is identified. If you plan to replant or plow down the damaged crop, make sure the insurance adjuster has a chance to see it first but by now, it is probably too late to replant most crops. If the field could not be replanted because it remained too wet, then make sure you file a "prevented planting report" ASAP. If the flooded crop can be salvaged, you should still report it to your insurance company and then document yield at harvest.

In general, affected fields may have a lot of debris and dirt on them. This places them at greater risk for fungal and bacterial contamination that may have a negative impact on fermentation and feed quality. Ash levels may be higher than normal which will have an impact on nutrient density in affected feeds. It may also cause dusty, dirty harvest conditions that may result in added costs from wear on machinery.

If corn plants have a lot of silt on them, grain harvest may be a better choice since corn for silage will be at greater risk for fungal and bacterial contamination.

The following guidelines may help reduce risk on damaged fields chopped as silage.

1. Scout fields before harvest to identify potential problem areas and schedule harvest.
  - Check whole plant moisture, kernel development and presence or absence of any ear or stalk rot.
  - Avoid chopping fields with heavy dirt or silt on it.
2. Harvest above the silt line to avoid soil contamination.
3. Tighten up management at harvest to promote a good fermentation
  - Chop at the right length of cut.
  - Use an approved inoculant.
  - Fill fast, pack well, cover tightly, etc.
4. Keep flooded forage separate so it can be evaluated before feeding.
5. Check with your veterinarian or feed consultant about feeding strategies to minimize the risk from feeding flood damaged forages and feed.



*photo by Greg Roth, Penn State University*

6. Testing for energy, ash and mycotoxins is highly recommended.
7. Monitor animal health closely since contamination from manure, sewage and other chemicals is another possibility, but one that is difficult to assess.

Harvesting flood damaged corn for grain should be carefully managed as well;

- Monitor the field prior to harvest. Look for stalk and ear rots that may indicate an elevated potential for mycotoxins in the harvested grain. Fields that remained flooded for more than 12 hours are at greatest risk.
- Change combine air filters more frequently and operators should avoid breathing too much dust.
- Limit dirt coming into the grain bin by harvesting grain as dry as possible and avoiding the hardest hit areas in fields.
- Monitor grain quality. Mold and mycotoxin levels may be higher in damaged or stressed corn fields and should be tested.

Once things have dried out enough to even think about harvesting perennial forages you need to check the field for a few things:

1. It goes without saying that you will have to remove any debris that may damage farm machinery or harm animals. It is amazing what you might find in your fields after a flood! That goes for corn and soybean fields too!
2. If it is time to harvest the forage but it is covered in silt and sediment, it may be best to simply mow it and chop it back on the field, topdress it to stimulate regrowth and move on. The risk due to pathogens, limited palatability and poor fermentation is just too great to feed it to your animals. Of course, wait until your crop insurance adjuster has had a chance to see it first! Removing it as large round bales is another option but it is probably best to use it for mulch or compost.
3. If several weeks will elapse before it reaches harvest maturity, wind, rain and sunlight will help remove sediment and kill off some of the potentially harmful bacteria that may limit fermentation. Proceed as usual, but keep forage separate from non flooded forages if possible. Ag bags or separate storage areas will allow you to sample, evaluate and adjust rations accordingly!
4. Follow best management practices including harvest moisture, length of cut, fill fast, pack well, use an approved inoculant to make sure you have the right bacteria for the job and seal the silo to keep oxygen out.
5. Test all forages as usual but keep a close eye on the VFA score and ash content. Check our Feed Composition Library to determine what typical values should be.
6. Topdress fields that appear to be in good condition. You need at least 4 healthy alfalfa plants per square foot to justify additional inputs of fertilizer and herbicides.

Many flooded fields recovered surprisingly well and may look ok from a distance but it has been my experience that it is necessary to do more than a "windshield survey". A surprising amount of residue may remain on the lower leaves of corn and perennial forages for weeks after flood waters subside. Some corn plants may look ok but upon closer examination may have sustained damage to the growing point. The growing point should be firm and white, not yellow or brown in color. Small grains that look "ok" may have lots of grit and dirt when you roll the kernels around in your hand. It is unlikely that feed mills will accept this "dirty" grain and it could be risky to feed it or use the straw for bedding. Again, check with your local extension specialist, nutritionist or veterinarian before feeding any of this.

Ohio State Plant Pathologist Anne Dorrance says that flooded soybeans will be stunted season long. Soybeans sitting in 1-2 inches of water for up to a week will take a 20-50% yield hit depending on the variety and the soil drainage. Wet conditions also open the door for many plant diseases including pythium and phytophthora root rot. Prolonged dry weather later in the summer may add insult to injury due to damaged root systems.

In addition to growing crops, the flooding wreaked havoc on baled hay and other stored feed on affected farms. Flood or rain damaged feeds may mold and heat due to the growth of yeast and molds. Some of these molds may produce toxins while others may simply reduce palatability and nutritive value of the feed. If possible, you should avoid feeding flooded feed, especially if it is heat damaged, moldy or rotted. Any flooded feed could also be contaminated with e.coli, salmonella, listeria, etc. even when dry. On a more positive note, water damage may be superficial on densely packed silage or large round bales so it may only be necessary to dispose of the portion that was saturated. Check with your veterinarian and/or local authorities (Department of Agriculture) about any limitations on feeding or marketing of flood damaged stored feed, silage or grain due to possible contamination (sewage, pathogenic organisms, pesticides, chemical wastes, heavy metals, etc.)

The bottom line is to practice extreme caution when harvesting and feeding flood damaged forages and grains. The best bet is to keep all flood damaged feeds separate from undamaged feeds and test for feed value and toxins or pathogens to avoid animal health and production problems down the road. This can be quite costly any way you look at it since it is difficult to know what to test for!

Our F321 NIR package is probably your best bet to quickly and accurately determine the feed value. It also provides a VFA score for your ensiled feeds. Mycotoxin testing is another recommended procedure for flood damaged feeds. Check our website [www.dairyone.com](http://www.dairyone.com) for the latest packages and pricing.

For additional information, check out the following websites;

<http://cnydairy1c.cce.cornell.edu/cropconditions/cropconditions.html>

<http://www.cas.psu.edu/docs/biosecurity/EMERGENCY/Flood.html>