



## Drought 2023: Take Stock Now of Your Forage and Herd Inventory

By Ryan Sterry, Extension Regional Dairy Educator

Reviewed by Jackie McCarville, Extension Regional Dairy Educator

2023 has introduced us to the new term “flash drought.” With dry conditions throughout Wisconsin and the upper mid-west, dairy producers are encouraged to inventory forage supplies and start planning for potential shortfalls. Pencil and paper, electronic spreadsheets, and commercial software options are available to assist you in creating and tracking your forage inventory. We cannot predict if and when conditions will improve, but we do have control over how we respond.

**Dry Hay and Wrapped Baleage:** Producers are highly encouraged to determine their average bale weights when making a forage inventory. This can be done by weighing a few individual bales or a wagon load of similar type hay. Actual bale weights can vary from manufacturer baler settings based on the type of hay, field conditions, and machine operator.

In addition to counting the number of bales, do an inventory of bales by quality. If a forage analysis hasn't been analyzed yet, describe the cutting and type of hay. Doing an inventory by quality will help you plan for which groups to prioritize that lot of hay to. For example, a baled hay inventory could look like this:

Description	Ave Bale Weight	Number of Bales	Estimated Storage Loss Until Feeding	As Fed Tons Available to Feed	Notes
2 <sup>nd</sup> cut alfalfa big squares	850	150	5%	60.6	Stored in shed
1 <sup>st</sup> cut round bales grass-alfalfa mix	1050	25	7%	12.2	Net wrapped
3 <sup>rd</sup> cut alfalfa wrapped round baleage	1350	75	5%	48.1	50% Dry Matter

**Silages:** The amount of forage in a bag, pile, bunker, or upright silo is variable depending on the packing density. Spreadsheet tools are available to help make these estimates. Adjust for the type of forage, as haylage and corn silage can have different packing densities. At a minimum, you will need to know the diameter and length for silage bags; the height, width, and length of bunker silos and piles; and the diameter and fill height for upright silos.

It is also important to track average dry matter content for ensiled forages to create an accurate inventory. While we typically work in As Fed (AF; moisture + dry matter) pounds when mixing and loading feed, you may need to convert back and forth with Dry Matter (DM) pounds to determine your total forage needs. Your nutritional consultant is also looking at the amount of dry matter cows are consuming, not just the as-fed amounts. For example:

- Silage bag with 50 tons of haylage at 65% moisture
- 100%-65% moisture = 35% Dry Matter (hint: moisture + DM should always equal 100)
- 35% Dry Matter multiplied by 50 tons of As Fed feed remaining = 17.5 tons of Dry Matter

The UW Forage Needs and Inventory spreadsheet tool contains useful tabs for calculating silage bag capacities, bunker silo capacities, silage pile capacities, and tower silo capacities (<https://livestock.extension.wisc.edu/files/2020/09/forage-inventory-and-needs.xlsx>).

**Pasture:** Extension Grazing Specialist Jason Cavadini recently prepared a fact sheet addressing pasture management during a drought that provides additional information (<https://cropsandsoils.extension.wisc.edu/articles/managing-pastures-in-drought-conditions/>). Poor management during drought can slow pasture recovery after the rain starts falling again. Farmers need to understand how grazing management can either intensify or reduce drought stress.

Pasture can be challenging to inventory since there are no harvested bales to count or haylage loads to weigh. Tools do exist though to aid farmers in this task. Hand clipping, pasture rulers, and rising plate meters can be used to estimate pasture yield.

**Account for Storage and Feeding Losses:** Storage and feeding losses are also referred to as “shrink.” Most dairies have taken a closer look at their bunk management and feed-out practices in recent years, but now would be a good time to re-evaluate and make any necessary adjustments to minimize these losses. These losses are real and need to be accounted for in total forage needs. For example, a farm has a haylage bag storing 28 tons of dry matter. Estimated losses are 8% in storage and 5% at feedout. This results in 24.26 tons of dry matter actually fed (3.64 tons lost). Another way to look at this is our farm needs 150 tons of dry matter in corn silage. Our farm will be using a covered pile for storage. Estimated losses are 12% in storage and 5% at feeding. To meet their 150-ton need, the farm actually needs to place 183 tons of corn silage dry matter into the pile at harvest time.

**Estimating Forage Needs:** actual needs will vary depending on milk production level, growth stage, and ration composition. Good communication between the farm and its dairy nutritionist will aid in planning for forage needs going into winter. If you are still unsure, a good starting place is looking at current forage intakes per animal per day to estimate needs for the year. Dry Matter Intake (DMI) can be over 4% of body weight for high-producing cows, 3% for late lactation cows, and closer to 2% for dry cows and heifers. Forage needs will vary, though, based on the ratio of forages to concentrates in each ration. Neutral Detergent Fiber (NDF) is a measure of both fiber content and forage quality. As NDF content decreases, the gut fills less, and the cow can consume more of that particular forage. On the other hand, forages high in NDF can limit DMI. On average, an animal can consume 1.2% of its body weight in NDF.

**Herd Inventory and Culling:** Along with looking at your forage inventory, now is also the time to inventory your herd. This isn't just counting the number of mouths in the herd to feed, but also taking a look by production

stage (young heifers, springing heifers, early lactation cows, late lactation cows, dry cows, etc.). This serves two purposes: 1) estimate the total amount of feed needed to carry through until the next growing season, and 2) appropriate lower and higher quality forages according to animal need (growth stage and production level).

With declining milk prices and high beef prices, now may be the time to reevaluate break-even production levels and cull lower-producing individuals. This will also reallocate limited forage supplies to more profitable animals.

**Resources:**

Making a Feed Inventory <https://fyi.extension.wisc.edu/forage/files/2014/01/FeedInventory-FOF-Formatted-11-3-12.pdf>

Managing pastures in drought conditions <https://cropsandsoils.extension.wisc.edu/articles/managing-pastures-in-drought-conditions/>

Drought Resources for Livestock Producers <https://livestock.extension.wisc.edu/articles/drought-resources-for-livestock-producers/>

Thoughts for Drought: Forage Inventorying <https://extension.psu.edu/thoughts-for-drought-forage-inventorying>