

# Feed Inventory and Feed Utilization Planning: Important Precursor to Your Forage Growing Plan

*Robin Newell, S&W Seed Company*

**T**he 2019 harvest season is in the rear-view mirror, and no doubt you've tallied up your forage inventory. A forage inventory is the basis for your feed utilization plan to maximize animal production output, from the amount and quality of forages you have on hand. This can help you plan your forage utilization rates to make forages last until the next anticipated harvest. It also helps you plan forage and feed purchases, and is useful for cash flow and tax planning.

**Know your tons of each individual feedstuff on hand.** Count up your feed, forage, and animal requirements. Tally them by dry matter tons and categorize by nutritional quality. Good sampling procedures to obtain accurate moisture content is essential for estimating dry matter tons of feed inventory, especially with ensiled forages and baleage. Feed quality analyses is important too, since forages represent the largest and often most variable ration components.

**Be careful not to make assumptions about forage quality based on your previous history.** The 2019 harvest season threw a lot of curveballs. Many farmers had late first crop hay harvest with associated reductions in digestibility. Delayed planting led to plenty of immature corn silage harvest, with reduced starch content and reduced net energy. Cover crops and stover, if harvested for feed, have different nutritional profiles than more traditional haylage and corn silage. Given all these 2019 departures from 'normal' forage crops and quality, reliable feed analyses will be critical for developing a successful feeding plan that best utilizes the feeds you have on hand, as well as those you may need to purchase.

**Re-assess your feed inventories after you've settled into rations.** Most dairy operations settle into rations by early winter, based mainly on new crop forages. Take the opportunity to perform a mid-winter re-assessment of forage and feed inventories. Verify the utilization rate of each feedstuff, and re-affirm how long each feedstuff will last. Making changes or substitutions to your rations could lead to a change in your feed purchases or next season's cropping plans.

**Consider your feed inventory as you develop your crop growing plan for next year.** Forecast your total needs for each forage and feedstuff for the next full feeding period (typically the full year feeding period from one harvest to the next). Subtract your anticipated ending inventory of individual feedstuffs, then add back an amount you'd like to carry over. These calculations help you plan the amount of each feedstuff to grow. You can use prior 3-5 year average yields as your guide for acreage planning. Crop rotation and manure management will be considerations.

**Don't forget to build in 'safety stock' when forecasting future forage needs.** Crop yields and resultant feed inventories change from one growing season to the next. One of the primary lessons we can all learn from 2019, is the need to accommodate the inevitable variation in growing season yields, harvest, and storage losses, etc.

**Identify the need for purchased feeds early.** Whether you purchase or forward contract purchased feed needs during or soon after harvest, or whether you purchase as needed, having a purchase plan is important. The total amount and purchase timing will be important to cash flow and may impact your income and tax planning. The sooner you have a good idea of what you'll need to purchase, the more options you may have. Your purchase decisions can be more well-informed and purposeful. Culling decisions may be impacted too.

**Consider crop substitutions for earlier harvest when feed inventory is short.** A well-planned crop substitution can offer earlier harvest and relief from purchased feeds, but often carries a yield or quality penalty, sort of like kicking the feed inventory can down the road. Alternate forages will dictate ration changes that could further change your feed utilization rates. Be sure to factor these changes into your plans.

**A shortage of corn silage can be shored up earlier than the next corn silage harvest by substituting small grains cut for silage.** Small grains can grow and accumulate dry matter yield during cool spring temperatures before corn planting occurs. Small grains can be chopped for silage at boot or dough stage, months earlier than corn silage harvest. But there will be a yield penalty vs. corn silage. Also be aware, small grains cut at these two different stages are essentially two different feeds with respect to fiber digestibility and starch content.

Feed Inventory Assessment & Planning Schedule	
<b>October</b>	Analyze dry matter and feed quality of conserved forages.
Post-Harvest Feedstuffs Inventory	Ration adjustments based on new-crop forages. Identify feedstuff surpluses and shortages. Finalize a purchasing plan for short feedstuffs.
<b>Dec-Jan</b>	Affirm utilization rates after rations settle into new crop forages.
Mid-Winter Inventory	Adjust inventory utilization expectations through next harvest. Create next season's cropping plan if you haven't already.
<b>March</b>	Finalize adjustments to cropping plan before planting.
Spring Inventory	Decide crop substitutions for earlier harvest if needed. Review pasture contingency plan in case of drought. Predict range of carryover feed volumes depending on growing season outcomes.
<b>July</b>	Forecast crop yields based on growing season to date.
Inventory Forecast for Upcoming Year	Forecast feedstuff inventories for the upcoming feeding cycle. Predict short/surplus feedstuffs for early purchase/sell decisions.

**Several crops can be considered for additional yield potential following small grains harvested for forage.** Warm-season crops like sorghum-sudangrass, forage sorghum, and millet can take advantage of remaining warm summer months of the growing season. Brassica species, late-planted oats, and other 'cool-season' crop options can take advantage of cooler autumn growing conditions.

**Consider summer alfalfa establishment following small grain harvest.** Late July through early August can be an excellent time

to establish new alfalfa stands, with less weed pressure than spring planting. Late summer establishment should not be counted on for harvestable yield that fall, but can contribute the following year as a fully established stand at full yield.

The success of these 'second crop' plantings will be determined largely by soil moisture adequacy and remaining growing season heat units. These crops offer pasture, green-chop, or silage harvest opportunities that augment your overall feed inventory, in both amount and timing. Mixing it up across several fields and substitution crops for staggered harvest timing can help bridge a gap in forage availability, particularly during the growing season. Just remember to consider how those substitutions and changes might impact animal productivity.

**Sorghum-sudan hybrids can be cut before corn silage too.** Sorghum-sudan is sometimes thought of as an emergency feed planted when it gets too late in June to count on reaching corn silage maturity. But there are advances in BMR and brachytic sorghum-sudan hybrids that boost energy content and offer an earlier harvest option, with the ability to regrow for a second later harvest if enough heat units remain in the season. These hybrids are generally more drought-tolerant than corn as well.

**The bottom line on crop substitutions – they can provide alternatives for earlier harvest and spread growing season risk** across more crops with varied growth timing. They also bring overall yield and forage quality implications that may be positive or negative. Your feed inventory planning process should include tools and resources that help you evaluate these trade-offs and risks. These can help you make well-informed decisions about cropping alternatives and feed substitutions.

**Benefits of good feed inventory assessment**, can include:

- fewer feed inventory surprises
- earlier recognition of feed surpluses or shortages
- more time and opportunity to sell or purchase feed
- fewer, more gradual ration changes
- more effective crop planning

All these potential benefits can help you manage the overall productivity of your operation. ☘

#### Feed Inventory Assessment & Planning Questions

- How many tons of each forage or feed commodity do you have?
- What is the dry matter content and feed quality of the forage and feed commodities you have on hand?
- What is the utilization period for each forage and feedstuff in your inventory? How long will each need to last?
- How many animals will you be feeding? What is the inclusion rate of each feedstuff in the expected rations, and total feed needs through the entire feeding period?
- How long will each feedstuff last at the planned feeding rate?
- Can you forecast any shortages or surpluses for individual feedstuffs?
- Are there substitutions you can make within your feed inventory, to take advantage of surplus forages or feedstuffs?
- How much additional purchased feed will be needed to finish out the feeding period you anticipate?
- What is the best purchase timing and availability for the specific feedstuffs needed to make up feed inventory shortages?
- Will surplus feedstuffs be carried over for the next feeding period or next year, versus generating cash flow during the current period?
- How many tons and which feedstuffs will you carryover into the next feeding period? (presumably the next year)
- How many tons of which feedstuffs will you need to grow and harvest during the next growing season, considering anticipated feed needs in the feeding period following your next growing season?
- Have you built 'safety stock' into your feed management plan to provide a cushion against feed spoilage, waste, delayed or reduced new crop harvest?

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