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Double Cropping: Harvesting Cover Crops for Forage

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Introduction

Cover crops have become a widely accepted practice throughout the Northeast because of their benefits to soil health, crop productivity, and water quality. As adoption has increased, so has interest in capturing additional value from those acres by harvesting cover crops as forage rather than terminating them solely as a soil-health practice. When managed correctly, this double-cropping approach can increase forage inventories, offset purchased feed costs, and improve the overall return from cover crop acres without requiring additional acres. When managed poorly, however, it can compromise both the soil health benefits of the cover crop and the timely planting of corn.

Successfully harvesting cover crops for forage requires balancing forage yield and quality with weather, field conditions, and the need to plant the following corn crop on time. This article reviews the key management considerations for harvesting cover crops as forage in the Northeast, including harvest timing, forage quality, economics, and the practical considerations producers should consider before adopting this system.

Understanding the Northeast Harvest Window

Double-cropping systems in the Northeast most commonly rely on winter cereal grains, particularly winter rye, although triticale and winter wheat are also used. These crops are typically interseeded into standing corn during late summer before silage harvest, though some farms still seed after corn silage harvest. These species overwinter, resume active growth in early spring, and are generally ready for harvest between late April and late May, depending on species, planting date, and spring weather.

Each species offers slightly different advantages. Winter rye matures earliest and generally provides the greatest opportunity to harvest before corn planting, but forage quality declines rapidly once past the boot stage. Triticale typically matures several days later than rye and often maintains forage quality slightly longer, while winter wheat develops more slowly and may be a better fit for farms planning to harvest later. Species selection should reflect the farm's corn planting schedule, forage needs, and desired balance between yield and quality.

Weather remains the greatest management challenge because it is also the factor producers have the least control over. Spring conditions in the Northeast can vary from extended periods of rain to late-season snowfall, making it difficult to harvest forage at the ideal stage of maturity.

Another important consideration is soil compaction. Unlike compaction created during fall fieldwork, which may be partially alleviated through winter freeze-thaw cycles, compaction caused by harvesting wet fields in the spring has little opportunity to recover before corn roots begin growing. Harvesting only when soil conditions allow, using flotation tires and lighter axle loads when possible, and accepting slightly lower forage quality rather than causing soil damage are often the better long-term management decisions.

Harvest Timing Drives Forage Quality

Once field conditions allow for harvest, timing becomes the primary driver of forage quality. Winter rye and other small cereal grains progress rapidly through their growth stages in spring, creating a narrow harvest window for producing high-quality forage.

At boot stage, winter rye can rival or exceed the digestibility of good grass haylage, with NDF in the 45 to 50 percent range and strong NDF digestibility. Crude protein typically ranges from 15 to 20%, although values vary depending on growing conditions. Just a week to ten days past boot stage, as the plant heads out, NDF climbs into the upper 50 to 60% range, while NDF digestibility declines, much like an overmature grass cutting. The optimal harvest window is short and often coincides with unfavorable spring weather. As a result, many farms harvest after boot stage, either to increase tonnage or because weather delays make earlier harvest impossible.

Harvest timing also impacts corn planting. Producers should weigh the value of increased forage tonnage against the potential impact of delayed corn planting. Although the exact tradeoff varies among years and by farm, harvesting several days earlier to allow timely corn planting may ultimately provide greater whole-farm value than maximizing cover crop yield.

Managing Moisture and Fermentation

Fermentation presents another challenge unique to this system. Forage harvested at or near boot stage is typically very wet, often exceeding 80% moisture, and cool spring weather rarely allows rapid wilting. High moisture, combined with relatively low concentrations of fermentable sugars, makes producing a stable fermentation more challenging.

Achieving the moisture generally recommended for bunker or bagged silage (60 to 65 %) may not be possible within the available harvest window. When forage is stored above this target moisture, the risk of clostridial fermentation, elevated butyric acid concentrations, seepage, and dry matter shrink increases.

Wrapped baleage is often a more forgiving storage option because it can be successfully stored at slightly higher moisture concentrations when properly wrapped

and treated with an effective inoculant. However, baleage also increases equipment, labor, and plastic costs.

Where the resulting forage fits within the feeding program depends largely on harvest timing and fermentation quality. Well-fermented forage harvested at boot stage can partially replace grass haylage in lactating cow diets. Later-harvested or poorly fermented forage is generally better suited for dry cows, replacement heifers, or beef cattle with lower nutrient requirements. Because forage quality varies considerably from year to year, laboratory analysis is essential for accurate ration formulation rather than harvest date alone.

Economics of Harvesting Cover Crops for Forage

The economics of double cropping begin with establishment costs. Winter rye seed typically costs between $25 and $35 per acre at common seeding rates, with drilling or broadcasting adding additional expense. Many farms throughout the Northeast are also eligible for NRCS or state cost-share programs that offset a substantial portion of these costs, regardless of whether the forage is ultimately harvested.

Harvest expenses include mowing or chopping, hauling, storage, and, when baleage is produced, wrapping and plastic costs. Depending on the equipment already available on the farm, these expenses can substantially influence the final cost of forage production.

Yield is the other major economic variable. Winter rye typically produces 2 to 3 tons of dry matter per acre, although yields may range from 1 to 4 tons depending on harvest timing, fertility, and growing conditions. Harvesting at boot stage generally produces lower yields but substantially higher forage quality, while delaying harvest increases tonnage at the expense of digestibility.

Harvest costs vary considerably among farms depending on whether harvesting is completed with owned equipment or by a custom operator, the storage system used, and the resulting forage yield.

Rather than relying on generalized cost estimates, producers should compare their own costs with the value of producing additional forage from acres that would otherwise remain idle. Economic returns also depend on timely harvest and corn planting, since prolonged weather delays can reduce forage quality while delaying planting of the following corn crop. Evaluating forage on a cost per ton of dry matter basis provides a meaningful comparison with other homegrown or purchased forages.

In many situations, harvesting cover crops compares favorably with purchased forage while providing additional feed from acres that would otherwise produce no spring forage. However, it rarely competes directly with corn silage on a cost per ton basis. Instead, its greatest value lies in increasing total forage production from existing acres while maintaining the soil health benefits of a cover cropping system.

Is Harvesting Cover Crops Right for Your Farm?

Before deciding to harvest cover crops for forage, producers should consider four practical questions.

1. **Do you have the equipment needed to harvest within a narrow weather window?** Harvest delays of only a few days can substantially reduce forage quality.
2. **Does the forage fit your feeding program?** Consider whether the forage can be incorporated into lactating cow diets or whether it is better suited for dry cows, heifers, or beef cattle if quality is lower than expected.
3. **Can you successfully manage storage?** Existing bunker silos, silage bags, or wrapped baleage should allow adequate moisture management while minimizing spoilage and shrink.
4. **Do you have adequate labor?** Harvesting cover crops adds another time-sensitive operation during an already busy spring season. Labor must be available not only for harvest but also for feedout and ration adjustments.

Five Keys to Success

- Harvest as close to boot stage as weather and field conditions allow.
- Avoid harvesting in wet conditions that increase the risk of compaction.
- Use appropriate storage methods to manage moisture and ensure good fermentation.
- Test forage quality before incorporating it into rations.
- Balance additional forage yield against timely corn planting.

Conclusion

Harvesting cover crops for forage can add meaningful tonnage to the feed inventory while increasing the overall value of a cover cropping program that might otherwise be justified primarily by soil health benefits. However, the system also presents significant management challenges, including a narrow harvest window between optimum forage quality and timely corn planting, fermentation risks associated with high spring moisture, and an economic return that depends more on utilizing otherwise idle acres than on replacing a farm's primary forage crop.

Farms considering this practice should evaluate equipment and labor availability during an already busy season, identify where the forage will fit within the feeding program, and ensure they can successfully manage the moisture and storage challenges before investing the time and expense required to harvest cover crops for forage.

When integrated into the right production system, harvesting cover crops can increase forage inventories while preserving many of the agronomic and environmental benefits that make cover crops valuable in the first place.

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