Corn Silage Cost of Production

A Technical Report for Evaluating Forage Economics, Feed Value,
and Water Quality Considerations in Vermont Dairy Systems

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Zachary Smith, Amber Blodgett, Jeff Sanders, Sally Burke & Whitney Hull – UVM Extension

Alternative Feed Studies Technical Report 2

University of Vermont
Extension

College of Agriculture and Life Sciences

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Main Question	What does it actually cost to produce corn silage, and how can that information guide crop, feed, nutrient, harvest, storage, and water quality decisions?
Case-study design	Two farms contributed. Farm 1 provides the financial cost case. Farm 2 provides production-system and management context.
Purpose	Establish the corn silage benchmark needed before a project evaluates double-cropping practices and compares alternative feed strategies. Establish a replicable framework to find key cost outputs.

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About This Project

This report is part of a series developed by the UVM Extension Agricultural Business Team (ABT) and Northwest Crops and Soils Team (NWCST) as an Alternative Feed Studies project for the Clean Water Improvement Program (CWIP) at the Vermont Agency of Agriculture and Food Markets (VAAFM). The work examines the cost of producing homegrown dairy forages in Vermont and connects those costs to the crop and nutrient decisions that also shape agricultural water quality. The series addresses three subjects in turn: the cost of production of haylage, the cost of production of corn silage, and how to use cost of production analyses to make management decisions.

Several farms contributed to the gathering of information for this project. Two farms, one a smaller Medium Farm Operation (MFO) and the other a larger MFO, participated in in-depth interviews that provided background on crop management decisions and on their feelings and concerns about the costs and risks of managing agricultural water quality while maintaining productive homegrown forages. Those conversations inform the management perspective throughout the report. They capture practices and farmer judgment rather than measured environmental outcomes, and the report treats them accordingly.

The project rests on a straightforward idea. The decisions that govern water quality on a dairy, nitrogen rate and timing, manure placement, cover and rotation, and investment in a given field, are the same decisions that govern the cost and quality of homegrown feed. Farmers do not experience them as environmental practices added onto the business. They experience them as feed, cost, weather, labor, and land decisions. Better cost and forage information helps move the economically sound choice and the water-protective choice toward the same answer.

To keep the analysis useful and reproducible, the report works from a hypothetical farm rather than from any participating farm's figures. Examples use the case of a hypothetical 200-milker dairy with youngstock, replacement heifers, dry cows, and some beef-on-dairy, running roughly 200 acres of corn and 400 acres of hay. All numbers used in the worked examples are rounded and illustrative. They are not drawn from any individual farm, and they are meant to be replaced by a reader's own figures. The report begins with information available on a farm's Schedule F tax form, shows how to build a first-pass cost estimate from it, and then shows how to sharpen that estimate with records from invoices, custom-hire slips, and field data as they become available. The closing sections turn the analysis toward decision making, and the appendices offer templates that farmers and service providers can use in the field.

Evidence Status Used in the Report

Due to the depth of the analysis that was performed after farmer interviews and meetings, information considered to be "evidence" was not all directly related to the information that was gathered on the farm. Information was gathered by the Agricultural Business Team (ABT) with the support of members from the Northwest Crops and Soils Team (NWCST) in 2025 and early 2026. We will highlight what information came from farm records, results calculated from farm records and interviews with farmers, assumptions that were made, and research-supported interpretations that we had to create from secondary data. The appendices explain our definitions and rationales.

Data Collection with the Farms

The findings that follow come primarily from on-farm interviews conducted with each case-study farm, supported by farm financial records, forage inventories, and nutrient-management documentation where available. The interviews and "follow-ups" were the central instruments. Each visit followed a long-form intake structure covering farm identity, land tenure, production goals, cropping and cutting practices, fertility and manure management, harvest and storage operations, feed quality, and water-quality context, but the conversations were allowed to move where the farmers took them. That approach traded some uniformity for depth, and it surfaced management reasoning that a fixed questionnaire would have missed.

The style of information gathered through interviews shapes how it should be read. Much of what farmers shared was practice and perception: what they do, what they have observed, and what they believe is working. Some figures, including certain acreages, shrink estimates, and allocation percentages, were worked out verbally during the visit and represent working estimates rather than measured or reconciled values. Throughout the findings, statements drawn directly from farm records are distinguished from interview observations and from working assumptions, and figures that require verification against records or laboratory results before quantitative use are marked. This distinction protects the integrity of the analysis and keeps producer perception, which is valuable in its own right, from being mistaken for measured fact.

Interviews capture management practices, not environmental outcomes. The conversations documented what each farm does with cover, nutrient timing, rotation, and storage, and they recorded the farmers' own sense of whether those practices help. They did not measure runoff, leaching, soil organic matter, or erosion. The water-quality findings should be read in that light: as a record of practice and plausible pathways, not as demonstrated water-quality results.

Evidence Label	Meaning
Farm Record	Expense, inventory, acreage, or herd data supplied by the farm.
Calculated result	Advisor calculation based on farm records and stated assumptions.
Interview observation	Management practice or interpretation reported by a case-study participant.
Working assumption	Temporary value used because direct records are unavailable.
Research-supported interpretation	External guidance used to interpret a farm observation without claiming a measured farm effect.

Table 1. Description of terms used to describe the evidence included in the study

1. Executive Summary

This report establishes a baseline cost of producing corn silage on a Vermont dairy, the second reference point the Alternative Feed Studies project needs before it can fairly evaluate double-cropping practices and compare alternative feed strategies. Without a corn silage baseline, a double crop or feed alternative can look favorable because it adds tons while the seed, fertility, field operations, harvest pressure, and storage it also adds go unmeasured. This report is the companion to the haylage cost of production report, and it follows the same method so the two crops can be compared on equal footing.

The analysis draws on two kinds of information, kept deliberately separate. Two Vermont dairies, one a smaller Medium Farm Operation and the other a larger MFO, contributed in-depth interviews that supply the management perspective throughout the report: how experienced farmers reason through hybrid choice, rotation, manure timing, harvest, storage, and the tradeoffs among cost, tonnage, consistency, and water quality. The cost figures, by contrast, are built on a single hypothetical farm rather than on any participating farm's records, so that the method can be shown openly and reused. That example farm is a 200-milker dairy with youngstock, replacement heifers, dry cows, and some beef-on-dairy, running roughly 200 acres of corn and 400 acres of hay. Every dollar figure in the report is rounded and illustrative.

The method starts where nearly every farm already keeps its numbers: the Schedule F tax form. Because a Schedule F reports whole-farm cash expenses without splitting them among enterprises, the report shows how to allocate each expense category to corn using transparent, documented percentages, and then how to sharpen those first-pass estimates with invoices, machinery hours, payroll detail, and field records as they become available. Applied to the example farm, this produces a combined allocated cash cost of about $235,000 for the corn enterprise, which works out to roughly $1,175 per corn acre and about $59 per as-fed ton at an illustrative yield of twenty as-fed tons per acre. The cost structure is the mirror image of haylage: seed, fertilizer, and chemicals together account for more than half of corn cost, because corn is planted, fertilized, and sprayed every year, while the repeated-harvest categories that dominate hay are comparatively small here.

The higher per-acre cost of corn relative to hay is expected and correct. Corn is an input-intensive crop, carrying annual seed, heavier fertilizer, crop protection, and tillage that an established hay stand does not. Because corn silage also yields roughly twice the tonnage per acre of haylage, that larger per-acre cost is spread over more feed, which is why cost per ton lands lower than the per-acre figure alone would suggest. This is exactly the kind of comparison the two baseline reports exist to make possible.

Two of the report's cost figures are presented as ranges rather than single numbers, and the reason is central to how the results should be read. Cost per ton of dry matter runs from about $155 to $184 depending on moisture, because the example farm has not measured whole-plant dry matter directly. Cost per ton of usable feed runs from about $62 to $69 depending on shrink, the share of the crop lost between the bunker and the bunk. These are not weaknesses in the analysis; they mark exactly where a farm's own measurements would convert an estimate into a decision-grade cost. The path from a Schedule F estimate to a confident cost per unit of feed runs through three farm measurements: yield, whole-plant dry matter, and shrink.

The report treats this result as a working cash cost, not a complete economic cost. It does not yet include capital recovery, unpaid operator and family labor, interest on operating capital, or the opportunity cost of owned land. Naming that boundary keeps the analysis honest and marks the next step toward a full economic picture.

Beyond the cost figures, the interviews placed corn in a particular light for water quality. Corn is the annual row crop in the rotation, a destination for manure, and, on ground near surface water, the acreage most directly tied to nutrient-loss pathways. Farmers described recognizable conservation practices, cover cropping behind corn, incorporation, and moving manure farther from barns, but experienced them as agronomic and economic decisions rather than measured environmental gains. The report records those practices and plausible pathways without claiming a measured water-quality result, and it points to the double-crop analysis in the third report for an in-depth treatment.

Measure	Result	Evidence Status
Corn acres	200 acres	Illustrative farm parameter
Combined allocated cash cost	~$235,000	Calculated; excludes full ownership and opportunity costs
Cost per corn acre	~$1,175	Calculated: allocated cost / 200 acres
Cost per as-fed ton	~$59	Calculated at 20 as-fed tons/acre (illustrative yield)
Cost per dry-matter ton	~$155 to $184	Range across 32 to 38% DM; not measured
Cost per usable ton	~$62 to $69	Range across 5 to 15% shrink; not measured
Largest cost drivers	Fertilizer, seed, chemicals (~54%)	Calculated from allocation

Table 2. Cost of production summary, illustrative hypothetical farm

All figures are rounded and illustrative and are not drawn from any individual farm. The full report series is available at https://www.uvm.edu/extension/agricultural-business/water-quality-business-analysis.

2. Why Corn Silage Cost of Production Matters

Corn silage is a central homegrown feed in the dairy systems observed for the project. It combines forage fiber with grain-derived starch and can produce a large amount of feed per acre. Its business value depends on yield, whole-plant dry matter, starch, fiber digestibility, kernel processing, fermentation, storage recovery, ration inclusion, and the cost required to deliver usable feed.

Feeding livestock quality, home-grown feed can work to improve heard health, soil quality, and overall farm viability. Its popularity is due to the high yield of a very digestible, high-energy crop, and the ease of adapting it to mechanized harvesting and feeding. Corn for silage fits ideally into no-till and double-cropping programs. Corn silage requires less labor per ton to produce than many other forage crops. It can extend the harvest period for the entire corn acreage and provide an opportunity for salvage of stressed or damaged cornfields. Also, corn silage can efficiently recycle plant nutrients, especially large amounts of nitrogen and potassium.

2.1 A benchmark before evaluating double cropping

The project conducted by the ABT evaluates double-cropping practices and compare feed-management alternatives. A corn silage baseline is needed first. Without a benchmark, a double crop may appear favorable because it produces additional tons while added seed, fertility, field operations, harvest pressure, rotation effects, and storage needs remain unmeasured. The benchmark should include cost per acre, cost per represented as-fed ton, cost per usable dry-matter ton, and the feed value delivered to the herd.

2.2 Cost boundaries

Boundary	Definition	Primary use
Field cost per acre	Seed, fertility, land, manure application, planting, crop protection, and field operations.	Field and rotation decisions
Cost delivered to storage	Field and harvest cost divided by dry matter placed into storage.	Crop and harvest performance
Cost removed for feeding	Field, harvest, and storage cost divided by dry matter removed from storage.	Storage and feedout performance
Cost consumed	Total feed-system cost divided by dry matter consumed after refusals.	Whole-farm feeding performance

The analysis in this report is a cash-cost allocation extending through harvested and inventoried corn silage. It does not yet include complete capital recovery, unpaid operator labor, interest on operating capital, or an opportunity cost for owned land. USDA Economic Research Service guidance treats seed, fertilizer, chemicals, custom work, fuel, and repairs as operating costs and includes labor, capital recovery, land, taxes, insurance, and general overhead in broader economic cost measures (USDA ERS, 2026).

2.3 Ration stability and feed value

An as-fed ton does not provide enough information for comparing corn silage across fields, years, or alternative feeds. Whole-plant dry matter, starch concentration, neutral detergent fiber, fiber digestibility, kernel processing, ash, and fermentation determine how the feed contributes to the ration. Cornell guidance recommends using whole-plant dry matter rather than milk line alone to time harvest, with target dry matter adjusted for storage type (Cornell Cooperative Extension, 2022).

Farm 1 participants reported that the current corn silage was feeding well and that corn meal inclusion had declined from roughly six pounds toward three pounds per cow. The report treats that statement as a producer observation, not a measured causal response. Purchased-feed expense is not included in the current analysis.

3. Farm Systems Observed

3.1 Case-study design

The report uses a two-farm case-study design with unequal financial detail. Farm 1 is the primary economic case. Farm 2 is a complementary systems case. The distinction avoids presenting Farm 2 as an independent economic replication while retaining its value for interpreting corn silage management and whole-farm tradeoffs.

The two interview farms are described here for management context only. The cost figures throughout this report are built on a separate hypothetical example farm, introduced in Section 5, and are not drawn from either interview farm.

Farm	Primary role	Contribution
Farm 1	Financial and inventory case	2025 expenses, revised enterprise allocations, corn silage inventories, herd count, acreage, and interviews
Farm 2	Production-system context	Interviews covering acreage, rotation, manure management, cover crops, machinery, storage, and alternative-feed interests

3.2 Farm characteristics

Characteristic	Farm 1	Farm 2
Primary enterprise	Dairy	Dairy
Milking herd	Mid-size milking herd	Larger milking herd
Total herd reported	Not itemized here	Not fully reconciled
Corn acreage	About 220	Larger corn base
Land tenure	Owned	Mix of owned and rented
Rotation	Corn-hay rotation discussed; field-level history not yet supplied	Multi-year corn-hay rotation on flexible land; limited continuous corn
Harvest system	Custom-related costs allocated to corn; farm trucking and packing context	Farm performs chopping and owns major harvest equipment; hired drivers support hauling
Storage	Multiple bunker units	Large pad and wall systems
Cover crops	Farm reported cover cropping much of the corn ground	Rye and other cover-crop crop options used or considered

3.3 Cross-case management observations

Theme	Cross-case observation
Tonnage and consistency	Both farms value corn silage as a dependable, high-volume feed.
Weather	Weather affects planting, crop development, harvest maturity, field access, moisture, and yield.
Rotation	Corn acreage is linked with hay stand renewal and the availability of perennial forage.
Manure management	Corn ground provides an important spring manure destination and nutrient-use opportunity.
Cover crops	Both farms use or discuss cover crops to maintain soil cover after silage harvest.
Harvest capacity	Farm 1 depends partly on custom services; Farm 2 depends heavily on owned equipment and operator availability.
Storage	Packing, sealing, wall interfaces, wildlife damage, and inventory measurement affect usable feed.
Decision need	Both farms are interested in homegrown feed strategies that balance cost, tonnage, consistency, and herd response.

4. Production System Description

4.1 Hybrid selection and intended use

Farm 1's exact hybrid list, relative maturity, seed treatment, and planting population were not available in the interview materials. Hybrid records should be added because yield, starch, fiber, disease response, maturity, and harvest timing can differ among entries. UVM corn silage trials evaluate hybrids using yield and quality measures rather than yield alone (UVM Extension Northwest Crops and Soils Program, 2025).

Farm 2 described corn silage as the dominant forage in the ration and values both tonnage and consistency. The farm also expressed interest in reducing reliance on purchased feed and considering crops that could provide energy, protein, and adequate yield.

4.2 Rotation and planting system

On the example farm, corn occupies about 200 owned acres. Field-level planting dates, tillage system, rotation history, and stand counts were not supplied for the current draft. The owned land base gives management a longer payback period for drainage, fertility, cover crops, and rotation investments than the short-term hay rentals discussed in Report 1 – "Haylage Cost of Production".

Farm 2 crops a large corn base and described a multi-year corn-hay rotation on the land where crop choice is flexible. Management reported little continuous corn at one location and discussed no-tilling corn into a harvested forage stand before establishing a cover crop. Rotation plans shifted when wet spring conditions prevented a planned hay seeding and the acreage remained in corn.

4.3 Fertility and manure management

The available interviews indicate that spring manure is directed primarily to corn ground, while grass receives manure after cutting. Farm 1's fertilizer cost is allocated by crop acreage in the current analysis, but field-level manure, fertilizer, lime, and application records are needed to estimate corn nutrient cost accurately.

Farm 2 applies manure to corn ground in spring and incorporates it through minimum tillage or chisel operations when feasible. The farm also used dragline application and recently added a larger manure-storage structure, which may provide more flexibility for matching application timing with field condition and crop demand.

UVM nutrient recommendations and NRCS nutrient-management guidance support using soil and manure tests, realistic yield goals, crop need, and application timing when setting nutrient rates (Jokela et al., 2018; USDA NRCS, 2026a). Main drivers of corn silage yield variability include hybrid selection, plant population, planting date, soil type and nutrient management, drainage, weed and insect management, weather patterns and harvest conditions. Regular soil testing is recommended to inform nutrient and soil management.

4.4 Cutting schedule

Farm 1's chemical expense was not separately reported in the expense file. The seven listed variable categories already equal the reported variable cost total, so no chemical amount was added. A final corn budget should identify herbicide, insecticide, fungicide, seed treatment, and application expense directly.

Farm 1 reported cover cropping much of its corn ground under conservation program expectations and field requirements. Farm 2 reported planting winter rye and harvesting part of the cover crop as forage when spring field conditions allowed. The economic treatment of a harvested cover crop should assign seed, establishment, fertility, harvest, and storage cost while also recognizing any feed value and rotation effect.

4.5 Harvest methods

Farm 1's current allocation assigns 25% of custom hire and professional fees to corn. The farm's interview materials indicate that it provides trucking, packing, covering, and feedout capacity, but direct corn harvest invoices and equipment-hour records are still needed.

Farm 2 owns the primary harvest line and reported that a rough estimate of chopper use would be heavily weighted toward corn. The chopper can provide cutter-head and field hours, offering a direct basis for allocating fuel, repairs, depreciation, and shared hauling equipment.

Corn silage harvest timing is one of the most critical factors affecting forage quality. To ensure maximum yields of dry matter, nutrients per acre, palatability, intake, and minimize storage losses corn should be harvested with a dry matter range of 32–35% for bunks and piles and with a range of 35–38% for uprights and bags. A dry matter percentage above 40% is too dry and is at risk for yeast and mold growth as well as low starch digestibility. A dry matter percentage below 30% is too wet which risks nutrient loss.

Once the corn silage is harvested, preservatives and inoculants are often added ultimately to increase "shelf life". Once the silage has undergone adequate fermentation, usually in 3 weeks, a sample should be obtained for forage analysis to develop a feeding program.

4.6 Storage and preservation

Farm 1 stores corn silage in multiple bunker units and uses a working inventory density assumption for planning. The October records showed two future-use units plus one larger unit, while the January records showed the large unit in use and a second unit reserved for later feedout.

Farm 2 uses an integrated reinforced cover on corn silage and reported less damage from birds after the change. Larger corn piles allow use of packing rollers more readily than the smaller haylage piles. Fast filling, adequate packing, immediate sealing, and protected covers limit oxygen exposure and support dry-matter recovery (Borreani et al., 2018).

To minimize the amount of time the forage is exposed to retain quality, corn silage should be covered or wrapped as soon as possible. Covers can be weighed down with tires and stone bags. If the corn silage is getting baled and wrapped, use 6 layers of wrapping that are overlapped by 50%. Inoculants and acid are both good to use as a preservative but only if the corn silage is packed well. Most preservatives and inoculants are aimed at promoting lactic acid production, reducing dry matter losses during storage, reducing heating, and increasing bunk life.

5. Cost of Production Findings

The following content will use hypothetical round numbers that were informed by several farm and advisor interviews as well as recent academic publications. To keep this analysis useful and reproducible, **the worked examples do not use any participating farm's figures.** Instead they follow a single hypothetical operation, built to be typical of a Vermont dairy of its size and carried consistently through every report in this series.

The example farm is a 200-milker dairy with youngstock, replacement heifers, dry cows, and some beef-on-dairy. It crops roughly 600 acres of owned and rented ground, about 400 acres of hay and 200 acres of corn, a two-to-one ratio common on dairies that rely on perennial forage as the base of the ration and corn silage as the high-energy anchor. Hay is cut four times across the season in a typical year, with the final cutting taken selectively on fields that carry enough regrowth to justify the pass. Corn is grown in rotation with hay, with new hay seedings established as ground rotates out of corn.

Every number used in the examples that follow is rounded and illustrative. The figures are not drawn from any individual farm, and they are meant to be replaced by a reader's own records. The purpose is to show the method clearly enough that a farm or advisor can repeat it with real numbers. This is one illustrative farm, and every farm has its own parameters.

5.1 Accounting framework and scope

Cost layer	Current treatment
Variable cash cost	Custom work, fertilizer, fuel, hired labor, repairs, seed, and supplies.
Fixed cash cost	Allocated property tax and rent paid for land, buildings, equipment, and livestock.
Not included	Capital recovery, interest on operating capital, unpaid operator labor, and owned-land opportunity cost.
Cash-flow item kept outside CoP	Loan principal and capital purchases

The report presents a revised working cash cost, not a complete economic cost. USDA ERS includes unpaid labor, capital recovery, land opportunity cost, taxes, insurance, and general overhead in broader economic cost measures. Adding ownership costs later will support machinery replacement, land-use, and long-term crop-system decisions.

5.2 Cost allocation methodology: Starting with a Schedule F

Why the Schedule F is the starting point

Nearly every farm already files a Schedule F, the federal tax form that reports farm income and expenses. That makes it the most accessible starting point for a cost of production estimate, because it requires no new recordkeeping. A farm can begin building a per-crop cost picture today, from a document it already has in hand, keeping in mind that ***this is a very rough first estimate and that refinement with direct records is necessary to reach true cost-of-production results.***

The Schedule F reports whole-farm cash expenses sorted into standard categories: custom hire, fertilizer and lime, fuel, hired labor, repairs, seed, supplies, taxes, rent, and so on. That is its strength and also its limit. It tells the farm what it spent in total, in cash, during the year. It does not tell the farm how much of each expense belonged to corn, to hay, or to the milking herd. It carries no accrual adjustment for inventory change, and its depreciation line reflects tax rules rather than the true cost of using machinery over its working life. A cost of production estimate built from a Schedule F is therefore a cash-cost estimate, and a first approximation rather than a finished economic analysis.

The task of this section is to get from the whole-farm Schedule F to a defensible first-pass cost for a single crop. That step requires allocation.

Allocation is a documented judgment, not a fact

Because the Schedule F reports costs for the whole farm, splitting them among enterprises requires assigning a share of each category to each activity. There is no tax record that states what share of the seed bill went to corn. The farm and advisor decide that share, using the best reasoning available, and then document it. Done openly, this is a legitimate and standard practice. The integrity of the estimate rests not on the allocation being exact, but on it being reasonable, transparent, and consistent, so that anyone reviewing it can see the reasoning and adjust it.

To keep those judgments disciplined, this analysis sorts every expense category into one of three allocation approaches.

- **Allocation by crop acreage** is used where an expense scales mainly with land, such as property tax and land rent. The crop share divides two-to-one between hay and corn, following the 400 and 200 acre base.
- **Allocation by crop-input intensity** is used where an expense scales with how heavily a crop is planted, fertilized, and sprayed. Seed, fertilizer, and chemicals fall here, and they weight toward corn.
- **Allocation by harvest activity** is used where an expense scales with how hard the machinery and crew work. Fuel, repairs, hired labor, and supplies fall here, and they weight toward hay because of its repeated cuttings.
- **Allocation by the nature of the expense** of the expense is used where a cost belongs to a crop for a structural reason, such as seed, fertilizer, chemicals, and custom hire.

The allocation table

The following working percentages apply the three approaches to the example farm. This is one illustrative farm, and every farm sets its own parameters; the value of the table is the reasoning it makes visible, not the specific numbers. Costs that belong partly to the milking herd and everyday business carry a "dairy-and-other-operations" share before the remainder is divided between crops.

Schedule F expense category	Haylage	Corn silage	Dairy & other	Basis
Custom hire and professional fees	55%	45%	0%	Nature: corn chopping, planting, tillage plus hay harvest services
Seed	15%	85%	0%	Nature: corn seeded annually; hay seed for establishment only
Fertilizer and lime	33.3%	66.7%	0%	Crop-input intensity: corn fertilized annually and heavily
Chemicals (spraying, pesticides)	15%	85%	0%	Nature: corn is the sprayed crop; established hay little to none
Fuel and oil	57.1%	17.8%	25%	75% cropping; crop share by harvest activity
Repairs and maintenance	57.1%	17.8%	25%	75% cropping; crop share by harvest activity
Hired labor	30.5%	9.5%	60%	60% dairy; remaining 40% by harvest activity
Supplies	57.1%	17.8%	25%	75% cropping; crop share by harvest activity
Property tax, farm share	33.3%	16.7%	50%	50% dairy; crop share by acreage
Land and building rent	40%	20%	40%	40% dairy; crop share by acreage

For corn, crop inputs dominate

The corn story is the opposite of the hay story. Where hay is defined by repeated harvest work, corn is defined by annual crop inputs. Corn is seeded every year, fertilized annually and more heavily per acre, and sprayed, while an established hay stand receives fertilizer or lime only about once a year and little to no chemical. As a result, seed, fertilizer, and chemicals carry heavily to corn, while the machinery-related categories, which divide by harvest activity, carry mostly to hay because hay is cut four times a season against corn's single pass. On this farm, established hay's per-acre input intensity is taken at roughly one quarter of corn's.

Manure is embedded

Manure application does not appear as its own line. On most farms its cost is not separately recorded on the Schedule F; it lives inside fuel, repairs, labor, and custom hire. On the example farm, manure is spread on corn once after fall silage harvest and on hay after each cutting, so its cost follows the harvest-activity pattern of the categories that carry it. Breaking manure out as a separate line would risk double-counting cost already captured in those categories, so it is left embedded and noted here.

Handling of specific categories

Chemicals are shown because corn is the sprayed crop, even though the source cases reported no separate chemical line on the Schedule F; a farm that reports chemical expense assigns it to the crop that received the application. Equipment and livestock rent is not carried as a cost line for this farm. Hired labor is placed 60 percent to the dairy because milking, feeding, and daily animal care make up the core of paid hours on a 200-milker operation. Custom hire is split 55 percent hay to 45 percent corn, because corn draws real custom work for chopping, planting, and tillage. A farm whose situation differs should adjust these shares and record the reason.

5.3 Sharpening the Estimate with Records

The percentages in Section 5.2 are provisional management estimates, not audited enterprise costs. They are meant to produce a reasonable first-pass number quickly, from a document every farm already has. They are also meant to be replaced. As better records become available, each broad allocation gives way to a more accurate figure, and the estimate moves from a defensible approximation toward a measured cost.

The Schedule F gets a farm started; its own records make the estimate precise. A farm does not need to wait for perfect data to begin. It can produce a first number now and sharpen it over time, replacing judgment with measurement one category at a time.

The table below shows the path for each category: what the first pass looks like from the Schedule F, and what sharpens it.

Cost category	First pass (from Schedule F)	Sharpen with
Seed	Split 85% to corn by the annual-planting rule	Seed invoices tied to the fields and hybrids actually planted, with population and treatment
Fertilizer, lime, chemicals	Split by crop-input intensity	Field-level input records and application maps showing what was applied where, at what rate and cost
Custom hire	A single whole-farm total split 55/45 by judgment	Actual per-service invoices for chopping, planting, and tillage, assigned to the crop that received them
Fuel and oil	Whole-farm fuel, 75% to cropping, then split by harvest activity	Machinery hours logged by the equipment itself (chopper cutter-head and field hours), converted to fuel by machine and crop
Repairs	Same activity split as fuel	Repair invoices coded to the machine, then assigned by that machine's crop hours
Hired labor	60% to dairy, remainder by activity	Payroll detail sorted by role and task, with cropping hours timed to planting, harvest, and manure windows
Land and taxes	Dairy share removed, crop share by acreage	Parcel-level records: which fields grow which crop, owned versus rented, with actual rent and tax by parcel

Where sharpening matters most

For corn, the highest-value records differ from hay, because corn's cost is concentrated in inputs rather than harvest passes. Three are worth chasing first.

- **Seed and hybrid records.** Seed is the single largest input on corn, and hybrid choice drives yield, starch, and harvest timing. Invoices tied to fields and hybrids turn the largest cost line into a measured, field-level figure.
- **Field-level nutrient records.** Fertilizer and chemicals are corn's second-largest cost group, and the intensity split that governs them is an estimate. A nutrient management plan already holds much of what is needed to replace that estimate with applied rates and costs by field.
- **Whole-plant dry matter and load weights.** Corn silage cost per ton depends on yield and moisture, neither measured on the example farm. Weighing loads and sampling whole-plant dry matter at harvest converts the yield and dry-matter assumptions into measured values.

What the Schedule F still cannot give you

Even sharpened, a cost built this way remains a cash-cost estimate. It does not include the cost of using owned machinery over its life, unpaid operator and family labor, interest on money tied up in the operation, or the opportunity cost of owned land. Those belong to a complete economic cost, and they are addressed separately. Naming them here keeps the boundary of this analysis honest: what follows is a defensible, improvable cash cost of growing the crop, not the full economic cost of the enterprise.

5.4 Allocating Whole-Farm Expenses to Hay

Applying the percentages from Section 5.2 to the example farm's whole-farm expenses produces a first-pass cost of producing corn silage. The table below shows round, illustrative whole-farm figures for the 200-milker farm, the corn allocation percentage for each category, the dollars that fall to corn, and each line's share of the total corn cost. Every figure is rounded and illustrative, and none is drawn from any individual farm.

Schedule F expense category	Whole-farm expense	Corn allocation %	Corn allocation ($)	Share of corn cost
Custom hire and professional fees	$75,000	45.0%	$34,000	14.5%
Seed	$60,000	85.0%	$51,000	21.7%
Fertilizer and lime	$90,000	66.7%	$60,000	25.5%
Chemicals (spray-ing, pesticides)	$20,000	85.0%	$17,000	7.2%
Fuel and oil	$60,000	17.8%	$11,000	4.7%
Repairs and maintenance	$125,000	17.8%	$22,000	9.4%
Hired labor	$200,000	9.5%	$19,000	8.1%
Supplies	$40,000	17.8%	$7,000	3.0%
Property tax, farm share	$20,000	16.7%	$3,000	1.3%
Land and building rent	$55,000	20.0%	$11,000	4.6%
Total corn allocation			**$235,000**	**100.0%**

Two features stand out. First, fertilizer, seed, and chemicals together account for about 54 percent of allocated corn cost, more than half. That is the signature of an annually established row crop: the cost is front-loaded into getting the crop planted and fed, not into harvesting it. Second, the harvest-activity categories that dominate hay, repairs, fuel, and supplies, are comparatively small here. This is the mirror image of the haylage report and confirms that the two crops carry genuinely different cost structures.

5.5 Unit-cost results

A total allocated cost becomes useful for decision-making when it is expressed per unit: per acre, per ton harvested, and per ton of feed actually delivered to the animal. Each unit answers a different question, and each carries its own assumptions. The figures below convert the $235,000 corn allocation into unit costs for the example farm.

Cost per acre

Across 200 corn acres, the allocated cash cost works out to about **$1,175 per corn acre.** This is notably higher than the roughly $752 per acre found for hay, and the difference is real: corn carries annual seed, heavier fertilizer, crop protection, and tillage that an established hay stand does not. Corn is simply the more expensive crop to grow per acre.

Cost per ton harvested

At an illustrative yield of 20 as-fed tons per acre, the farm harvests about 4,000 as-fed tons of corn silage, and the allocated cost comes to roughly **$59 per as-fed ton.** Although corn costs far more per acre than hay, it also yields roughly twice the tonnage, so that larger per-acre cost is spread over more feed. This is why corn silage is often an economical source of homegrown energy despite its high per-acre cost.

Cost per ton of dry matter

As-fed tonnage is a poor basis for comparing feeds, because corn silage moisture varies with maturity and harvest timing. Cost per ton of dry matter is the fairer comparison, but it requires knowing whole-plant dry matter, which the example farm has not measured directly. Rather than assume a single value, the cost is shown across the range corn silage normally occupies.

Dry-matter content	Dry-matter tons	Cost per DM ton
32% DM	1,280	$184
35% DM	1,400	$168
38% DM	1,520	$155

The spread runs from about $155 to $184 per dry-matter ton, driven entirely by a moisture assumption the farm has not measured. **Until whole-plant dry matter is measured directly, cost per dry-matter ton is a range, not a number.** Whole-plant dry-matter sampling at harvest, which the farm should already be doing to time the chop correctly, turns this range into a single defensible figure.

Cost per ton of usable feed

Not everything harvested reaches the animal. Storage and feedout losses, together called shrink, remove a share of the crop between the bunker and the bunk. The cost of growing the whole crop is spread over only the usable portion that survives, so every unit of shrink raises the true cost of the feed actually fed. Corn silage is generally more forgiving in storage than haylage, but the effect is still real.

Storage and feedout loss	Usable as-fed tons	Cost per usable ton
5% loss	3,800	$62
10% loss	3,600	$65
15% loss	3,400	$69

Moving from 5 percent loss to 15 percent loss raises the cost of usable feed by about $7 per ton on feed that cost nothing more to grow. Good packing, rapid sealing, and face management protect that value directly.

Reading the unit costs together

The four unit costs form a ladder from most certain to least certain. Cost per acre rests on figures the farm knows. Cost per as-fed ton adds a yield assumption. Cost per dry-matter ton adds a moisture assumption. Cost per usable ton adds a shrink assumption. Each step toward the animal is more useful for ration and feed-purchase decisions, and each is also less certain until the farm measures the underlying quantity. The path from a Schedule F estimate to a decision-grade cost runs directly through three measurements: yield, whole-plant dry matter, and shrink.

5.6 Inventory Reconciliation and Observed Disappearance

A farm can convert its own storage records into a measure of daily disappearance by comparing inventory between two dates. Two snapshots of remaining tons, plus the tons already removed, give the total represented and the tons disappearing per day over the interval. This is a useful planning check on how long the corn silage inventory will last, but it is not the same as measured animal intake: disappearance also includes storage loss, discarded feed, and measurement error.

For the illustrative farm, no measured inventory series is reported, because the cost figures are built on a hypothetical operation rather than on a participating farm's storage records. A farm applying this method uses its own two-date inventory to compute disappearance, then divides by animal numbers only as a rough per-animal planning figure, never as a ration-formulation input. Corn silage is fed across milking cows, dry cows, heifers, and other groups, so a single per-animal figure blends very different intakes.

6. Feed Quality and Herd Performance

6.1 Herd context

Animal Group	Head
Milking cows	200
Dry cows	30
Bred heifers	60
Calves	110
Total herd	400

The herd inventory provides a denominator for feed-system context but does not replace ration records. For a herd of this size, a farm can convert its own measured inventory disappearance into as-fed pounds per animal as a rough planning check. Because corn silage is distributed across animal groups and the inventory method contains uncertainty, the ***figures should be used for inventory planning rather than ration formulation.***

6.2 Corn silage quality indicators

Indicator	Management use
Whole-plant dry matter	Determines moisture, packability, fermentation risk, and DM yield
Starch	Primary energy contribution from grain
NDF and NDF digestibility	Fiber contribution, intake potential, and rumen function
Kernel processing score	Indicates the degree of grain processing
Fermentation profile	pH, organic acids, ammonia, and stability
Ash	May indicate soil contamination or field-harvest loss
Mycotoxin screening	Needed when crop stress, disease, flooding, or storage concern exists

The contents of this section are for quick reference. For more information relevant to feed decision making, please review the recent articles written by Whitney Hull, UVM Extension Dairy Herd Management Specialist here: https://www.uvm.edu/extension/agricultural-business/water-quality-business-analysis

6.3 Farmer perceptions of quality and consistency

Farm 1 participants reported that the current corn silage was feeding well and that corn meal inclusion had been reduced. The observation suggests that corn silage quality may be affecting ration decisions, but forage analyses, ration records, and herd-performance data are needed before assigning an economic value.

Farm 2 values corn silage for tonnage and consistency and described it as a dominant forage in the diet. Management is also asking whether the farm can produce more energy and protein from homegrown crops while maintaining a profitable level of milk production.

Decision in Practice: Homegrown Feed Versus Purchased Feed

THE DECISION. How far to push homegrown forage production as a substitute for purchased grain and protein, and what level of milk production makes the most economic sense.

WHAT FARMERS WEIGH. Farmers described corn silage as a dependable, high-volume feed and reported forage inclusion approaching the mid-60 percent range of the ration. One farm reported reducing corn meal in the ration and observed that the silage was feeding well. Farmers also raised the broader question of whether a lower production level with reduced purchased inputs could outperform a higher production level carrying a larger grain bill. As one participant put it, the measure that matters is what remains after the feed bill is paid, not the milk produced. Interest was expressed in growing more homegrown energy and protein, including small grains and soybeans.

WHAT THE COST ANALYSIS CONTRIBUTES. A defensible cost per usable dry-matter ton of homegrown forage is the first term in the comparison. Until a farm knows what its own corn silage costs to deliver to the bunk, purchased feed cannot be evaluated against it on equal footing. The corn silage baseline established here supplies that first term; the ration and milk records identified in Section 6.4 supply the second.

6.4 Herd performance indicators for improved accuracy

Indicator group	Minimum record
Milk	Daily milk per cow and total shipped milk during each feedout period
Components	Fat and protein percentages and pounds
Intake	TMR offered, refusals, and estimated dry-matter intake by group
Feed efficiency	Energy-corrected milk or component-corrected milk per pound of DMI
Ration change	Corn silage inclusion, corn meal, protein supplements, and other ingredient changes
Feed quality	DM, starch, NDFD, kernel processing score, ash, and fermentation
Health and consistency	Manure scores, sorting, rumen-health observations, and fresh-cow performance
Economics	Income over feed cost (IOFC) or marginal milk value linked with ration periods

This topic is currently out of the scope of the current project, but future research should consider these data points. No measured milk-production or feed-efficiency series has yet been matched with the corn inventory interval. The present report therefore describes herd context and producer observations without attributing a production response to a specific field, hybrid, or storage unit.

7. Soil Health and Water Quality

7.1 Annual crop exposure and soil cover

Corn silage removes most aboveground biomass and is often harvested before winter, creating a period when soil cover can be limited. Cover crops, retained residue, reduced tillage, and rotation with perennial forage can maintain living roots and protect the soil after harvest. NRCS identifies soil cover, living roots, reduced disturbance, and crop diversity as core soil-health principles (USDA NRCS, 2026b).

The case data do not measure runoff, phosphorus loss, nitrate loss, soil organic matter change, or infiltration. The report can identify plausible pathways and management opportunities, but it cannot claim a measured water-quality effect from a particular corn practice.

7.2 Nutrient timing and use efficiency

Corn ground provides a major destination for manure and fertilizer. Nutrient value depends on manure analysis, soil tests, prior crop, realistic yield expectation, rate, placement, incorporation, weather, and crop uptake. Field-level records are needed to identify acres where nutrient cost is high relative to usable dry-matter yield.

Farm 2's expanded manure storage may create greater flexibility for waiting until fields are suitable and crop demand is closer. Farm 1's final corn budget should separate manure handling required by the dairy from the crop nutrient value received by the corn enterprise.

7.3 Cover crops and double-cropping relevance

Both farms use or consider cover crops following corn silage. A cover crop can provide soil cover and living roots after harvest. When harvested as forage, it becomes a second feed enterprise with added yield, cost, labor, nutrient demand, planting risk, harvest risk, and possible effects on the following corn crop.

Report 3 will compare the double-crop system with the corn-only baseline on a combined-acre basis. The comparison should include total usable DM, feed value, all field and harvest costs, storage, labor timing, corn yield response, and water-quality planning considerations.

7.4 Water-quality planning relevance

The table connects corn silage management decisions with potential water-quality pathways and identifies the records needed to evaluate each pathway at the farm level. The planning areas focus on soil cover, nutrient use, rotation, storage runoff, and low-performing fields. The framework is intended to guide record collection and management review without assuming that a benefit or loss has already been measured.

Planning area	Potential pathway	Record needed
Cover crop	Maintain soil cover and living roots after silage harvest	Species, planting date, method, acres, termination, and spring biomass
Nutrient timing	Match manure and fertilizer with crop demand	Application date, source, rate, incorporation, rainfall, and field condition
Tillage and erosion	Limit exposed soil and protect high-risk fields	Tillage system, slope, residue, erosion rating, and field observations
Rotation	Balance corn production with perennial forage and soil cover	Years in corn, years in forage, yield, and establishment success
Storage runoff	Prevent silage leachate and contaminated runoff	Storage design, runoff capture, DM at harvest, and inspection records
Field performance	Identify low-yield fields receiving high inputs	DM yield, soil test, nutrient rate, seed, chemical cost, and cost per usable ton

8. Management Risks and Bottlenecks

The table below summarizes the main production, operational, storage, and accounting risks that can affect corn silage cost and usable feed value. Weather and timing influence planting, crop maturity, harvest dry matter, and cover-crop establishment, while machinery and labor determine whether the farm can harvest and pack the crop at the desired rate. Inventory estimation and shared expense accounts add analytical uncertainty to Farm 1's reported cost per ton.

Risk or bottleneck	Farm	Business effect
Planting window and field condition	Both	Late planting can reduce maturity options, yield potential, and cover-crop time.
Weather and crop development	Both	Affects yield, maturity, disease, harvest date, and whole-plant DM.
Hybrid maturity mismatch	Both	Crop may not reach the desired DM and starch profile before frost or wet weather.
Custom operator availability	Farm 1	A delay can alter crop maturity, moisture, and storage conditions.
Single-operator and equipment dependence	Farm 2	Chopping capacity relies heavily on one operator and owned machinery.
Low usable yield	Both	Seed, fertility, and field costs are spread across fewer DM tons.
Kernel processing variation	Both	Poor processing can reduce the usable value of grain in the silage.
Packing capacity	Both	Harvest flow may exceed the ability to spread and compact forage.
Cover-crop establishment	Both	Late harvest and wet fields can reduce establishment success.
Inventory estimation	Farm 1	Fixed density and missing DM can distort tons and cost per ton.
Expense allocation	Farm 1	Whole-farm accounts can overstate or understate enterprise cost.

9. Recommendations

9.1 Immediate priorities

Building upon the report's cost, inventory, and management observations, the immediate recommendations focus on strengthening the production denominator and replacing whole-farm allocations with direct corn records. Accurate load weights, dry matter, field acreage, and storage-unit records will improve cost per acre, cost per DM ton, shrink, and feedout projections. Direct invoices and machine-hour records will also clarify the cost of planting, crop protection, harvest, hauling, and packing.

Priority	Action	Reason
1	Verify the production denominator	Confirm harvested acres, crop year, carryover, all storage units, Used Tons logic, and whether tonnage is based on scale weights or volume.
2	Measure whole-plant DM by field and storage unit	Convert as-fed tons to DM tons and evaluate harvest timing and storage risk.
3	Weigh loads and record field yield	Establish usable yield by field, hybrid, and harvest date.
4	Measure or verify bunker density	Use scale weights and safe core sampling where practical; treat any default density figure as an assumption until verified.
5	Reconcile direct corn expenses	Assign seed, fertilizer, chemicals, custom work, fuel, and repairs by field or operation.
6	Separate machinery and payroll roles	Use equipment hours and labor categories for planting, crop care, harvest, hauling, packing, dairy, and management.

9.2 Production and harvest priorities

- Track each field with hybrid, relative maturity, seed cost, planting date, population, tillage, manure, fertilizer, chemicals, harvest date, as-fed tons, and dry matter.
- Use whole-plant DM sampling to schedule harvest and record the actual DM placed in each storage unit.
- Compare low-yield and high-yield fields through cost per usable DM ton rather than cost per acre alone.
- Use field and equipment records to test whether the current custom and owned-machinery combination is economically appropriate.

9.3 Storage and feed-management priorities

- Record forage placed into each bunker, feed removed, discarded spoilage, and bunk termination dates.
- Match chopping and delivery rate with packing capacity and document packing tractor hours.
- Inspect covers, wall interfaces, and runoff controls and record repaired damage.
- Connect storage-unit changes with ration inclusion, corn meal, milk, components, refusals, and manure observations.

9.4 Water-quality and double-crop priorities

- Track cover-crop acres, planting method, date, establishment, termination, cost, and spring biomass.
- Link manure and fertilizer applications with soil tests, crop need, incorporation, weather, and harvested nutrient removal.
- Evaluate high-risk or low-yield corn fields for cover crops, reduced tillage, rotation, drainage, or a different crop.
- Use the corn-only baseline as the comparison point for Report 3's double-crop analysis.

10. Advisor Checklist

Review area	Advisor question
Scope	Is the analysis field-only, delivered to storage, removed for feeding, or consumed?
Acres	Are planted and harvested corn acres reconciled by field, ownership, and crop year?
Hybrid	Are hybrid, relative maturity, trait package, seed cost, and population recorded?
Planting	Are planting date, tillage, stand count, and field condition recorded?
Yield	Are load weights and whole-plant DM available by field or load group?
Fertility	Are lime, fertilizer, manure gallons, analysis, timing, incorporation, and application cost assigned by field?
Crop protection	Are chemical products, rates, acres, and application charges separated?
Custom work	Can invoices be assigned by operation, crop, and acre?
Machinery	Are hours, fuel, repairs, capital recovery, and use percentages available by machine?
Labor	Are planting, crop care, harvest, hauling, packing, dairy, maintenance, and owner hours separated?
Harvest quality	Are DM, chop length, processor setting, and kernel processing score recorded?
Storage	Are density, packing, cover date, storage unit, spoilage, and runoff controls recorded?
Inventory	Are remaining tons, used tons, carryover, and runout projections reconciled across snapshots?
Feed quality	Are DM, starch, NDF, NDFD, ash, fermentation, and mycotoxin results available?
Herd response	Are milk, components, DMI, refusals, corn meal, and ration changes linked with feedout periods?
Water quality	Are cover crops, nutrient timing, tillage, erosion risk, rotation, and runoff controls documented?
Interpretation	Does each recommendation compare added value with added cost and risk?

Appendix A. Assumption Register

The assumptions below govern the illustrative figures used in this report. Every value applies to the hypothetical example farm and is rounded. None is drawn from any individual farm. A farm applying this method substitutes its own measured values.

Assumption	Value	Reason	Status
Corn acres	200	Illustrative farm parameter	Illustrative
Hay acres	400	Illustrative farm parameter	Illustrative
Crop-input intensity split	33% hay / 67% corn	Corn seeded, fertilized, and sprayed annually; hay input intensity ~one quarter of corn	Working assumption
Harvest-activity crop split	76% hay / 24% corn	Four hay cutting cycles vs. one heavier corn pass	Working assumption
Seasonal yield	20 as-fed tons/acre	Round Vermont figure for corn silage at ~35% DM	Illustrative
DM sensitivity	32%, 35%, 38%	Common bunker corn-silage range	Not measured
Shrink sensitivity	5%, 10%, 15%	Illustrates field-to-feed loss effect	Scenario only

Appendix B. Calculation Detail

The calculations below reproduce the unit-cost results in Section 5 for the illustrative example farm. All inputs are rounded and illustrative.

Calculation	Formula	Result
Total allocated corn cost	Sum of corn allocations across categories	$235,000
Cost per corn acre	$235,000 / 200 acres	$1,175.00
Total as-fed corn silage	200 acres × 20 as-fed tons/acre	4,000 tons
Cost per as-fed ton	$235,000 / 4,000 tons	$58.75
Cost per DM ton at 35% DM	$235,000 / (4,000 × 0.35)	$167.86
Cost per DM ton range	32% to 38% DM	$184 to $155
Cost per usable ton at 10% loss	$235,000 / (4,000 × 0.90)	$65.28
Cost per usable ton range	5% to 15% loss	$62 to $69

Appendix C. Explanation of Farm Expense Allocation Rationale

The corn allocations were developed as a transparent working method for assigning mixed whole-farm expenses to the corn silage enterprise when direct enterprise records were unavailable. The approach first separates expenses associated primarily with dairy operations from expenses associated with crop production. The remaining crop share is then divided between hay and corn using one of three approaches: crop acreage, crop-input intensity, or the nature of the expense. The resulting percentages are provisional management estimates for one illustrative farm rather than audited enterprise costs. Direct invoices, equipment hours, payroll records, and field-level input records would provide a stronger basis. Every farm sets its own parameters and should document its own reasoning.

Seed was assigned 85 percent to corn and 15 percent to hay, because corn is planted every year while established hay stands remain productive for several years and require seed mainly during establishment or renovation. Fertilizer and lime were split 67 percent to corn and 33 percent to hay by crop-input intensity, because corn is fertilized annually and more heavily per acre, while an established hay stand receives fertilizer or lime only about once a year. On this farm, hay's per-acre input intensity is taken at roughly one quarter of corn's. Chemicals for spraying and pesticides were split 85 percent to corn on the same basis, because corn is the sprayed crop and established hay receives little to none.

Custom hire and professional fees were split 45 percent to corn and 55 percent to hay, because corn draws real custom work for chopping, planting, and tillage alongside the repeated mowing, merging, and chopping of several hay cuttings. Fuel, repairs, and supplies were first divided between cropping and dairy operations, with 75 percent assigned to cropping. The crop portion was then divided by harvest activity, about 24 percent to corn and 76 percent to hay, because hay's four cuttings generate far more field passes than corn's single, heavier harvest. Hired labor was assigned 60 percent to dairy operations because the payroll account is dominated by herd management and daily dairy work, with the remaining 40 percent divided by the same harvest-activity split, producing a small corn share.

Manure application does not appear as a separate line. On most farms its cost is not separately recorded on the Schedule F; it lives inside fuel, repairs, labor, and custom hire. On the example farm, manure is spread on corn once after fall silage harvest and on hay after each cutting, so its cost follows the same harvest-activity pattern as the categories that carry it. Breaking it out separately would risk double-counting.

Fixed expenses were allocated more conservatively to the corn enterprise because farm property, buildings, and rented ground also support the dairy herd. Half of property tax was assigned to dairy operations, with the remaining half divided by crop acreage. Land and building rent was assigned 40 percent to dairy operations, with the crop portion divided by acreage. Equipment and livestock rent is not carried as a cost line for the example farm.

The method balances three factors: the share of land devoted to corn, the heavy annual crop-input requirements of the corn enterprise, and the need to avoid assigning dairy-related expenses to the crop enterprise. It provides a defensible starting point for estimating corn silage cost of production while clearly identifying where direct records would improve accuracy.

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