WHY RANCHERS WHO ADOPTED NEW FEED TECHNOLOGY MADE THE LEAP

And, what is everyone else waiting for?

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A global survey of 5,500 farmers, a deteriorating feed market, and what it takes for a rancher to move from interested to installed.

ABSTRACT

This whitepaper examines why some livestock operators have already adopted hydroponic green fodder systems while others remain on the sidelines, using McKinsey and Company's February 2023 global survey of 5,500 farmers as an analytical backbone. That research identified a consistent pattern across agricultural technology categories: adoption is driven less by curiosity about a new tool and more by a specific cost pressure, and it is held back less by skepticism about whether the technology works and more by unclear return on investment, high up-front cost, and a lack of trusted, peer-verified information. This paper translates that pattern to the fodder decision specifically, drawing on current conditions in the western United States, including record-low snowpack, rising hay prices, and a national cattle herd at its smallest size since 1951, to show why the same forces are now converging on ranchers, equestrian facilities, and dairy producers. The result is a practical picture of what separates operators who have already made the leap from those still waiting, and what it would take to move the rest.

EXECUTIVE SUMMARY

THE DECISION EVERY RANCHER IS BEING ASKED TO MAKE

In February 2023, McKinsey and Company published the results of a global survey of 5,500 row- and specialty-crop farmers across Asia, Europe, North America, and South America. The study set out to answer a simple question: *with agricultural technology promising real returns, why does adoption remain so slow?* The answer it found has direct relevance to a decision many livestock operators are facing right now, as drought, hay prices, and shrinking cattle inventories push feed technology from a curiosity into a necessity.

67%	47-52%	3:1	20%
CITE RISING INPUT COSTS AS A TOP CONCERN	CITE COST AS THE TOP ADOPTION BARRIER	MINIMUM ROI FARMERS REQUIRE BEFORE ADOPTING	CITE DATA OR OWNERSHIP CONCERNS AS A BARRIER

This whitepaper uses that research as a backbone, translating global agtech adoption patterns to the specific decision ranchers, equestrian facilities, and dairy producers face when evaluating hydroponic green fodder systems. The pattern is consistent: operators are not slow to adopt because they doubt the technology works. They are slow to adopt because cost, unclear return on investment, and a lack of trusted, peer-verified information stand between interest and installation. Once those three barriers are addressed, adoption follows.

Farmers are not resistant to new technology. They are resistant to unclear return on investment, unproven cost structures, and sources of information they do not trust.

The operators who have already made the leap to fodder systems, including Eleusis clients across four continents, share common traits with the early adopters McKinsey identified in its global survey. Understanding those traits, and the conditions that triggered the decision to move, gives every rancher still on the sidelines a clearer picture of what it actually takes to move from general interest to introducing a solution.

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INTRODUCTION

Every rancher evaluating a new feed technology is really answering three questions at once: what does it cost, does it actually pay for itself, and can I trust the person telling me so. Those questions are not unique to fodder systems. They are the same questions McKinsey found driving, or blocking, agricultural technology adoption among 5,500 farmers surveyed globally in 2022, across categories ranging from farm-management software to precision-agriculture hardware. What makes this moment different for livestock operators in the western United States is that the conditions behind those questions have shifted sharply. Water is scarcer, hay is more expensive, and the national cattle herd has contracted for four consecutive years. The technology has not changed. The cost of standing still has.

METHODOLOGY

This whitepaper is a synthesis, not a new primary study. Its analytical backbone is McKinsey and Company's February 2023 report, based on a survey of 5,500 row- and specialty-crop farmers conducted in 2022 across eight countries in Asia, Europe, North America, and South America. That research was not designed around livestock feed or fodder systems specifically, so its findings are used here as a directional framework for adoption behavior, not as fodder-specific data. Where McKinsey's survey identifies a barrier, a trigger, or a trust pattern in agtech adoption broadly, this paper tests whether the same pattern holds for the fodder decision, drawing on Eleusis's own field experience across more than 400 installations and on current, independently sourced reporting on drought, hay markets, and cattle inventory in the western United States through mid-2026. Figures describing Eleusis systems, costs, and production come from company records. Figures describing water, weather, hay markets, and herd size are drawn from named public sources, cited at the end of this paper, and reflect conditions as of publication. Readers should treat the McKinsey percentages as evidence of a general adoption pattern across agricultural technology, and the fodder-specific conclusions drawn from them as informed interpretation rather than a like-for-like replication of the original study.

THE PRESSURE BUILDING BEHIND THE DECISION

Adoption research typically treats farmer decision-making as a rational, unhurried process. In practice, most adoption decisions are triggered by a specific, often uncomfortable, change in conditions. For a growing number of ranchers in the western United States, that trigger is arriving now.

Water and snowpack

Colorado's snowpack peaked at 22 percent of the historic median on April 1, 2026, the lowest level recorded under the current measurement system, according to the state climatologist. The Colorado River Basin measured about 25 percent of its 30-year norm at the same point in the season. Lake Powell, the reservoir that supplies the Upper Colorado Basin, had fallen to 24 percent of capacity by mid-April 2026. Snowmelt supplies roughly 80 percent of the water used by downstream communities across the basin, so a snowpack shortfall of this scale carries directly into irrigation water available for hay production later in the year.

Hay markets

The consequence is already showing up in hay markets. Ranchers in western Colorado report that water availability could run 30 to 50 percent below normal this year, with hay running $180 to $300 per ton depending on quality and region. Drought or abnormally dry conditions covered roughly three-quarters of the country by late May 2026, affecting 51 percent of alfalfa acreage and nearly 60 percent of rangeland nationally. Wyoming reported hay prices $15 to $20 per unit higher than the prior report in a narrow comparison, and Texas hay production ran approximately 20 percent below the prior year. For horse owners, quality alfalfa and grass hay remain expensive even where national averages show modest easing.

Herd economics

These pressures are landing on a national cattle herd that is already historically small. The United States Department of Agriculture's January 2026 inventory report put the total United States cattle herd at 86.2 million head, the smallest count since 1951 and a fourth consecutive year of contraction. Rising input costs, persistent drought, and increased consolidation are the factors most commonly cited for the decline. For operators managing a herd this size, every additional dollar spent on purchased forage, and every additional day of feed uncertainty, carries more weight than it would have five years ago.

This is the backdrop against which the McKinsey adoption research becomes directly useful. Farmers globally are not evaluating agtech in the abstract. They are evaluating it against a rapidly changing cost and risk environment, and that environment is the single biggest variable in whether a given technology gets a serious look.

WHAT THE GLOBAL DATA SAYS ABOUT WHO ADOPTS, AND WHY

McKinsey's 2022 survey found that agtech adoption is real but uneven. Thirty-nine percent of farmers surveyed globally were using, or planning within two years to use, at least one agtech product. North American and European farmers led adoption at about 61 percent. Farm size was the strongest single predictor of adoption: 81 percent of large operations (more than 5,000 acres) had adopted or planned to adopt agtech, compared with 76 percent of medium-sized operations and just 36 percent of small operations.

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The reasons for hesitation were consistent across regions. Cost was the leading barrier, cited by 47 percent of farmers overall and by 52 percent of North American farmers specifically. Unclear return on investment followed, cited by roughly 30 to 40 percent depending on region. Notably, half of all farmers surveyed said they were unwilling to pay for agtech solutions at all, a response the researchers attributed in part to a market where free or deeply discounted digital tools have trained farmers to question whether newer, paid offerings are worth the cost. Farmers who were willing to pay set a high bar: the minimum expected return required to justify adoption was 3 to 1.

Two other findings stand out. First, rising input prices are the dominant pressure driving farmers toward new tools in the first place: 67 percent of farmers surveyed cited increased input costs as one of their top three concerns for profitability, and reported that input prices generally had risen between 80 and 250 percent in recent years. Second, when farmers were asked whom they trust for information about a new product, agronomists ranked first, followed by neighboring farmers, then sales representatives, and finally online sources. Fewer than 12 percent of farmers said they strongly prefer to buy agricultural technology online. Adoption, in other words, follows trusted relationships and word of mouth far more than it follows advertising.

TRANSLATING THE PATTERN TO THE FODDER DECISION

The specifics of hydroponic fodder differ from the precision-agriculture hardware and farm-management software McKinsey's survey focused on, but the underlying decision structure is the same one facing every ranch considering a Green Sprout system. Three of McKinsey's findings map onto the fodder decision almost exactly.

1. The trigger is a cost shock, not curiosity

McKinsey found that rising input costs, not general interest in innovation, are what actually move farmers toward new tools. The same pattern shows up in the conversations happening in producer forums right now. Ranchers are not searching for fodder systems because the concept is novel. They are searching because a ton of hay that cost $150 two years ago now costs $250 or more, because water allocations are being cut, and because the herd they have spent a generation building is suddenly harder to justify feeding at current prices. The rancher who adopts is typically the rancher who has just done the math on next winter's feed bill and did not like the answer.

2. The barrier is cost clarity, not technology skepticism

Cost and unclear ROI accounted for the top two adoption barriers in McKinsey's survey, well ahead of complexity or unfamiliarity with the technology itself. This is consistent with what Eleusis hears directly from ranchers: the hesitation is rarely about whether hydroponic fodder works. It is about whether the numbers pencil out for their specific operation. This is precisely why Eleusis leads with figures rather than claims: production costs of $0.05 to $0.06 per pound of barley sprouts, water use of less than one quarter of a gallon per pound of fodder produced against more than 40 gallons for the equivalent weight of hay, and installed system costs starting around $70,000 to $75,000 for a containerized unit producing roughly 500 kilograms per day. A rancher who can put Eleusis's cost per pound next to their current hay bill is doing exactly the ROI calculation McKinsey's survey shows farmers require before they will move.

The 3-to-1 minimum ROI threshold that McKinsey's respondents set is also a useful lens for evaluating a fodder investment. With hay running $180 to $300 per ton in drought-affected regions this year, and Eleusis production costs measured in cents per pound, the math is one most ranchers can complete themselves once they have accurate figures for their own herd size, ration inclusion rate, and current feed spend. Systems approved under the USDA Environmental Quality Incentives Program add a further lever, directly addressing the up-front cost barrier that McKinsey's survey identified as the single largest obstacle to adoption.

3. Trust travels through agronomists and neighbors, not advertising

McKinsey's finding that agronomists and neighboring farmers are the most trusted sources of information, ahead of sales representatives and far ahead of online sources, explains something Joaquin Gonzalez and the EleusisFeed team have observed directly: organic conversation about fodder systems is already happening in producer forums, ahead of any formal marketing push. This is precisely how adoption of practical, capital-intensive agricultural technology tends to spread. It also explains why Eleusis works closely with networks of animal nutritionists on ration design, and why site visits to existing installations are consistently one of the most persuasive tools in a rancher's decision-making process.

WHAT SEPARATES ADOPTERS FROM THE REST

Set against this data, the ranchers who have already adopted fodder systems, and the farmers McKinsey identified as agtech's early movers, share a recognizable profile.

- They faced a specific, quantifiable cost or supply pressure rather than a general sense that new technology might be useful.
- They had, or were given, a clear cost-per-unit comparison against their current feed source rather than a vague efficiency claim.
- They heard about the technology, or validated it, through a trusted peer, nutritionist, or agronomist rather than through advertising alone.
- They had a path to reduce up-front capital exposure, whether through phased installation, retrofit of existing structures, or grant funding such as USDA EQIP.
- They operated at a scale, or faced a risk level, where the cost of inaction had become clearer than the cost of change.

None of these traits require a rancher to be an early adopter by temperament. McKinsey's research is explicit on this point: farmers overall are open to innovation when the pressure is real and the numbers are clear. Thirty-nine percent of farmers surveyed globally were already moving on at least one agtech product despite widespread hesitation about cost and ROI, which shows that adoption follows evidence, not appetite for risk.

WHAT EVERYONE ELSE IS WAITING FOR

The operators who have not yet moved are not, by and large, waiting for proof that hydroponic fodder works. Four decades of operating history and more than 400 installations across four continents have already answered that question. What they are waiting for, based on both the McKinsey findings and direct conversations in the field, tends to fall into a short list.

A cost comparison specific to their operation

General claims about efficiency do not move a rancher who is used to evaluating hay contracts and feed budgets in exact numbers. What moves them is a side-by-side comparison built around their herd size, current feed cost, and ration inclusion needs.

Confirmation from someone they trust

A recommendation from a nutritionist, a fellow rancher, or a site visit to a working installation carries more weight than any brochure. Operators waiting on this signal are often one conversation away from moving.

Clarity on financing and capital exposure

Given that half of all farmers in McKinsey's survey said they were unwilling to pay for new technology at all, and that cost was the top-cited barrier worldwide, a clear picture of financing options, grant eligibility, and phased installation paths removes the single largest obstacle standing between interest and a signed order.

A moment that makes the status quo untenable

For some ranchers, the current drought, hay market, and herd economics already constitute that moment. For others, it has not yet arrived. Either way, the decision tends to follow the same sequence McKinsey's data describes: a cost pressure creates urgency, a trusted source validates the option, and a clear return on investment closes the gap.

CONCLUSION

The McKinsey study surveyed row and specialty-crop farmers, not livestock operators, and it studied a broad category of agricultural technology, not fodder systems specifically. But the underlying mechanics of adoption it uncovered, cost pressure as the trigger, ROI clarity and trusted peer validation as the deciding factors, and up-front cost as the primary obstacle, describe the fodder decision with striking precision. Ranchers evaluating a Green Sprout system today are living through the exact conditions the research identifies as the tipping point for adoption: rising input costs, a historically constrained herd, and a feed market that is becoming less predictable by the season.

Feed security is infrastructure. The operators who have already built it did so by getting clear answers to the same three questions every hesitant rancher is asking right now: what does it cost per pound, who else is running one, and how quickly does it pay for itself. Eleusis exists to answer all three, plainly and with real numbers, the way a fellow practitioner would.

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FREQUENTLY ASKED QUESTIONS

Is the McKinsey study specific to livestock feed or fodder systems?

No. McKinsey's February 2023 survey covered row- and specialty-crop farmers across Asia, Europe, North America, and South America, and it studied agricultural technology broadly, including farm-management software, precision-agriculture hardware, and remote-sensing tools. It did not survey livestock operators or study fodder systems specifically. This whitepaper uses the survey's findings on adoption behavior, primarily what triggers a farmer to adopt a new technology and what holds them back, as a framework, then tests whether that same pattern applies to the fodder decision using current market data and Eleusis's own field experience.

What is the single biggest barrier to adopting a fodder system, according to the data?

Cost and unclear ROI, in that order. McKinsey found that 47 to 52 percent of farmers cited cost as their top barrier to adopting agricultural technology, ahead of complexity or unfamiliarity with how a given tool works. Half of all farmers surveyed said they were unwilling to pay for new technology at all. This is consistent with what Eleusis hears directly from ranchers: the hesitation is rarely about whether hydroponic fodder works, but about whether the numbers make sense for their specific operation.

What actually triggers a rancher to move from interested to installed?

A cost pressure they can no longer absorb, not general curiosity about new technology. McKinsey found that 67 percent of farmers cited rising input costs as a top concern, and that input prices generally had risen 80 to 250 percent in recent years. For ranchers today, the equivalent trigger is a hay bill that has grown faster than their operation can sustain, often arriving alongside a specific event such as a drought year, a water allocation cut, or a hay contract renewal at a sharply higher price.

Why does Eleusis emphasize site visits and nutritionist relationships instead of advertising?

McKinsey's survey found that agronomists were the most trusted source of information for farmers considering a new technology, followed by neighboring farmers, then sales representatives, and lastly online sources. Fewer than 12 percent of farmers said they strongly prefer to buy agricultural technology online.

How much return on investment should a rancher expect before adopting a fodder system?

McKinsey's respondents set a minimum threshold of 3 to 1 before they would consider a new agricultural technology worth adopting. Applied to fodder, that means comparing Eleusis's production cost of $0.05 to $0.06 per pound of barley sprouts against a ranch's current hay spend, which has run $180 to $300 per ton in drought-affected regions this year, along with water savings and reduced dependence on volatile hay markets. Every operation's exact ratio will differ based on herd size, ration inclusion rate, and current feed costs, which is why Eleusis works through the specific numbers with each rancher rather than citing a single blanket figure.

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