

Survey of the Rye Value Chain in the Northeast

Authors: Brian Baker, June Russell, Heather Darby, Henry Blair

THIS STUDY WAS CONDUCTED by the University of Vermont Extension with funding from the USDA's Northeast Sustainable Agriculture Research & Education (NESARE) program (LNE22-437), in collaboration with the Glynwood Center for Regional Food and Farming and the Center for Rural Studies at the University of Vermont.

RYE SURVEY OBJECTIVE

The purpose of the survey was to gather information on the market opportunities and challenges for increased cereal rye production in the Northeast region.

Methodology

An on-line survey was sent to primary grain processors (farmers, food and feed mills, distillers, and handlers) at the beginning and middle of the value chain. Responses from secondary processors, such as bakers, were included in the results. The survey was distributed to primary and secondary processors through partner networks and email lists. The survey contained questions specific to each group.

After the survey results were reviewed, four primary and secondary processor focus groups (farmers; maltsters and distillers; millers and bakers; and feed and seed handlers) were invited to meet August and September of 2023 to offer more detail and build additional context around rye production and processing. Invitations were emailed to specific members of each group, requesting they join a virtual call: the Project Team interviewed three farmers, two maltsters, two distillers, two bakers, one miller, and one feed miller. Questions were designed to gather more detail about production and processing challenges; quality requirements; varietal attributes/preferences; grain supply; and market opportunities.

Table 1. Responses by State

State	Number	%
Connecticut	2	2.9
Delaware	1	1.0
Maine	6	5.9
Maryland	3	2.9
Massachusetts	5	4.9
New Jersey	1	1.0
New York	31	30.4
Pennsylvania	2	2.0
Vermont	6	5.9
Other*	44	43.1
Total	102	100

* Producers responding from outside the Northeast SARE Region were from the following states: (Alaska (1), California (1), Illinois (4), Michigan (2), Minnesota (7), North Carolina (3), Ohio (7), Oregon (1), Virginia (9), Wisconsin (9).

CEREAL RYE OFFERS SEVERAL AGRONOMIC BENEFITS

- Rye is the most winter-hardy of the small grains, is tolerant of poor and marginal conditions and can thrive in northeast climate.
- Rye can be used to break host cycles for pests and diseases, and is allelopathic, a natural weed suppressant.
- Rye requires fewer fertilizer inputs and can be drought tolerant.
- Used as a cover crop, rye can reduce erosion and add significant organic matter.
- Rye is versatile and offers producers flexibility in marketing and on-farm end uses.

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■ Results

These were our main findings:

Growers (N=26)

- Producers are reluctant to expand production unless they are guaranteed a market.
- The main market for cereal rye is seed, with much of it grown as a cover crop in the Northeast.
- Yield is a major concern.
- Other concerns include: organic seed availability; germination rate; pathogens, mycotoxins, and flavor.
- The majority of producers sell through multiple channels that include a variety of end uses.
- Common complaints include: lack of market and low prices.
- Almost one-third are unable to sell their total rye yield.
- Specifications for food-grade and distilling markets are not always consistent or readily known.

Distillers and Maltsters (N=32)

- Demand is not being met for several value-added products, particularly distilled spirits.
- Flavor is the top concern for both groups.
- Sourcing grain from local or in-state farms is the second biggest priority for distillers.
- Maltsters require a high germination rate (not a concern for distillers).
- Supply chains are short, with most buying directly from farmers.
- Purchases are evenly split between pre-season contracts and informal agreements/spot markets.
- Storage capacity is a limiting factor.

Millers and Bakers (N=26)

- Several noted that rye is more difficult to mill than wheat.
- Baking results are unpredictable and vary widely depending on variety and other factors.
- Millers and Bakers are wary of purchasing Variety Not Specified (VNS) rye.
- Bakers are largely unclear on rye quality parameters for bread (which values differentiate high- from low-quality rye).
- A few operations were vertically integrated from field-to-table/growing-to-baking.
- One miller was unable to get all the rye they needed to fill their orders.

Seed Dealers (N=17)

- Yield is their top concern.
- Germination is the second greatest concern—followed by cleanliness and certified organic status.
- Seed dealers frequently have pre-season contracts with producers.
- Most seed sold is purchased for cover crop.
- Incentive programs may drive demand for rye seed for use as cover crops.
- Dealers are able to get all the rye seed needed (only one was not).
- Rye seed is currently more expensive than wheat (Fall 2023).

Cleaners, Aggregators (N=15)

- Cleanliness and germination rate are top concerns.
- Other major concerns include ergot and vomitoxin.
- Most product is milled into flour.
- Rye flakes and cracked rye products require very clean grain.

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Feed Millers (N=9)

- Top concern is protein content (cited by 64%).
- Other major concerns include organic status, pathogens, and cleanliness.
- One-third of respondents cited ergot and vomitoxins (DON) as specific concerns.
- Livestock producers grow rye in rotation—and mill for their own herds.
- Eight out of eleven respondents grew their own rye.
- Cereal rye can be grown as a forage crop in pastures and grazed or harvested for stored feed.
- Producers expressed interest in rye for animal feed.

The Takeaway

- Clear opportunities exist to expand production of rye for seed and for value-added markets.
- Distilling and baking appear to offer the most demand for value-added products.
- Distillers, flour millers, and bakers want to know which varieties are the most flavorful—potentially offering opportunities for plant breeders and sensory researchers.
- A better understanding of functional attributes of different varieties is critical (including those of hybrid and open-pollinated varieties).
- Millers are potentially unclear about important quality parameters pertaining to their bakers; and therefore can experience variation in end-product by variety or growing year (even if lab analyses appear similar). There is an opportunity for further research to better understand quality attributes for baking.
- Value-added markets (such as distilling and baking) want cleaner grain and better quality, but may not be willing to pay the premium to incentivize production.
- The value chain relies mostly on informal agreements and the spot market.

