



An Organic Food-Grade Wheat Market? What's Missing for Success

A comprehensive approach to improving a regional organic wheat market

1. Background

There is a real market waiting to be filled. Bakeries across the Southeast and the country want organic, regionally grown flour, consumers are looking for organic bread. And the price rewards it: in recent years organic food-grade wheat has sold at more than double the price of conventional wheat. Across most of the Southeast, however, there is still no established organic food-grade wheat industry. Growers rarely plant it at scale, and buyers who want it often cannot reliably source it close to home.

Rather than a single reason, there are a clear number of factors contributing to the vacuum: a climate that makes the crop hard to grow, disease that turns a growing problem into a food-safety problem, organic rules that remove the conventional fix, and a missing set of businesses (cleaners, testers, storers, and mills) that a food-grade crop needs before it can reach a plate.

This guide walks the chain link by link, because understanding the sequence is the key to understanding both the failure and the fix. It is written for the wider organic community and is designed to outline a comprehensive approach that treats the barriers as what they are, a connected system rather than a list of separate complaints.

2. A Supply, Not Demand Problem

Before diagnosing what is broken, it helps to rule out what is not. The missing organic wheat market is not the result of weak demand. By every available measure, demand is the healthy part of the equation.

The clearest evidence is price. Organic food-grade wheat has commanded a substantial and durable premium over conventional grain — recent USDA figures cited by agricultural economists put organic food-grade wheat near \$12.20 per bushel against roughly \$5.35 for

conventional wheat. A premium that large, sustained over years, is a market signaling that it wants more supply than it is getting.

Supply, meanwhile, has barely moved. Certified organic wheat acreage grew only about twenty percent between 2008 and 2016 and has remained under two percent of total U.S. wheat acreage. Analysts who study the buyer side describe the organic wheat market as constrained by a lack of supply, not by a lack of buyers. Nationally, the organic grain shortfall is significant enough that processors routinely import to meet it.

If demand were the problem, the fix would be marketing. Because supply is the problem, the fix is everything that stands between the producer and a food-grade crop that a buyer will accept. The rest of this guide is about those obstacles, and why market forces alone have not cleared them.

Food-grade vs. feed-grade: a critical distinction

“Food-grade” wheat is grain clean and sound enough to be milled into flour for people.

“Feed-grade” grain goes to livestock and sells for far less.

The same field can produce either one — the difference often comes down to disease and the toxins it leaves behind. A crop that looks fine can still be turned away from the food-grade market and sold into feed at a fraction of the price. That single fact, explained over the next three sections, explains most of the missing market.

3. Climate Complications

The Southeast is not the wheat belt, and its central obstacle is different from the ones described in most national organic-grain literature. In the Upper Midwest and Northern Plains, the hard problems are weeds and market access. In the Southeast, the hard problem is the climate itself and the diseases associated with it.

The region grows soft red winter wheat, and its warm, humid springs are close to ideal for a set of fungal diseases: Fusarium head blight (widely known as “scab”), leaf rust, and stripe rust. A regional review of these diseases identifies them as the leading biological constraints on Southeast wheat, singling out Fusarium head blight because it damages both the size of the harvest and its safety. Bread-quality wheat has historically struggled here for exactly this reason; as one account of the region's grain revival memorably put it, “hard wheat abhors humidity.”

The mechanism matters for understanding the risk. Fusarium head blight infects the wheat head during flowering, and it thrives when warm, moist conditions arrive at exactly that moment — a routine feature of the Southeast spring rather than a rare bad year. The disease is therefore not an occasional nuisance but a structural feature of growing wheat in the region's climate.

There is a strategic lesson buried in that difficulty, and it points forward to the rest of this guide. Because the conditions that drive the disease cannot be changed, the most reliable defense is the wheat plant's own genetics. In the words of a regional disease review, “genetic resistance is the most effective and sustainable approach for managing wheat diseases.”

What is Fusarium head blight (“scab”)?

A fungal disease that infects wheat heads during flowering, especially in warm, wet weather. It shrivels kernels and lowers yield — but its most consequential effect is invisible: it can leave a toxin behind in otherwise normal-looking grain.

4. Food Safety and DON

Beyond climate, food safety also plays a unique role, and is a critical component of understanding the difficulty in establishing a food-grade market. Fusarium head blight does more than reduce yield; it contaminates grain with a mycotoxin called deoxynivalenol — DON, informally “vomitoxin.”

For grain destined for people, the U.S. Food and Drug Administration (FDA) sets an advisory level of one part per million of DON in finished wheat products. That is a strict bar, and deliberately so: the tolerances for animal feed run several times higher, in the range of five to ten parts per million depending on the animal. The gap between those two thresholds is the gap between food-grade value and feed-grade value.

Two features of this rule make it especially unforgiving. First, the contamination cannot simply be cleaned away. The FDA states plainly that it is “not possible to completely avoid the presence of DON in wheat,” and while milling reduces the toxin, it does not eliminate it. Second, the FDA sets no advisory level for raw wheat headed to the mill, relying instead on processors to manage the toxin down in the finished product. In practice, that means the rejection risk lives inside the relationship between a grower and a buyer — there is no public floor that guarantees a crop will be accepted.

A producer can do nearly everything right, harvest a crop that looks clean and ready, and still see it fail a DON test and get diverted into low-value feed markets. The premium described in the above section is real, but it is **conditional**, earned only by grain that clears the invisible gate.

The value that vanishes at the gate

Food-grade organic wheat has recently sold near \$12.20 per bushel. Feed-grade grain sells for a fraction of that.

A single DON test result above the food-grade threshold can move a harvest from one column to the other. For a farmer weighing whether to plant, that is not a quality footnote — it is the central financial risk of the entire enterprise.

5. Thin Seed Variety

The strict requirements of organic regulations adds another layer of difficulty. Conventional wheat growers manage Fusarium head blight with well-timed fungicide

applications, which can meaningfully suppress the disease and the toxin it produces. Certified organic growers cannot use those synthetic products.

Variety selection becomes the primary line of defense rather than one option among many. Research on organic *Fusarium* management bears this out — trials comparing wheat varieties found that a moderately resistant cultivar significantly reduced both disease severity and DON contamination relative to a susceptible one, with organic-approved products playing only a supporting role. For an organic grower in a high-pressure climate, the choice of variety is not a preference; it is the core risk-management decision.

The variety pipeline is thin

If resistant, regionally adapted, food-grade varieties are the answer, the Southeast has historically had too few of them. The region's modern bread-wheat story only became possible after USDA-ARS breeder David Marshall established that bread wheats could in fact be grown in the eastern United States and helped develop adapted varieties such as NuEast and Appalachian White. That work was a milestone, but the pipeline of varieties that are simultaneously disease-resistant, food-grade in quality, regionally adapted, and available to organic growers remains narrow.

Plant breeding follows markets: a small, uncertain regional organic segment attracts little breeding investment, which keeps the segment small.

The rotation carries hidden costs too

Organic systems also depend on diverse crop rotations to manage fertility and weeds without synthetic inputs. Those rotation crops need markets of their own, and where such markets are weak, the whole organic wheat rotation becomes harder to justify economically. National assessments of organic grain repeatedly flag the absence of viable markets for these fertility- and weed-management crops as a barrier in its own right — one more cost that falls on the grower who tries to go first.

6. Supply Chain Gaps

Once a producer checks all the boxes: the right resistant variety, a clean crop, a passing DON test, there is still a gap between that grain and a bag of flour. Food-grade wheat must be cleaned, stored properly, tested, and milled — and across much of the Southeast, that infrastructure barely exists at a regional scale. National assessments describe organic grain supply as a bottleneck for value-added processing, and the Southeast feels the shortage acutely, including seed cleaning, appropriate storage, accessible DON testing, and food-grade organic milling are all in short supply.

Growers are also reluctant to plant a risky specialty crop without a committed buyer. Buyers and millers are reluctant to invest in equipment and contracts without a reliable volume of local grain. Breeders are reluctant to prioritize a segment with no established market. Each actor waits for another to move first.

The encouraging news is that the standoff can be broken, and it has been, at modest scale, in the Southeast itself. Carolina Ground, a mission-driven micro-mill in Asheville, North

Carolina, sources certified-organic grain from Southern farms and mills it into food-grade flour for bakeries. It grew directly out of the North Carolina Organic Bread Flour Project, an initiative Carolina Farm Stewardship Association launched in 2009 with the express goal of closing the gap between the farmer and baker in the Carolinas. Alongside longstanding organic millers such as Lindley Mills in central North Carolina, it demonstrates that a functioning farmer-miller-baker chain in the region is possible.

The farmer–miller–baker relationship

The unit that makes organic wheat work is not a single farm or a single mill — it is the relationship connecting a grower, a miller, and a buyer around an agreed variety, quality standard, and price.

That relationship is what absorbs the DON-rejection risk, justifies investment in equipment, and gives a breeder a reason to develop the next resistant variety. Build the relationship and the rest becomes financeable. Leave each actor isolated, and the chain stays broken.

7. Next Steps and a Way Forward

Pulling the chain together answers the question the guide began with. The Southeast has no established organic food-grade wheat market not because of any one obstacle, but because the obstacles are interdependent. A demanding climate creates disease; disease creates a food-safety gate; organic rules remove the conventional way through that gate and throw the weight onto a thin variety pipeline; and the businesses needed to finish the crop have not been built because no single actor can justify going first. Left to itself, the market settles into a stable, low-supply, high-risk equilibrium.

The equilibrium is stable, but does not have to be permanent. Every link in the chain is addressable, and the national evidence is that the underlying enterprise is sound once the barriers are worked on together. As the Organic Trade Association's grain analysis concludes, “organic grain crops are a financially viable choice for American farmers.”

What that path requires is a comprehensive approach, which includes:

- **Adapted, resistant, food-grade varieties available to organic growers.** The chain begins with genetics. Sustained investment in breeding and organic seed for regionally adapted, disease-resistant, food-grade wheat is critical.
- **Risk-sharing market structures.** Forward contracts, agreed quality thresholds, and price arrangements that share the downside are what national assessments recommend to reduce the financial risk of transition.
- **Regional infrastructure and rotation-crop markets.** Cleaning, storage, accessible DON testing, and food-grade organic milling must exist at regional scale, alongside markets for the rotation crops that organic wheat systems depend on.
- **Technical assistance and coordination.** The shared information, mentoring, and relationship-building that lets farmers, millers, buyers, and breeders move in step instead of waiting on one another.

The Southeast's barriers to organic food-grade wheat are real, and this guide is not designed to minimize them. But they are understood, and there is a precedent for addressing each of them on their own. What remains is to build the market deliberately — link by link — rather than waiting for it to build itself.

Sources & Further Reading

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