

# Growing Organic Cereal Grains in the Northeast

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## Introduction

Organic grain production has generated significant interest in the Northeast during the last few years. Organic dairy farmers are looking for ways to grow some of their own grain concentrate to reduce their reliance on expensive purchased organic feeds. In addition, the market for locally grown food grade grain (for human consumption) has expanded for end-products such as breads, pastries, and beer. Food grade grains will usually bring a premium price, but meeting the higher quality standards can sometimes be difficult and requires attention to detail. The cereal grain straw can also serve as a valuable bedding source for direct use on the farm or as another saleable product.

A variety of winter and spring cereal grains can be grown in the Northeast. Oats and barley are spring grains whereas triticale, wheat, and spelt have both winter and spring adaptability. Cereal rye a common cover crop for the area is for winter production only. Winter grains are sown in early fall for a late July or early August harvest while spring grains are sown in early spring for a slightly later harvest. If you are thinking about growing organic grains for any market—livestock or human, realize that grain harvesting, cleaning, drying and storage equipment should not be an afterthought!

New growers should plan ahead for how they will acquire the proper infrastructure required for successful grain production. Don't wait until harvest to decide how to get the crop out of the field and into storage at the correct dry matter to prevent spoilage. Remember that not all fields are suitable for organic cereal grain production. Although not always possible, avoid fields with heavy, poorly drained soils and those with heavy weed pressure. Adequate crop rotations combined with organic soil management can improve overall soil quality and reduce weed seed banks.

Spring Grains	Fall/Winter grains
Oats Barley Wheat Spelt Triticale	Rye Wheat Spelt Triticale

It is always good to make connections with area grain farmers to observe successful production techniques. This fact sheet will outline agronomic practices and recommendations for organic cereal grain production in the Northeast. If you are going to grow organic grains, you should use this material as a general guideline, but seek out more detailed information from other growers, Cooperative Extension and informative websites such as the Northern Grain Growers Association

<http://northerngraingrowers.org/>

## Organic Certification

If you sell over \$5,000 in organic sales or plan on selling your crop to organic processors or livestock farmers, you will need to become a certified-organic producer with an agency licensed by the USDA (<http://www.ams.usda.gov/AMSV1.0/NOP>). This includes developing a farm plan that outlines your intentions, along with your plans for managing insect, weed and fertility for your organic crops. Successful organic production relies on managing the farm as a whole system. Diverse crop rotations are integral to reducing weed and pest problems and improving soil health.



check it closely for weed seeds or mixed grains prior to using. Additionally, non-certified seed may contain genetic lines that are unknown or variable.

In no case is fungicide treated or genetically modified seed allowed in organic production. Many

and quickly close the canopy. If you plant later in the spring (after May 15<sup>th</sup>)

and the other half is sown at a 45 degree angle to the first. While this adds cost to your seeding, it may increase the grain crop's ability to compete against weeds and fill in a canopy quicker than a single planting. Research at the University of Maine by Lauren Kolb and Eric Gallandt has found that weed biomass in the two pass system was reduced between 25 and 30% compared to standard row spacing, although we saw little impact on yield of grain as compared to conventional row spacing. Additionally, compaction in tire tracks may cause variable germination and plant stand uniformity. Some growers attach a spinner seeder to the front of the tractor and sow half the seed as a broadcast while drilling the other half of the seed with a grain drill behind the tractor. In our trials with this method, we have found a delay in the germination of seeds that were broadcast and those seedlings were more prone to being dislodged during the tine weeding process. Maintaining proper seeding depth (1 to 2 inches, depending on soil texture) below the surface of the soil (not below the residue) is critical to achieving good seed-to-soil contact and proper crown development. Shallow-planted winter wheat is more prone to winter injury.

### **Weed control**

Small grains are very competitive and can withstand some weed pressure without a yield loss. Weeds and weed seeds can become a problem at harvest as they are often moist and green and can impact the dry matter of the grain.

### ***Fall Grains***

With proper timing, grain seeded in the fall has few annual weed issues. Most of our research has indicated that, with good rotations, winter grains are not impacted by annual weeds. Often farmers broadcast seed legumes (8-10 lbs/acre) into the winter grain crop in March/April.

### ***Spring crops***

The earlier you are able to plant a spring grain crop, the more competitive it will be against annual weeds. In addition to planting dates many growers utilize tine weeders to control small annual weeds.

This technique is effective if seedbed preparation is good, if the soil conditions dry and friable and if the weeds are in the “white thread” stage (just emerging).

Picture courtesy of E. Gallandt

### **Harvest and storage**

Cereal grains are normally ready to harvest between mid-July and early-August throughout the Northeast region. Harvesting should begin when the grain reaches 18% moisture or less. Storage moisture for small grains should be around 12-13%, so it may be necessary to dry the crop before storage using batch dryers with propane or with heat and air in bin storages. Waiting to harvest the crop until it reaches storage levels is risky as the crop is more prone to shattering during harvest at this moisture level.

Additionally, adverse weather conditions can quickly deteriorate the quality of a grain crop. This is especially true for soft wheat that can easily begin to sprout on the stem after they become mature and imbibe water from a rainstorm. On-farm moisture testers will be an important tool for the farm. However, proper moisture of the grain is not the only factor impacting harvest efficiency.

Harvest equipment should be adjusted to minimize losses in the field. Review combine adjustments with your owner’s manual and make sure to constantly monitor for field losses. This is easily done