



LAKEVIEW ORGANIC GRAIN
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MANAGING SMALL GRAINS ORGANICALLY

Small grains respond strongly to soil fertility and soil condition. Most small grains will do best in well-drained, fertile soils with a pH of at least 6.0. Barley needs a higher pH (>6.5pH) and oats can tolerate more acidity (>5.8pH) Barley prefers high fertility and dry soil, oats can tolerate lower fertility and wetter fields. More fertile soil that has adequate calcium will definitely give better yields. If possible, spread compost, lime and gypsum in the fall on fields where spring small grains are planned, especially if there is a cover crop to put the amendments on. Fall is also a great time to take soil tests to determine nutrient deficiencies.

Oats and rye respond well to manure or compost applications, but putting on too much nitrogen may cause lodging. Fall planted grains need generous amounts of P and K for good fall tillering and winter survival. As soil cools, phosphorus becomes less available making high P levels more important than with summer planted crops. When soil test levels of P and K are low, poultry litter or compost can be spread before planting to prevent deficiencies. When K is very low, spreading some additional potassium fertilizers (potassium sulfate, potassium chloride, SulPoMag, or green sand) may be needed to improve winter survival and prevent lodging.

According to European research, barley is an extremely heavy feeder, especially of potassium and phosphorus. High nitrogen levels will reduce potassium uptake, possibly creating a shortage if potash soil levels are moderate. When potash levels are low, adding more nitrogen can actually reduce final yield. That makes barley a good place to apply manure, which is high in nitrogen, potassium and phosphorus, along with lots of trace elements.

Generally our best defense against disease in small grains is a healthy soil and diverse crop rotation. Planting a small grain after corn that has had stalk rot (*Fusarium*) should also be avoided because the same pathogen causes scab in small grains. All winter grains follow oats well, but only rye or triticale should follow spring barley. Winter barley can follow winter wheat or spelt but only rye or triticale should follow barley. It is important to choose small grains fields wisely – wild garlic and vetch are noxious weeds in small grains used for food, they are difficult to remove and may result in market rejection.

Small grains should be drilled to a depth of 1–2 inches. The optimal seeding rate for oats is 3–4 bu/A, while barley, wheat and triticale do best at 2.5-3 bu/A. For oats and barley to be used for forage, seeding rate can be reduced by 50%.

With spring-planted small grains, the best strategy is to plant as early as soil temperatures and moisture allow. This will allow the plants to be strong enough to resist insects and diseases later in the season. In New York, a yield decrease of about 1 bu/acre can be expected if oats, spring spelt and spring barley is planted after April 15. A yield decrease of about 1/2 bu/A can be expected if spring wheat is planted after April 15.

For fall-planted grains, winter barley should be planted between late Aug-early Sept, winter wheat should be planted mid-late Sept, winter spelt should be planted early Sept-mid Oct, triticale should be planted from late Aug-early Oct for top yields but can be planted into November for a reduced yield, and rye should be planted mid September through late October. Winter barley will determine its maximum yield potential in the fall by the number of strong tillers it sets and how big it grows. Wheat, spelt and triticale will set tillers both in fall and in spring, so they can compensate better if fall growth is weak. When planting winter grains that are going to be underseeded for hay or pasture, grasses like timothy should be seeded in the fall with the grain, even though alfalfa and clover are frost-seeded in the spring. Generally, winter grains must be planted early in the planting range when fertility is low and can be later with higher fertility

Winter small grains are the ideal place to establish an underseeding of medium red clover that will produce sufficient nitrogen to nourish a good corn crop the following year. Frost-seed clover into small grains in February or March and let it grow through the summer and fall. Be sure to use the correct type of *Rhizobium* inoculant with the clover seed for best establishment and growth. Small grains also can be used successfully as nurse crops for starting pasture and hay crops.

