

## ***Frost Seeding Cereals! Peter Johnson, Cereals Specialist, OMAFRA, Stratford***

1. **Be Prepared.** Have the drill and tractor hooked up, ready to go! The seed and fertilizer should be in the shed by February 15th. Opportunities for frost seeding appear and disappear quickly. The ideal conditions are when the snow has gone, the soil is not frozen and the night temperatures drop to -2° to -7°C.
2. **Start Seeding as the frost is going into the ground.** These are the most ideal conditions. Seeding can often start by 10:00 p.m. and continue until the sun comes out, or the ground gets too hard. Aim for air temperatures of -2 to -6° C. Listen to your drill. As soil becomes frozen solid, the drill begins to sound like it is travelling over a gravel pit. STOP! Significant equipment damage can occur when the ground is frozen solid. DO NOT continue to plant once the soil surface begins to thaw, even slightly. The drill will mud up within SECONDS, and cleanup is a long, slow hassle.
3. **Use the right tractor!** Use equipment set up to minimize compaction under normal conditions. Tires at 6 psi inflation need less frost to carry than tires at 30 psi.
4. **Crop rotation is important.** Following soybeans, edible beans or canola is best. Wheat or barley following corn greatly increases the risk of Fusarium.
5. **Residue makes a difference!** Fields with little or no residue on the surface freeze harder and faster than fields with heavy residue cover. You will be able to start earlier, but forced to quit more quickly, in fields with little residue cover.
6. **Perennial Weed control is important.** Fields that have been sprayed with a fall burndown (glyphosate) work best, with no dandelion, chickweed or quackgrass pressure. Frost seeded crops are 1 to 2 weeks ahead of normal crops, thus spring weed control must be completed earlier to avoid yield loss from weed competition. Leaving dandelions and other perennials uncontrolled until the 10th of May will cause unacceptable yield loss. However, annual weed pressure is significantly reduced (50%) when frost seeding, which may eliminate the need for herbicide application in some instances.
7. **Get it in the ground!** Your drill must be able to slice into light frosted soil and put the seed in the bottom of the trench. No till drills work best. Coulter style drills should have the narrowest possible coulter for best results. Aim for a 1 inch seeding depth (1/2 inch is still okay). Don't worry about closing the seed slot. The slot will close when the frost comes out the following day. Grower experience with broadcast seeding on the soil surface has been extremely variable, and in some cases disastrous. Get the seed in the ground!
8. **Keep your seeding rate up.** Trials have shown less plant establishment with frost seeding. Keep seeding rates at 1.6 million seeds/acre, or increase 10-20 % above this target. Seeding rates at the high end of the normal range will compensate for the lower establishment rates experienced.
9. **Use a starter fertilizer.** Trials have shown a yield response of 8 bu/ac to seed placed starter fertilizer. When the soil is cold, phosphorus is less readily available. Use a liquid or dry fertilizer with the seed, such as 50 to 100 pounds per acre of MAP. This might mean mixing the seed and the fertilizer together in the seed box.
10. **Use fungicide treated seed.** Seed germination and emergence is slower, increasing the value of seed treatments.
11. **Plant the headlands first.** Farmers who have done frost seeding will tell you that the wheel traffic lets the frost in even more, making the headlands difficult to plant into afterwards.
12. **Be prepared to topdress your nitrogen fertilizer, spray and harvest earlier.** Nitrogen should be applied before the 5 leaf stage. Annual weeds will be more advanced than traditional seeding dates. Frost seeded cereals will be ready to harvest about a week earlier than cereals seeded at a traditional seeding date. Delayed harvest can result in a lower grade.

