



LAKEVIEW ORGANIC GRAIN  
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## MANAGING SOYBEANS ORGANICALLY

Soybeans grow best in soils with a pH of 6.5 or higher. They make good use of carry over fertility from previous crops and can perform well when P is deficient or tied up by calcium or magnesium. Soybeans need high levels of K to produce maximum yields and grow strong stems to resist lodging.

When soybeans are grown on a field for the first time, the seed must be inoculated with rhizobium. After soybeans have been previously grown on a field, the soil may contain enough rhizobium to insure nodulation on soybean roots, but inoculant is very cheap compared to the cost of not getting good nodulation. It may help to 'double inoculate' or even to use soybean inoculants from two different sources to insure good inoculation. Both protein and yield are greatly reduced when beans are not properly inoculated. Inoculants must be stored carefully until they are used. Excessive heat or sunlight can kill rhizobium bacteria very quickly. Expiration dates should be checked to be sure that the inoculant is fresh. Seed should be kept out of direct sunlight and planted the same day that it is inoculated, and or it may need to be re-inoculated before it is used. Always use soybean Rhizobium inoculant – the other Rhizobium strains will not be effective.

Soybeans can be successfully planted in 30" rows, or in narrower rows on organic farms. Corn planters generally give the best seed placement and emergence but grain drills can be used with very good results under certain conditions. For early planting dates or when weed pressure is expected to be heavy, it is safer to plant in wide rows and plan to use both a weeder and a cultivator to control weeds.

With light weed pressure and later planting it is possible to drill beans with good results. If beans are drilled, use a drills with press wheels and adjustable depth control for the best results. When planting very late, yield per plant is less and weed pressure is much lower so increasing population and drilling beans maintains yield potential. Drilled soybeans should be blind cultivated with a weeder harrow just before emergence and again a week or so later before the canopy closes.

Soybeans should be planted 1" to 2" deep planted into moisture. They come up very quickly when the soil is warm, the seedbed is fine, the seed is placed correctly, and soil moisture is good. Extra time spent preparing a good seedbed and adjusting the planter pays off very well in less time spent battling weeds. In very warm weather, it is important to watch the crop carefully for emergence.

Soybeans must be weeded before they emerge but that is also when they are most vulnerable to damage from weeders. Small soybeans are most tolerant to cultivation and weeding in the hottest part of the day, they are most sensitive to weeding and snap off easily early in the morning. As the sun climbs higher and the soil becomes hotter, the little seedlings become 'rubbery' and harder to damage. In a good stand of beans, you can take out 2 or 3 plants per foot with the weeder without hurting yield. A properly adjusted and operated weeder will seldom do that much damage unless it is operated at the wrong time or the soil conditions are bad. It is far better to thin a stand than to let a lot of weeds escape early.

Taller bushy-type soybeans generally perform best in wide rows and lower populations. When white mold is a concern, wide rows help reduce incidence and severity of the disease. Large soybean varieties such as Vinton 81 and Boyd can be planted as thin as 125,000 seeds/acre or 7 per foot in 30" rows with good yields if the seed spacing is uniform. Shorter non-branching varieties may need to be planted in narrower rows at populations as high as 225,000 seeds per acre to achieve maximum yield. Keep in mind that seeding rates must be much higher to compensate for uneven seed spacing.

The number of seeds in a bag can be easily found by multiplying the seeds per pound by the weight of the bag. A 50# bag with 3200 beans per pound contains 160,000 beans. If the desired seeding rate is 150,000 seeds per acre, then you need to plant about 47# of seed per acre. Large seeded beans like Vinton 81 need many more pounds of seed per acre because of the very low number of beans per pound. With beans that are 2000 per pound, it takes 75# to get the same population as 47# of seed when beans weigh 3200 per pound.

As bean size gets smaller, most drills and planters plant more pounds per acre at the same setting. This makes checking your rate when you start planting a new lot of soybeans very important. Filling the planter boxes and planting until you run out of seed to see if the machine is set correctly can be costly either because of wasted seed or because of a too thin stand.

