

Rolling Soybeans

Rolling soybeans is gaining popularity within crop farming in order to minimize machinery costs by reducing damage caused by rocks or large root clumps passing through during harvest. To do this, farmers are either purchasing or renting land rollers to try on their soybean ground. Rolling soybeans is taking a large roller over the fields to compress rocks and root bunches into the soil, while leveling it out making the field smoother. Producers are beginning to adapt this practice because they can harvest the soybeans closer to the ground, which allows them to harvest more seed pods that are located lower on the plant. When producers are able to harvest lower on the plant, yields can increase slightly because there is less seed being left in the fields that could not be safely harvested before due to rocks and root bunches.

Currently there have been two studies conducted with rolling soybean ground. These two studies have been conducted by North Dakota State University and by Jodi DeJong-Hughes with the University of Minnesota Extension. Each of the studies concluded there was no significant difference in yields and the longer the time period between post-emergence and when the soybeans were rolled, the increased plant injury. The studies concluded the primetime for rolling ground is pre-emergence to reduce the plant injury risk, which is the highest as the first trifoliolate; however the injury risk increases significantly after the emergence of the cotyledon. After the cotyledon is present and if it would get damaged the plant can die because the growing point is no longer feasible. Rolling soybean ground prior to emergence can help increase the seed to soil contact and make growing condition more favorable and reduce injury risk; the disadvantage of pre-emergence rolling is the soil is more susceptible to soil-surface crusting and erosion. Producers who prefer to roll ground post-emergence increase the injury level; the most common injuries include cracked or broken stems and crushed leaves. Plants with damage have potential to die if the injury is below the cotyledons and are more susceptible to disease due to injuries. North Dakota State University Extension recommends to roll soybeans during the warmest part of the day because the plants will be less turgid, which will reduce the injury risk.

To get started rolling soybeans, there are two options available to producers. The first option is to rent a roller to try it to make sure it works for your operation; the second is to purchase the land roller. Renting the land roller at first may be the best choice if you want to try it first because they can cost between \$30,000 and \$40,000. Iowa State University Extension released their 2010 Custom Rate Survey and to rent or hire custom farmers to roll their land costs an average of \$6.55 per acre but ranges from \$3.00 to \$10.00. Depending on how many acres are going to be rolled, it would be beneficial to purchase your own land roller; over time it will pay for itself and when you are done using it, it could be rented to other producers or you could be for custom hire.

When considering whether to land roll soybean ground or not, it is beneficial to consider the consequences of not rolling it. The cost of renting or purchasing a roller can pay for itself in the long run. When you compare the cost of a rock missed while picking up rocks going through the combine versus land rolling soybean ground, the cost of the damage caused by the rock is going to be significantly more than the cost of rolling the ground.

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