

Long-term benefits of certified seed in soya bean production

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The seed that you use is the first of many farming inputs required to produce a successful soya bean crop. Failing at this first point in the production line, may compromise the value of all further inputs. It is thus vital that the starting point of your production is good quality seed of the best variety for your area.

Planting certified seed means that, at the very least, the minimum requirements for germination, vigour and genetic purity are met. Seed quality is a critical contributor to final yield, and consistently starting your crop off with certified seed is a sure way to improve yield and reduce risk over the long term.

Germination of seed

The first and most obvious contributor to good seed quality is high germination. It is possible to adjust the planting rate to accommodate the germination of a seedlot, but it is not the same as planting seed with high germination.

As we work towards precision farming, it becomes obvious that erratic plant stand has a negative effect on yield potential. The variability in the gaps between plants produced by non-emergent seed causes some plants to compensate for the extra space, leading to an increase in interplant competition. The net effect of elevated interplant competition caused by irregular germination is lower yield.

Importance of vigour

Low vigour is primarily a silent drag on yield, as reduced vigour is not always that apparent unless different seedlots are planted side by side. Vigour is a far more sensitive measure of seed quality than germination and it is more likely that the variability in the performance of different seed batches is ascribed to differences in vigour rather than germination.

As discussed, it is possible to partially mitigate the effects of suboptimum germination by increasing the planting rate, but the effects of low vigour are embedded

in the initial growth rate. Low vigour seed will magnify the effects of any early stress, such as cold conditions during emergence or the ability to tolerate herbicide applications.

Genetic purity

Certified seed needs to meet certain genetic purity measures. It is firstly a guarantee that the variety chosen is in fact the variety planted. The genetic purity of this chosen variety is also important because of the potential impact that even a small amount of mixing can have on the harvest process. Where varieties of different maturity groups are mixed, delayed harvesting and reduced grain quality are frequently the result. One of the most visible indicators of the level of farm-saved seed in an area, is the tell-tale signs of variable senescence as the crop nears maturity.

Most farmers would choose to plant a range of soya bean varieties as a method of risk mitigation. This allows for some optimisation of cultivars based on planting date and soil type. The latest plant breeding innovations are accessible only through the purchase of certified seed.

Considering that the genetic gain in soya bean development in a company such as Corteva Agriscience™ is in the order of 1 to 2% per year, it makes sense to relentlessly pursue the purchase of new cultivars over a protracted period in order to make a tangible difference to the profitability of soya bean on your farm. This, in addition to the risk benefits of tested germination and vigour, can make soya bean production a load-bearing partner in your long-term crop rotation strategy. 🌱



Photograph by the United Soybean Board.

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