Soya beans and maize respond in essentially the same way to heat units. The more heat units are available during the growth season, the later farmers can plant. In cooler areas planting should however take place earlier to ensure the best results.

Another factor that should be borne in mind is that soya beans should experience a certain number of dark hours per day, before they will convert from the vegetative to the reproductive stage. Since the flowering of soya beans is controlled by the number of dark hours they are exposed to, it is not possible to avoid the adverse effect of a midsummer drought by manipulation of the planting date.

Benefits of early planting date
- Soya beans have a particular need for dark hours which are influenced by the number of calendar days. An early planting date will lead to a larger plant. In turn, a bigger plant has more internodes and consequently more spikelets, resulting in increased yields.
- In the cooler eastern parts of the country, an earlier planting date leads to earlier ripening. This limits the risk of early frost damage in autumn.
- More rapid growth leads to earlier closing of the canopy over the rows, making weed control more manageable.
- This results in increased transpiration by the plants and a decrease in evaporation from the soil surface. The largest amount of available water is used to produce the yield.
- An early planting date results in bigger plants carrying pods higher above the ground. This makes harvesting easier and reduces wastage.
- An early planting date has a greater effect on yield than row spacing. Therefore, special planters are not essential.

Risks of an early planting date
- Cold, wet soil early in the season can cause severe plant population losses.
- The longer germination period of the seed, increases the time weed killers need to be active to successfully control weed.
- Late frost can cause damage.
- In warmer regions, an early planting date can result in excessive vegetative growth which can cause toppling over.

The interaction between daylight length and temperature in flower stimulation, has a major effect on the ideal planting date. The impact is much greater in moderate to warm production regions than in cooler ones. In the cool regions, the 4.5 to 6.5 growth classes are best adapted.

The ideal planting date for the areas is from the beginning of October to the beginning of November. The shorter growth classes (4 to 5) normally have a lower dark hour need than the longer ones. Therefore, it is better to plant the growth class 6 cultivars very early and the growth classes 4 to 5 cultivars in mid-October.
If the weather does not permit a normal planting date and enforces a late one, it is better to start with the faster growth classes and to plant the longer growth classes afterwards. Any planting after the end of November is regarded as late.

Growth classes 5 to 7 are best adapted to moderate areas. The western part of the moderate regions usually receive rain later in the season, where it is better to plant 6 to 7 growth class cultivars. In the hot production areas, any growth class can be planted. However, the full season cultivars usually have the best yield in these regions.

**Ideal soil temperature**
With earlier planting dates, the soil temperature can play a major role in effective germination. Soya beans can germinate at 10°C, but the ideal soil temperature is 13°C for strong germination. If planting is done early in the cool production areas, it is advisable to measure the soil temperature before planting commences.

**The interaction between daylight length and temperature in flower stimulation has a major effect on the ideal planting date.**

Measure the temperature at 07:00 at a depth of 5cm, and if the temperature is higher than 13°C for at least three days in a row, planting can commence. Bear in mind that cold fronts or a hail storm can cause the soil temperature to drop drastically.

A few management aspects have to be addressed to make the best of a late planting date. Yield is determined by the amount of sunlight that can be intercepted. Soya beans that have been planted late, have a shorter period to absorb sufficient sunlight.

It has a particular impact on the grain filling stage when the days shorten. The plants themselves are smaller, with fewer nodes where pods can develop. That is the reason why soya beans that have been planted late must be managed to absorb more sunlight for maximum production.

**Managing a late planting date**
- By using narrow rows, more sunlight is captured at the beginning of the growth season for vegetative growth, and more internodes are produced per hectare.
- With the narrow rows, the plant population must be increased by 25%.
- A late planting date is normally associated with damper soil. Avoid compaction and ensure that seedlings emerge swiftly and grow strongly.
- Pythium is extremely destructive with regard to plant population in hot, wet conditions. Ensure that seeds are treated with a fungicide to protect the population.
- Plant the recommended growth class for a normal planting date for the specific area, as a shorter growth class cultivar undergoes the trial stages more swiftly, reducing the number of nodes.

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