



## SOYA BEANS

Soya beans are a very good cash crop and rotational break crop for maize, sorghum, millet, wheat, etc.

Soyas respond very well to residual fertiliser (fertiliser applied to previous crops). On our farm we put extra fertiliser on our maize and wheat (both of which prefer applied fertiliser) and then none on the soyas. The soya beans manufacture their own nitrogen through nodules that grow on their roots. For these nitrogen making nodules to develop there has to be a fungus called rizobium in the soil. The virgin soil in our region of Africa does not have this rizobium present so the rizobium has to be dressed onto the seed at planting. If you continue using soya beans in your rotation, after 2 or 3 years of dressing the seed, the levels of residual rizobium in the soil build up so that you don't have to apply it to the seed any more.

Soya beans is an easy crop to grow except that there are two critical operations that must be done at a very high standard.

1. Germinating soya bean seeds do not have much pushing power. If you plant them too deep in soft soil, they can open up and make leaves under the soil, and die. If you plant them at 4cm and you get heavy pounding rain followed by hot sun, the soil forms a hard crust and soyas 'break their backs' trying to push through the soil and die.

∴ **It is very important to plant your soya seeds shallow** at a depth of between 1cm and 2cm (the thickness of a matchbox).

It is better to plant at ½ cm than 3 cm, unless you have very soft soil with lots of mulch.

2. The rizobium fungus is a living organism that is very sensitive to high temperatures and dry conditions.
  - **It must remain cool and moist at all times!**
  - Try not to buy your soya rizobium more than 6 weeks before planting.
  - It must be kept in a fridge and not a deep freeze.
  - It can be kept in a cool thatched building in a box covered by a sack that is kept moist.

The rizobium comes in some soil in a small sachet packet.

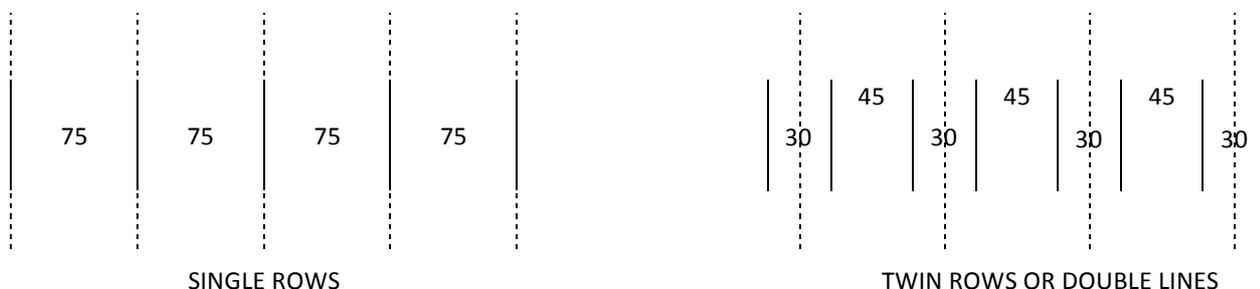
### How to Plant with Rizobium

- On the same day of planting mix the rizobium into the seed.
- Mix the contents of the rizobium sachet (packet) with 1 litre of water and two tablespoons of brown (or white) sugar or molasses.
- Take your seed and put it in a drum.
- Then pour the mixture onto the seed and thoroughly and gently mix it onto the seed until each seed is coated with this slightly sticky mixture.
- Then keep the seed in the shade and plant into moist soil within six hours.

It is almost useless to plant soya without inoculant because the yield will be low, the crop will not canopy and the weeds will have lots of sunshine to grow.

## Soya Bean Spacing & Plant Populations

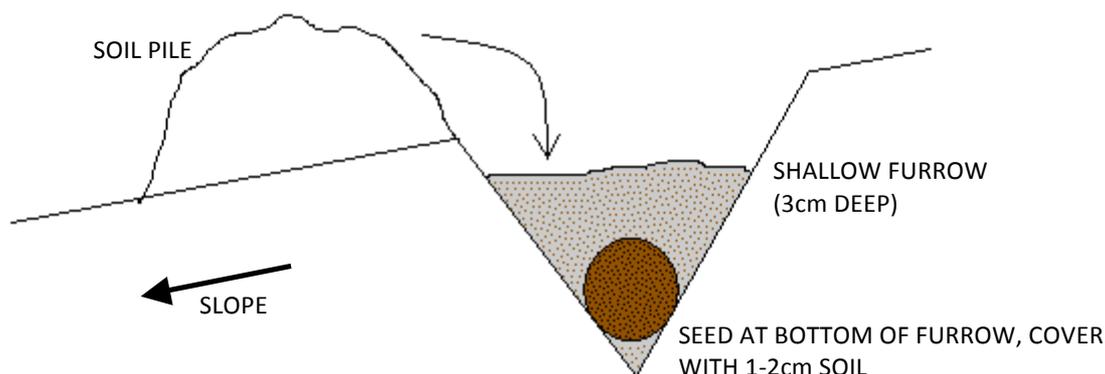
It is quite ok to plant soya beans in exactly the same rows as your maize at 75cm row spacing. If you want, you can plant a double line of soya 15cm either side of your maize line. This will mean that these 2 rows will be 30cm apart from each other and 45cm apart from the next twin line.



Double lines are almost twice as much work to do. If you can't get inoculant or you have a dwarf (short) variety, then it is better to use double lines.

## Planting

Make shallow furrows with the soil mound on the down slope side.



## Plant Population

The ideal population is 300,000 plants/ha (germinated and emerged). To get this, plant a total of 400,000 seeds/ha. This means that you must carefully dribble 30-33 seeds per metre into the bottom of the furrow. Try and space these seeds as evenly as you can about 3 to 3.3cm apart in the furrow. Do the best you can, but don't be too slow otherwise you may miss your rainfall opportunity and the soil may get too dry to plant.

## Summary

- Remember that the two critical factors for growing soya are **careful shallow covering** and **careful inoculant management**.
- Otherwise the weed control is the same as for the maize (the 3 laws).
- Harvesting must be done on time before the beans get too dry and shatter by themselves.
- It is a simple and very rewarding crop to grow!