



**GROWING SOYA BEANS**

**AIM: TO PROVIDE INFORMATION ON GROWING AND USING SOYA BEANS FOR MAKING CONCENTRATES FOR DAIRY COWS.**

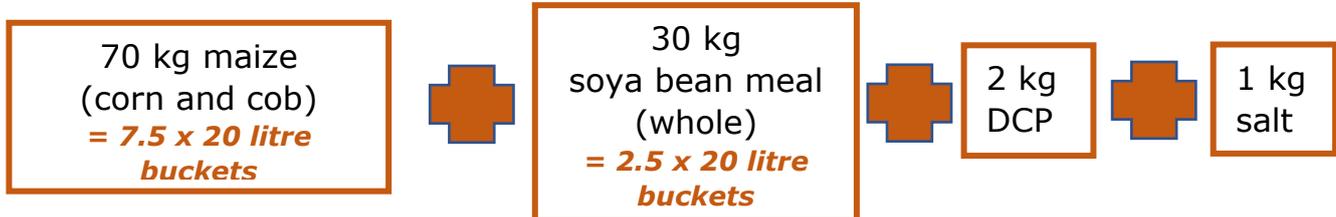
Soya beans grow in most of Zambia except areas where low rainfall can limit production, e.g. South of Monze, and Western Province.

**1. Why would a farmer grow Soya beans?**

- Soya bean is a rich source of protein for humans and animals. It can also produce oil for sale or human consumption.
- Oil extraction leaves a '**soya bean cake**' which is an excellent feed for cattle. This can be mixed with energy sources (e.g. maize) to produce a home-made dairy meal, e.g Dairy 19.
- Whole soya beans can be used to make a concentrate supplement for cattle (*see below*). To improve digestion, it is **recommended to break the beans**.



**Recipe to make 100kg of Dairy 19: Remember to mix well!**



**2. Some current Soybean varieties on the Market**

Variety	Supplier	Days to 50% flowering	Time to Maturity	Expected yield (kg/ha)
Magoye	ZAMseed		Late	2,000
Mila	Mila	45-50	Medium	900
SC Scribe	Seedco	< 35	Late	5,800
Pan 1856	Pannar seeds	-	-	1,500
Hernon 147	ZAMseed	40-44	Late	1,500
SC Edamame	Seedco	< 35	Early	-

**3. Preparing for planting**

- ✓ Prepare the field early.
- ✓ Adopt soil conservation practices (pot holing, crop rotation, retaining crop residues) to enhance soil fertility.
- ✓ Avoid growing soya bean after tobacco and potatoes as soya bean is a host to nematodes. It is best to rotate with cereals, e.g. maize, sorghum and wheat.



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### 4. Preparing the soil nutrients

- ✓ Soya bean is an efficient nitrogen builder provided the soil environment supports bacteria growth;
- ✓ Soya beans prefer pH 5.0-5.2;
- ✓ In acid soils, soya beans will not do well, so apply agriculture lime;
- ✓ Even though soya beans fix Nitrogen, it is recommended to apply a limited amount of fertilizer to boost crop establishment. Apply one bag of D compound per lima at planting.
- ✓ **NOTE** some varieties need to be planted with inoculum for best results (nodulation).

### 5. Planting

- ✓ Best to plant mid to end of December once rains are stable;
- ✓ Seed rate of 80-100 kg/ha;
- ✓ Can be planted on ridges/furrows spaced at 75cm between rows and 25 cm between plants in a row;
- ✓ Can be planted by hand or drilling.
- ✓ Plant 7 seeds per station and place seeds at 2-3 cm depth;
- ✓ Control weeds by hand or herbicides.

### 6. Harvesting, handling and storage

- ✓ Harvest when mature seeds, pods and the stem turn yellow;
- ✓ Ensure at least 13 to 14 % moisture at harvest. A well dried soya bean will easily split into 2 when tapped by a hammer;
- ✓ Dry soya beans crack easily. To minimise harvesting losses:
  - **Avoid excessive impact** of grain on hard surfaces.
  - Shattering is more likely the longer mature beans stay in the field.
- ✓ Keep stored grain dry and cool to prevent mould and attacks by insects.
- ✓ Soya beans gain moisture quickly. Ensure storage areas are well aerated to prevent moisture affecting beans.
- ✓ Can store in cloth bags and cardboard boxes.

The ZDTP is focused on supporting dairy farmers to improve their productivity, milk quality and linkages to urban markets. The views expressed in this publication are those of the implementers of the programme and do not necessarily reflect those of the New Zealand Government. For further information, please contact ZDTP Country Manager Tania Thomson on [tania@primeconsultants.net](mailto:tania@primeconsultants.net) or +260 96 456 4206