Scientific Growing for Abundant Harvest

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i) Maize and soybeans are the suitable crops to be intercropped.

ii) After every two rows of maize, sow three rows of soybeans. Adopting a sunlight-parallel planting orientation combined with compact corn cultivars can effectively reduce light competition in corn soybean intercropping systems.



iii) Planting maize for two consecutive years and then planting soybeans in the following year in the same field improves productivity.





iv) It is not advised to plant soybeans continuously on the same piece of land.

v) It is important to maintain the soil moisture.

vi) Before sowing soybeans, the field should be prepared during the dry season by plowing, harrowing, leveling and rolling to smoothen the soil.

vii) Irrigation should be limited during rainy seasons.



viii) Seed germination is a resultof selection of high quality seeds.It is therefore advised to usedisease-free and high qualityseeds in order to get high yields.



ix) It is not advisable to use seeds kept from your own harvest.

x) To guarantee germination, seeds should be dried up for three days before sowing and should not be left outside at night to get moist. xi) Different varieties of seeds are fit for different soil types.

xii) The sowing seasondepends on the climaticcondition of a particular area.





xiii) Spacing should be decided according to the variety of seeds.

xiv) Soybean plants with thick leaves and big stalks need wider row spacing than soybean plants with small stalks and narrow leaves. xv) The depth of sowing should be kept at a little more than 3cm.

xvi) The moisture levels should be decided according to the soil types; rolling the soil after sowing should be done timely so that seeds can absorb adequate water and germinate quickly.

II Technical Keys to Soybean Cultivation

P roduction of soybeans depend on climatic conditions, selected areas for growth, land preparation, seed varieties, use of manure or chemical fertilizers, weeding, and control of pests and diseases.

i) Varieties of soybean

a) There are different varieties of soybean produced in Tanzania.

b) These varieties differ in growth and yields.

c) Farmers should select the variety which is favorable to a particular area.

d) The varieties which mature earlier should be planted in areas with short rains.

(Note: Uyole soya 1, Uyole soya 2, Uyole Soya 3, Uyole Soya 4, Bossier, Kaleya, Semeke etc.)





21~32°c



ii) Climatic condition

a) Soybean is favourable at the temperature between 21-32°C, higher temperatures cause stunting growth and poor production.

b) Soybean grows well at an average altitude of 2000 m above sea level.

c) Seeds germination depends on soil moisture. Soil should be moist enough for rapid germination of seeds. Soybeans also need rainfall between 400-500 mm per year.

d) In case of excessive rainfall, drainage should be made to prevent roots or flower rot.



iii) Selection of the planting area

a) The land should have deep soil and non-water lodging area (loam soil); the area should be clean and free from shrubs.

b) The area should be free from invasion of pests and diseases from the past history.

c) The farm should be properly prepared in order to reduce growth of weeds.

d) Soybeans grow favorably in soils with pH of 4.5-8.5.





iv) Land preparation

a) Prepare the farm by tilling up the soil and remove all undesirable things in the farm like weeds; it is important to follow the crop calendar and rain pattern.

b) Plant soya in ridges or in lines; planting seeds in lines helps to apply agronomic practices easily like weeding, spraying (and to have standard plant population in the farm so as to increase income).

v) Planting soybean seeds

a) Plant early at the beginning of rain season or plant the seeds when the soil has enough moisture.

b) Plant spacing depends on the variety of seeds (tall varieties use a spacing of 10 cm x 50 cm or 10 cm x 60 cm depending on the fertility of the soil).

c) After putting seeds into holes, cover the seeds with the soil properly (make holes of 2-5 cm depth; seeds required per acre range from 10-12 kg).



d) Test the germination percentage of seeds before planting (soya seeds viability drops from 6-10 months after harvest depends on the temperature and storage facilities).

e) Never plant soy beans for 2 years in the same field, which will help to destroy disease cycle in the soil.

f) Soybean should not be followed with common beans or sunflower crops in rotation otherwise soybean can be easily affected by white fungal diseases.





vi) Fertilizer requirements

a) Soybeans as other crops need fertile and non-water logging soil.

b) If the field is not fertile it is important to plant with fertilizer.

c) Phosphorus fertilizer helps to make roots strong and assist plant growth.

(Note: Industrial fertilizers which are recommended to use are DAP [Di Amonium Phosphate] 1 bag of 50 kg per acre or TSP [Triple Super Phosphate] 1 bag of 50 kgs mix with 15 Kgs of CAN [Calcium Amonium Nitrate] per acre.)



vii) Weeding

a) First weeding should be done 2-3 weeks after seed germination; the second weeding should be done before flowering. b) Weeding should be done
by removing weeds in the
farm and slight earthing up
of plants; if soybean plants
have covered all the soil you
can uproots the weeds and
this will help to suppress
weeds in the farm.





viii) Diseases and Pests

a) Soybean crop is not affected much by diseases; it is important to use safe seeds (which are free from diseases or pests) and to adopt recommended agronomic practices.

b) Antifungal chemical (fungicide) especially Ridomil can be raining-sprayed to kill fungi. Follow the usage instruction also to control leaf rusts.

c) It is advised to follow good agricultural principles and contact Agricultural Extension Workers to get advice on what kind of pesticide to be used when need arises.





i) It takes 3 to 5 months for soybeans to mature and be harvested depending on the variety of soybean, location of the farm (agroecological zone)and management of the farm. ii) If you delay to harvest soybeans, pods burst in the farm and may result to great loss.

iii) Harvesting can be doneby uprooting or cutting plantstems near the ground leveland be stored after drying.





iv) A good harvest can be guaranteed with soybeans kept full when threshing pods.

v) It is important to harvest soybeans as soon as they mature and when pods start to dry. It is also recommended that, harvesting should be done early in the morning when soybean plants are still wet with dew to prevent pods from bursting (Water content of soybean during harvest should be 12-14%; productivity range from 600-1000 kg per acre depending on conditions in the farm; leave the beans to get dried and have the moisture content of 12 % before storage).





i) Store soybeans seeds kept in bags in a dry and clean store rooms.

ii) Keep the bags on pallets or straws to avoid the bags direct contact the floor.

iii) The room should be dry and not moist; the roofs and walls should prevent rains.

iv) The room should be sealed to avoid entering of dust, insects and rats, their presence will quickly destroy the harvest in the store.









i) Soybeans can be processed and made into many food products.

ii) Bean curd (tofu), soymilk, soybean sprouts, soy flour and soy biscuits are the most popular soybean food products.

iii) Soy milk should be boiled before drinking.

iv) Soy milk might cause allergy if it's not properly boiled.

v) Soy pulp can be used to makedelicious dishes by steaming or othercooking techniques.

Steps to make soy milk:



Step 1. Soak the soybeans for 3 to 8 hours (the water should cover the top of the beans); rinse the soaked soybeans.



Step 2. Grind the well-soaked soybeans with water using a blender.



Step 3. Strain the blended soy milk by using cotton cheesecloth to separate the soy milk and soy pulp.



Step 4. Put water into the soy milk and boil it for 5-10 minutes. Ensure that it is properly boiled. After which, you can now enjoy your drinkable soy milk.



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