

# String Bean growing lesson



**String Bean** is one kind of crops that farmers like to grow and eat because it is delicious and has many substances for supporting our organs such as water substance, proteins, lipid, carbohydrate (CABOUN EDRAT), and Calcium.

## 1. Seed selection

Selecting seed is the first important factor for growing to limit yields and demanding of the market.

The important factors which have to choose as followings:

- 1- Seed is from clear sources (domestic or hybrid seed)
- 2- Age of seed is right.
- 3- Seed can germinate well from 85 - 90 per cent.
- 4- Seed is pure and good.
- 5- Seed is resistant with the weather, insect, and diseases.
- 6- Hybrid seed cannot keep growing continuously.

## 2. Techniques of growing

### 2.1. Preparing the soil

- 1) Hoe or plough and dry the soil up for 10 - 15 days and then do it for 2 - 3 times.
- 2) Hoe or plough the soil 20 - 25cm in deep, hit the soil to become finely and then pick up the grass so that makes the soil clean.

### 2.2. Raising the ridge

- 1) Make ridge width from 0.8 - 1m, and ridge length is depending on possibility.

2) Raise height of ridge in dry season from 15-20 cm.

3) Raise height of ridge in rainy season from 20-30 cm.

4) A ridge to another is spaced out 30 cm.

5) Use 0.5-1kg of compost a hole and mix together, soil and compost, and then rake it evenly.

6) Dig holes 15-20 cm in deep as 2 lines in between a clump to another from 40-50 cm and in between line from 60-70 cm.

### **2.3. How to grow**

#### **A. Growing seed directly**

- Dry seed with sunlight for 1-2 hours and then soak in the clean water for 3-4 hours.
- Have to keep seed hidden for 1 night so that seed is quick to germinate.
- Use 0.5 kg of compost a hole.
- Put 2 - 3 string bean seeds to grow in a hole with 3 cm in deep.
- Sprinkle fertile soil and debris of dry straw a bit on the hole and then water string bean wetly in the morning and in the evening.
- After growing for 15 days, have to pull some weak young string bean out and keep strong and good one for 2-3 trunks of string bean a clump.

#### **B. Germinating young string bean**

Young string bean is germinated by using plastic bag or bowl make from banana leaves with filling mixture soil as followings:

- 50 per cent of compost or dung animal fertilizer
- 25 per cent of termite soil or fertile soil
- 25 per cent of finely sand

- Put 2-3 string bean seeds into the bag or bowls of banana leaves and then water wetly (bottom of bag or banana-leaf bowl is water-leaky).
- After germinating for 6-7 days, string bean has 2-3 leaves, can take it to grow.

### **C. Growing young string bean**

- Dig holes in 2 lines in between a hole from 40-50 cm and in between lines from 60-70 cm.
- Grow 1-2 trunks of young string bean a hole.
- Take debris of short straw to cover on base of string bean after growing is finished so that protect moisture and then water it wetly and immediately.

### **3. Taking care of string bean**

#### **3.1. Eliminate grass, scarify soil, and pile up the bed of string bean**

- ☺ The 1<sup>st</sup> time: Do it after growing string bean for 10-12 days.
- ☺ The 2<sup>nd</sup> time: After scarifying the soil for 15 days or string bean is 25 days.
- ☺ The 3<sup>rd</sup> time: Do it when string bean is 40 days that means just cut off the grass even to the ground or pull weeds including their roots, no need scarifying the soil at base of string bean.

#### **3.2. Using fertilizer**

Use 0.5-1kg of compost fertilizer for putting at bottom of a hole.

#### **3.3. Making trellis and cutting branches**

- ☺ Take young trees or bamboo 2 - 2.5metres in length to make trellis for string bean climbing.
- ☺ Push trellis in the ground with face to face when young string bean having growth, 4-5 leaves with 15 - 20cm in height.

☺ After growing for 20-25 days or when string bean budding suckers and have to tie suckers with its trunks or tie to trellis.

☺ Have to cut and clean small branches and keep main branches when string bean is 20-25 days.

☺ Cut off the old leaves with illness so that reduce contagiousness of diseases shelter of insects and sucking the nutrient from the ground.

### **3.4. Watering string bean**

- ☺ String bean needs water daily but does not need accumulating water in the field.
- ☺ We have to water for 2 times a day in the morning and in the evening.
- ☺ Irrigate water for 2 times a week according to situation of the ground and weather.
- ☺ Have to check the soil whether having good moisture especially when string bean starts flowering until harvest the result.

## **4. Harvesting**

- We can harvest when string bean is 60-75 days after growing according to kinds of seed.
- Harvesting is to do it in the afternoon.
- Do not pinch (pick up) fruit under the branch stem (on the kernel of string bean) because it cannot keep string bean for a long time or quick to swell and should not cut including branch stems because will make it unable to flower any more.
- Pick up fruits softly and put in the shade because it can sweat and become yellow and it causes infection.
- We can harvest from 15-18 times in growing season.

## 5. Keeping seed

☺ Do not keep seed (string bean fruit) that is near the ground is to keep any seed high from the ground, long and good panicle (fruit) without disease and destroying from other bugs.

☺ Select panicles of string bean in the 2<sup>nd</sup> to 4<sup>th</sup> generation and keep only 2 or 3 panicles a trunk of string bean and keep it to get ripe and dry on the its trunk, and then pick it up and dry it up.

☺ Split it so that make seed out and take seed to dry up again for 2-3 hours.

☺ Pour those seeds into the bottle (keep it 1/3 of bottle) or cloth bags and tie or close and keep in the safe place and there is enough air to exit and entry.

☺ Dry up seed for 3 or 4 months once, once 2-3 hours so that seeds good health to keep growing for a long time in case that seed is very dried in rate of moisture from 12-13 per cent.

 *Thank You!* 

## Short Spinach growing lesson



### 1. Techniques of growing Short Spinach

#### 1.1 Preparing the soil

- Plough, harrow and dry the soil up for 10 - 15 days and do it 25-30cm in deep.
- Plough up and down for 2-3 times so that grass and other plants return down and it gets rotten and become fertilizer, kill worms and bugs in the ground and one more makes soil loose and have good oxygen.

#### 1.2 Praising the ridge

- Make 1 m of ridge width, 10 metres of ridge length or depending on possibility.
- A bed to another one is spaced out 35-50 cm and a clump of short spinach is spaced out 20 cm (2 Toeks in Khmer) for bed width= 1m, can grow 3-4 lines.
- In rainy season, raise 20-30 centimetres of ridge height as turtle shell or higher than this according to situation of land.
- In the dry season, height of ridge is 15-20 cm as a hollow bed in the middle.
- Use 10-15 kg of natural fertilizer or compost for putting at the bottom of ridge and then mix with soil in that ridge.

#### 1.3 Growing Short Spinach

##### A. Sowing seed

- Dry seed with sunlight for 20-30 minutes and then soak in the water for 3 hours, and then keep hidden for 1 night so that makes seed quick to bloom.
- Prepare the seedbed well, hit soil finely, and mix together and completely, seed and 4 shares of sand, and then sprinkle seed in the seedbed loosely.

- Sprinkle ashes around the seedbed to protect ants taking seed out.
- Anyway, when already making bed, take seed that has soaked in the water and already kept hidden to sow in bed after sprinkling debris of straw on it and then water it.

### **B. Pulling and planting short spinach**

- Planting short spinach when it is 10-15 days or when it has 3 or 4 leaves.
- Stop watering for 2 days before taking young short spinach to plant so that makes it patient with sunlight.
- Before pulling, have to water on seedbed of young short spinach wetly so that is easy to pull to plant.
- Have to pull young short spinach quickly after watering.
- Plant a clump of short spinach to another one in between 20 centimetres and space of ridge is 35-50 centimetres.
- Have to cover young short spinach for 2-3 days to protect from sunlight.
- If there is rain falling down very wetly in the bed, have to drain water out.
- Have to increase quantity of watering from planting until harvesting.

## **2. Taking care**

### **2.1 Eliminate grass and scarify soil**

☺ Cleaning grass is to do by hand, spade, hoe and bamboo strip to scarify soil. This way is easy to practise around the bed and space of bed.

☺ Cleaning grass and scarifying soil is to do it when young short spinach is 10 days and do it carefully, don't touch root of short spinach because it will cause short spinach is weak, fade or dead.

## 2.2 Watering short spinach

☺ Water short spinach 2 times a day in the morning and evening.

☺ If there is rain falling down heavily in rainy season, have to water it to wash soil that is dirty with core of short spinach as a cause makes rotten.

## 2.3 Using fertilizer

Use 0.5-1 kg of compost fertilizer for a square metre of a surface of land and then water short spinach wetly.

## 3. Harvesting

○ Harvesting is to do in different ways, can pull including root of short spinach or cut only its trunk. This is depending on demanding of the market.

○ Before cutting or pulling short spinach, have to stop watering so that it dries to protect bruising or scrapings of short spinach.

○ Short spinach can harvest when it 30-40 days for short spinach that sows seed directly and 40-50 days for planting young short spinach.

○ Harvesting yields can use a small knife for cutting base of short spinach.

○ Short spinach can be harvested in the morning or evening and put it in the shade and keep it in the basket or case with putting banana leaves at the bottom of basket, also.

○ Yields in average are in between from 16-20 tons a hectare, but it depends on growing taking care and kind of seed.

 **Thank You!** 