



## **Best practices to maintain high yields and grain quality of soybean**

*A checklist prepared by the N2Africa Project for farmers in west Kenya*

### **Plan ahead and prepare the land well ...**

- Rotate soybean with maize or sorghum for soil fertility benefits and disease control.
- Select fertile to moderately fertile land, with no water logging.
- Prepare land well to create a uniform seedbed with no weeds.
- Obtain SYMPAL (0-23-16+) or another proven fertilizer for your soybean. Do not apply nitrogen to the soil as soybean nodules will fix nitrogen from the air.
- Obtain BIOFIX inoculant and store it in a cool, dark and dry place.
- Obtain quality seeds of the soybean variety recommended to your area and acceptable to target markets.
- Test the seeds for germination and plant only when germination is above 80%.

### **Plant on time and at the proper spacing and depth ...**

- Plant on time, when the soil is moist at onset of first rains; roots will not grow into dry soil and will not survive in water logged soils.
- Inoculate soybean with BIOFIX inoculant using the right procedure for maximum N<sub>2</sub>-fixation.
- Plant three cm deep right after inoculation at a row spacing of 45 cm with 5 cm between seeds. This spacing requires between 20 to 25 kg of seed per acre depending on seed size.
- Apply SYMPAL fertilizer at 50 kg per acre and ensure clusters of fertilizer do not touch seeds.

### **Closely manage and monitor crop development ...**

- Inspect the field regularly for presence of weeds, pests and diseases.
- Keep the field clean of weeds by weeding well and on time.
- Use recommended fungicides and insecticides according to instructions.
- Spray recommended fungicide at recommended rates, first at flowering and spray once again as recommended, usually 21 days after the first spraying.
- If insect is observed it is not recommended to spray damaged leaves, but if pods are being damaged, particularly by flower thrips, seek advice on treating with insecticide.
- Maintain application records (date, target pest, pesticide name, and area treated).

### **Harvest on time and clean the grain to industry standards ...**

- Harvest early when 90-100% of pods are brown and dry, but before they are brittle and shatter.
- Dry harvested crop in the open sun but protect it from the rain.
- Thresh and separate soybean seeds on a clean surface such as a tarpaulin.
- Clean the grain and re-dry to a moisture content of 11-12%. Soybeans with greater than 13% moisture are likely to mold, and grain below 11% is subject to cracking.
- Ensure that soybean grain does not contain live insects, has no objectionable odors and contains no foreign materials, particularly small stones.

### **Protect grain quality and market your soybeans ...**

- Put clean, dry grains in clean bags, do not use recycled fertilizer, pesticide or other chemical bags. N2Africa marketing project grain bags, however, may be reused up to five times.
- Store grain soybean in a cool, dry and ventilated place.
- Deliver grain to your nearest project collection point on time. Every farmer is held responsible for meeting buyer's grain quality standards.
- Report information on soybean variety and payment method to collection point manager.
- Allow seven days for payment of soybeans after their acceptance at collection point.



## Mbinu bora za kuongeza uzalishaji wa Soya, mahindi na Mtama

### Kujitayarisha kwa kupanda...

- Badilisha soya na mahindi au mtama ili kuimarisha rotuba ya udongo na kuzuia magojwa.
- Panda soya kwenye shamba lenye rotuba, lisilokuwa na vidimbwi au chemi chemi za maji.
- Tayarisha shamba vyema kwa kuhakikisha kwamba hakuna kwekwe.
- Tafuta mbolea aina ya SYMPAL (0-23-16+), ama mbolea inayofaa kwa upanzi wa soya yako.
- Tafuta bacteria asilia (Biofix). Iweke mbali na jua na unyevu.
- Tafuta aina ya soya iliyopendekezwa kupandwa katika eneo lako.
- Jaribu mbegu ya soya kama inamea kabla ya kupanda ili kuthibitisha kwamba asilimia zaidi ya 80 inamea.

### Wakati wa kupanda...

- Panda kwa wakati ufaao, hakikisha mchanga una unyevu wa kutosha hasa sana wakati wa mvua za mwanzo. Mizizi ya soya haiwezi kustahimili mchanga mkavu ama machanga wenye chemichemi.
- Changanya soya na bacteria asilia (Biofix) huku ukifuata maagizo.
- Panda mara moja baada ya kuchanganya bacteria ya asilia kwa nafasi ya sentimita 45 kwa pango hadi jingine na sentimita 5 mmea hadi mmea mwingine.
- Panda soya ukitumia mbolea ya SYMPAL kwa kiwango cha kilo 50 kwa ekari moja. Hakikisha ya kwamba mbolea na mbegu haziguzani.

### Wakati mmea ungali shambani...

- Kagua shamba kila mara. Hakikisha kwamba hakuna kwekwe wadudu waharibifu na magonjwa.
- Hakikisha ya kwamba shamba lako halina kwekwe kwa kupalilia vizuri na kwa wakati ufaao.
- Tumia dawa iliyopendekezwa ya kuzuia magonjwa na wadudu.
- Tumia dawa ya kuzuia magonjwa iliyopendekezwa, kwa kiwango kilichopendekezwa, wakati soya inapoanza kuweka maua. Rudia kunyunyizia dawa, kulingana na maagizo, mara nyingi huwa siku 21 baada ya kunyunyiza mara ya kwanza.
- Ikiwa wadudu wataonekana kwenye mmea, haipendekezwi kunyunyiza majani yaliyo athiriwa. Lakini ikiwa mizoga imeliwa au maua, tafuta ushauri kabla ya kunyunyiza.
- Weka rekodi za kilimo zikionyesha siku ya kunyunyiza, jina la mdudu, jina la dawa uliotumia na pahali uliponyunyiza.

### Wakati wa kuvuna...

- Vuna mapema wakati asilimia 90 hadi asilimia 100 ya mizoga imekauka na kubadilika kuwa rangi ya hudhurungi lakini kabla haijaanza kupasuka.
- Kausha mmea uliovunwa kwenye jua. Zuia isinyeshewe na mvua.
- Gongga soya na kuondoa uchafu ukiwa umeziweka mahali safi kama mkeka.
- Ondoa uchafu kwa mbegu ya soya na ukaushe hadi mbegu ziwe na unyevu wa asilimia 11-12 kwa sababu soya zilizo na unyevu zaidi ya asilimia 13% huenda zikaoza. Ukikausha zaidi ya asimilia 11 mbegu zitapasuka.
- Hakikisha kwamba nafaka ya soya haina wadudu walio hai au harufu isiyo ya kawaida.

### Kuhifadhi...

- Weka soya iliyokauka kwenye gunia safi, usitumie gunia ya mbolea ama ya dawa ya wadudu au iliyotumika kuweka kemikali zingine. Gunia ya mradi inaweza tumiwa zaidi ya mara moja.
- Tunza/ hifadhi Soya mahali palipo kauka na penye hewa safi.
- Peleka nafaka katika kituo cha ununuzi kwa wakati unaofaa.
- Hakikisha maelezo yote katika gunia ni sawa, hasa tarehe, aina ya soya, mahali au sehemu na mkulima.
- Ruhusu siku saba ili upate malipo yako baada ya soya yako kukubalika kwenye kituo cha ununuzi.