



# Recommendations for Cassava Sweet Potato Intercropping



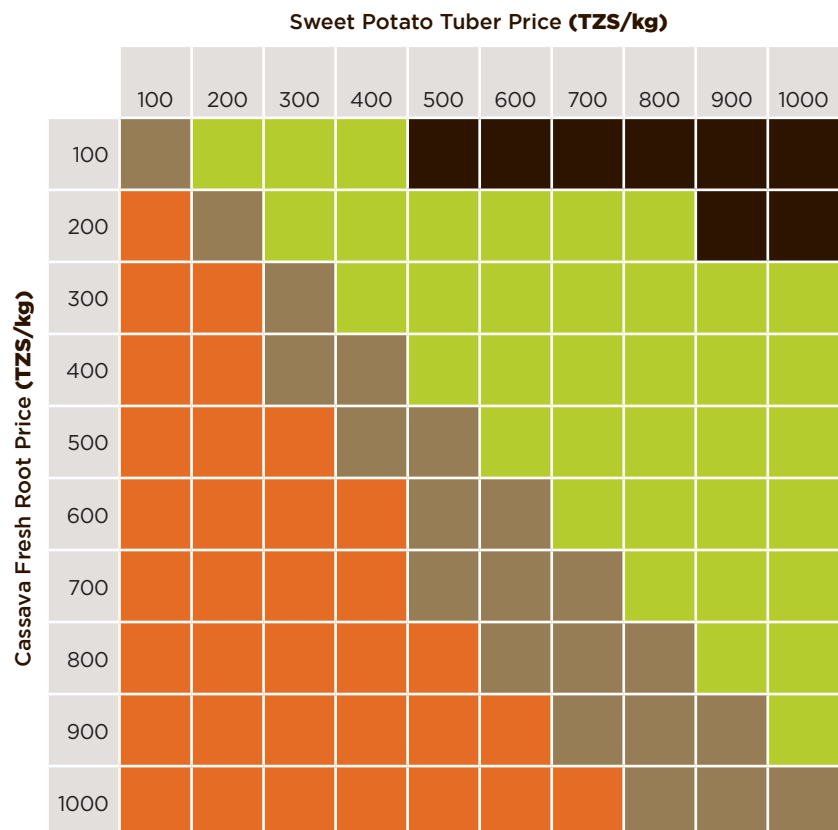
## STEP 1: Decide if Intercropping is More Profitable

Intercropping will reduce the yield compared to a monocrop by approximately 40% for cassava and 20% for sweet potato.

Intercropping with sweet potato will be more profitable than sole cassava cropping if the value of the sweet potato intercrop exceeds the value loss from the reduced cassava yield.

Use the diagram to evaluate whether intercropping is profitable based on the expected price for cassava roots and sweet potato tubers.

- Intercropping with sweet potato will reduce total revenue. **Plant cassava as a monocrop.**
- Intercropping with sweet potato slightly increases total revenue. **Consider intercropping if you require early income from sweet potato.**
- Intercropping with sweet potato substantially increases total revenue. **Intercrop cassava with sweet potato.**
- Sweet potato monocropping gives the highest total revenue. **Plant sweet potato as a monocrop.**



## STEP 2: Choose The Right Varieties and Best Planting Arrangement

If you have decided to intercrop cassava with sweet potato, then plant as follows:

Plant an improved cassava variety like Kizimbani, Mahonda or Machui. We recommend obtaining disease-free cuttings from an accredited source to ensure a clean and healthy cassava crop. Plant cassava in rows on ridges that are 1 m apart and plant cuttings at 1 m within the row (planting density of 10,000 cassava cuttings per hectare).

Plant an improved sweet potato variety like Mayai, Kabodea or Mataya. We recommend using clean planting material from healthy plants, to control weevil infestation and avoid spreading of diseases. On the same day, after planting the cassava, plant 1 sweet potato vine in the middle between each pair of cassava cuttings (planting density of 10,000 sweet potato vines per hectare).

Consider applying fertilizer to increase crop yields and profit (see back side).

## STEP 3: Decide on Fertilizer Application

Fertilizer is only recommended for medium fertile soils. The use of fertilizer alone will not be sufficient to increase crop yields in very poor soils. Very poor soils first require applying compost or manure to restore fertility.

Use your knowledge of your field and your crop's history to gauge your field's fertility level. Fertilizer use is only recommended if your yield (without fertilizer) is between 10 and 20 tonnes of cassava roots per hectare, or between 6 and 12 tonnes of sweet potato roots.

**Is your field of medium fertility? Then continue to the next step and perform a cost – benefit analysis...**

### Cost Benefit Calculations

Using fertilizer only makes sense if the value gained from the increase in yield is larger than the cost of the fertilizer. Both the sweet potato and cassava will benefit from fertilizer application. You need to calculate the total cost of fertilizer, and the expected extra revenue from the increased yield of sweet potato and cassava.

We recommend applying 8 bags of 50 kg NPK 17:17:17 per hectare.

#### Total Cost of Fertilizer (TZS)

8 x

Price (TZS) of a 50 kg bag of NPK17:17:17

This will increase yield by 2 tonnes of sweet potato tubers and by 4 tonnes of cassava roots per hectare.

#### Extra Revenue from Sweet Potato and Cassava (TZS)

2 x

Price (TZS) of 1 tonne of sweet potato tubers

+ 4 x

Price (TZS) of 1 tonne of cassava roots

Is the **Extra Revenue from Sweet Potato and Cassava** larger than the **Total Cost of Fertilizer** ?

No.

**Fertilizer is not profitable. Do not apply fertilizer.**

Yes, but less than twice the total cost of fertilizer.

**Only apply fertilizer if you can accept some risk.**

Yes, it is more than twice the total cost of fertilizer.

**Fertilizer is profitable. Apply fertilizer.**

### Fertilizer Application Timing and Method

We recommend applying 8 bags of NPK 17:17:17 per hectare.



#### At planting

Apply 4 bags of NPK on 1 hectare

+



#### 3 weeks after planting

Apply 4 bags before the sweet potato canopy closes

To apply NPK 17:17:17, make small half-ring furrows about 15 cm away from the cassava cuttings and sweet potato vines, and apply the fertilizer in the furrow, then cover with soil.

Always make sure your soil is moist when applying fertilizer. Only apply fertilizer if you expect good rainfall in the coming days, else the fertilizer cannot dissolve and your crop will not benefit.