

# Conservation agriculture practices for banana + elephant foot yam system



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**CONSERVATION AGRICULTURE (CA)** is a sustainable option for resource conservation, efficient use of resources, yield optimization or enhancement, thus enabling adaptation to climate change and reduction in environmental footprint. CA is based on the three core inter-linked principles of minimum soil disturbance, permanent soil cover (by crop residues, mulching or cover crops) and crop diversification. Elephant foot yam is an important tropical tuber crop, popular as a nutritive vegetable and a food security crop, besides having medicinal values. Banana is an important cash crop, whose fully ripe fruit serves as a dessert delicacy. Protocols for CA in the above system are briefly dealt with.

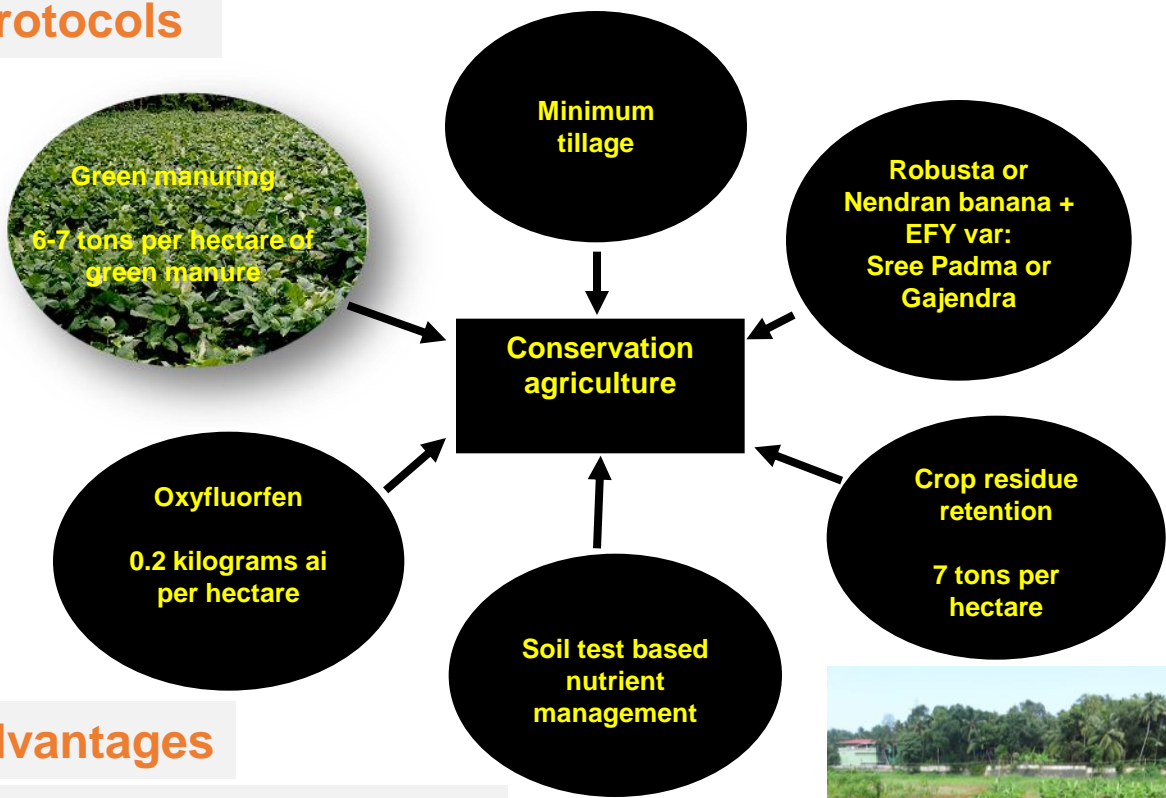
Both Robusta and Nendran varieties of banana are suitable for intercropping. Elephant foot yam varieties, Sree Padma and Gajendra are recommended for conservation agriculture. One ploughing and digging for pit formation is done as a part of minimum tillage. Plant banana (var. Robusta) in pits of size 45 cm x 45 cm x 45 cm at a spacing of 2.4 meter x 1.8 meter or banana var. Nendran at a spacing of 2 meter x 2 meter. Intercrop two rows of elephant foot yam in between two rows of banana in pits of size 60 cm x 60 cm x 45 cm at a spacing of 90 cm x 90 cm. Care should be taken to plant elephant foot yam leaving 45 cm from the base of banana. This will accommodate 8600 elephant foot yam and 2300 Robusta banana or 2500 Nendran plants in one hectare of land. Immediately after planting, retain crop residue at the rate of 7 tons per hectare. Sow seeds of green manure cowpea in the interspaces and incorporate 6-7 tons per hectare of green matter thus generated at 45-60 days. For weed management, apply Oxyfluorfen at the rate of 0.2 kilograms ai per hectare within 6 days of planting. For this, use 2.2 ml of Oxyfluorfen per litre of water and spray using a knapsack sprayer. One hand weeding within a fortnight of sprouting of elephant foot yam should be done. Need based application of manures and fertilizers based on soil testing is recommended.

Studies by ICAR-CTCRI recommend the following package for Robusta banana + elephant foot yam intercropping system.

Banana, Robusta: Farmyard manure (FYM) at the rate of 10 kg per banana plant + NPK at the rate of 144:0:200 grams per plant in the first year & 144:0:255 grams per plant in the second year.

Elephant foot yam: FYM at the rate of 25 tons per hectare; NPK at the rate of 90:0:90 kilograms per hectare in the first year & 90:0:120 kilograms per hectare in the second year.

# Protocols

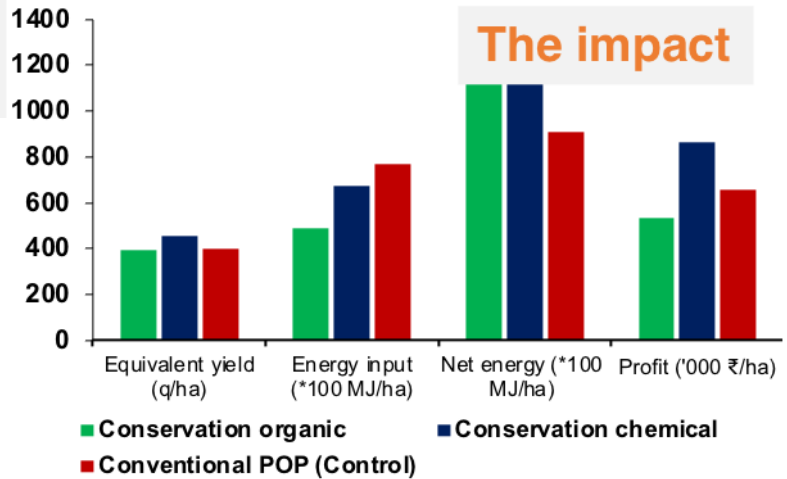


# Advantages

- Higher yield (+13%)
- Soil health (+pH, +K, +Ca, +Mg, +Mn, +Zn)
- Reduction in cost of production by 9%
- Higher income (+ 32%, Rupees 866,421 per hectare)



# Seeing is believing!



Crop Production Technical Leaflet

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