

INTERCROPPING IN CASSAVA PRODUCTION PROVIDES FOOD AND EARLIER INCOME: THE CASE OF THRA-ASSISTED COMMUNITIES IN LEYTE

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INTRODUCTION

Cassava is the third most important source of calories in the tropics (FAO, 2015). It ranks as the 5th commodity in the Philippines and 6th in Region 8. The crop is grown for food, feeds, starch and other industrial uses. Its high demand to meet the country's need has increased with a shift to mono-cropping on larger fields and use of high yielding varieties requiring higher rates of agricultural inputs.

Intensive monoculture leads to more pest problems and hastens soil nutrient depletion resulting in yield decline. Returning to traditional cassava farming system, based on mixed and intercropping, and even fallow period will restore soil nutrients. Adopting intercropping can give farmers earlier income while waiting as early as six months to 12 months for cassava to be harvested. It also maximizes utilization of small farm area to produce food for a family that provides the basic dietary requirements by planting short-season carbohydrate-rich plants such as sweet potato and nutrient-laden vegetables.

Cassava-based intercropping system is well suited in highly-vulnerable communities like Region 8 comprising Samar, Leyte and Biliran Islands which are prone to natural disasters notably typhoons. This region felt the brunt of Typhoon Haiyan (Yolanda) in 2013 which brought high number of casualties and greatly affected the agriculture sector. Cassava and sweet potato were the only crops providing food right after the disastrous calamity.



CHOICE OF CASSAVA VARIETIES & INTERCROPS

Cassava Varieties

- Low-HCN and high yielding varieties are recommended for dual purposes; for food and for the industry.
- Native varieties with shorter maturity (6-8 months): Golden Yellow and Kapolotan
- NSIC-registered with longer maturity (10-12 months): Lakan 1 and Rayong 5

Intercrops

The choice of intercrops depends on the purpose and economics.

- If production from intercropping is intended for human consumption, early-maturing carbohydrate sources such as sweet potato and corn while protein sources such as legumes like beans and peanuts will be used as intercrops.
- When weeds are problematic, then fast growing crop like sweet potato can be planted as cover crop to reduce weeding cost which also serves as cash crops.
- Any crops that are profitable can be planted as intercrops.

GOOD AGRICULTURAL PRACTICES

- Select mature and good quality planting materials that are free of pests and diseases.
- Apply combination of inorganic (NPK) and organic fertilizer such as chicken dung and vermicast based on soil analysis.
- Keep cassava fields weed free the first three months after plant planting.
- Harvest cassava when it reaches full maturity.

BENEFITS OF CASSAVA INTERCROPPING SYSTEM

The benefits of intercropping are highly variable:

- Increases production per unit area.
- Suppresses weeds and reduces weeding cost by planting fast growing crop as cover crop
- Improves soil health by increasing organic matter through crop diversification and promotes proliferation of soil-borne beneficial organisms
- Provides earlier and additional income



CONCLUSIONS

- Intercropping reduces yield in cassava production from 20-45% depending on the intercrops with least reduction in cassava-peanut and highest in cassava-sweet potato; however, peanuts produce low yield.
- Yield reduction in sweet potato as intercrop is compensated by its good market price that is 5 times higher than cassava on a per kg basis and about 30% reduction in weeding cost.
- Sweet potato gives additional earlier income from the planting materials.
- NSIC- PSBSp 30 sweet potato variety is more tolerant to shading than PSBSp 17, giving better yield and income.

INCOME DERIVED FROM CASSAVA AND INTERCROP

Income from cassava and intercrops varies from farm to farm which is affected by soil condition and management practices. Yield and income of cassava intercropping system adopted by Quezon Junior Farmers' Association (QFA) in Ormoc City and Cogon Farmers' Association (CFA) in Carigara, Leyte are presented in Figure 1 and sweet potato as the most profitable intercrop with the least management in Table 1. While sweet potato reduced the yield and income from cassava but its the only intercrop that gives farmers cash benefit. The loss is compensated by its price of 5 times higher than cassava. It is also the crop that suppresses weeds faster and lowers weeding cost by 30%.

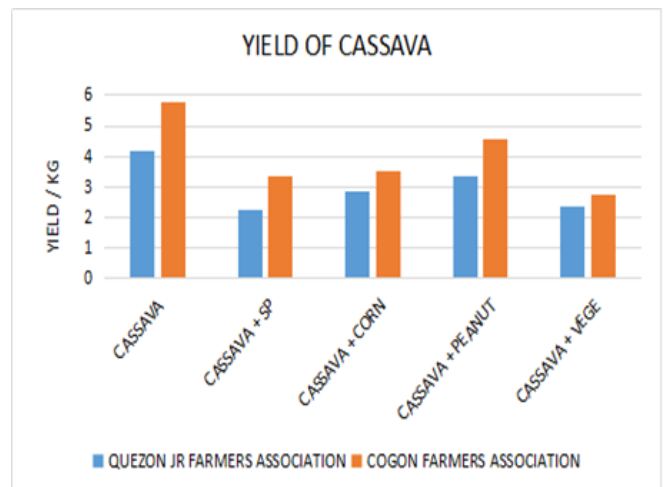


Figure 1. Yield of cassava with different intercrops.

Table 1. Yield and Income of Cassava and Sweet- potato as most profitable intercrop with least management.

Crops	Yield (kg) /Plot		Income (Php)*	
	QFA**	CFA***	QFA	CFA
Cassava Alone	4.16	5.77	12.48	17.31
Cassava (with Sweet potato)	2.25	3.22	6.75	9.66
% Reduction	45.91	44.19	45.91	44.19
Sweet potato (as Intercrop)				
Tubers- SP30	0.98	1.12	14.7	16.80
- SP17				

* Price of Cassava- Php 3/kg; Sweetpotato - Php 15/kg

** Lakan 1 cassava variety

*** Golden Yellow cassava variety

The Typhoon Haiyan Reconstruction Assistance (THRA) is a four-year project that supports the economic reconstruction of communities affected by Typhoon Yolanda (Haiyan) in Leyte, Antique and Iloilo. The project is implemented by CARE Philippines and funded by the Global Affairs Canada.

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