

CASE STUDY:

Evaluation of Sustainable Techniques for Cucumber

Finian & Lynsen Yaromal

Location: Paies, Kitti, Pohnpei, FSM 96941



Background

Size of Farm: 14 Acres

Effective/Productive Farm Size:

8-10 Acres

Years Farming: 8

Crops being Grown/Cultivated:

Beans, Bell Pepper, Chinese Cabbage, Cucumber, Eggplant



The Cooperator and Owner of the Farm: Mr. Finnian Yaromal

Cucumber Cultivation

Number of Rows: 8-10

Size: 77 ft x 44 ft

Spacing/Distance of Planting: 24 in x 36 in (Single Row)

Variety/Cultivar: 'Merry Swallow'

Seed Source: Known You Seed Co. (Taiwan)

- **Overview of Sustainable Techniques Used**

- Compost

- Hand Weeding

- Windbreaks

- Fallow and Rotations

- Insecticidal Soap

Cultural Practices & Management

Cucumber seeds are direct planted on pricked shallow holes in the plots/beds prepared previously. Area is first rotavated; compacted soil loosened using spade and raised beds using spade and hand trowel. Soil amendment includes pig manure at one shovel-full per hole applied one foot deep together with urea (49-0-0) and complete fertilizer (10-20-20) and covered with soil. The amount being applied is 100 lbs each kind per application for all the plots/beds at plot preparation, after seedling emergence and at on-set of flowering. Coral sand broadcast on surface of the plots/beds is also being practiced. Silica in coral sand is believed to alleviate nutrient imbalance. Soil pH determination using the rapi-test kit was 6.5 to 7.0. Cropping is rainfed.

Weeding is occasionally done by hand. Weeds are sometimes allowed to grow on the plots as cover believed to hinder chicken damage on the plots/beds.



Composting Area

Pests Monitoring

Insects such as melon aphids, garden fleahopper, green stink bug, garden looper, pumpkin caterpillar and few leaf-footed bug were observed. Early detection of severe aphids infestation is controlled using soap solution (local blue bar soap in 6 gallons of water) and sprayed on the leaves. Chromolaena weed is allowed to grow (at peripheral lot division separating adjacent lot

with windbreaks) is believed to be an alternate host to aphids. Ants, rats and crickets were observed to damage stems of newly germinated seedlings.

Diseases diagnosed and identified were leaf spot and fusarium wilt. Infestation is usually high at seedling stage and maturing plants towards later harvest when rain is almost continuous for several days. Chemical pesticides are not used.

Harvesting

Harvesting is done 3-4 times per week in about 4 weeks time. The average total yield in all the plots was recorded at 300 lbs. Low yield of 100 lbs or less could be due to unpredictable weather condition or change in the seasonal pattern for instance temporary drought of about 2 months or more and on another hand, almost continuous rain for one to two weeks and even longer.

Strategy/Approach Adopted

Success in cucumber cultivation is attributed to system of growing the crop. The plots in the farm are compartmentalized using windbreaks (*Acacia* spp., *Parinia* spp.) and adopted crop rotation in time and space. The used plots/beds were fallowed for at least 6 months or planted with legumes (beans) as the succeeding crop. Cucumber plantings on another plots/beds far from the previous one is being done at about mid-cropping period. Number of cropping per year is 12 times or more. Low yield of cucumber on a particular cropping is not a loss per se to the farmer but considered farm viability from the total harvests of all crops in the farm.

Individuals Involved: Dr. F. Javier, F. Yaromal
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07/14/03



Windbreaks to compartmentalize plots



A good cropping of bell pepper after a poor cropping of cucumber