

Performance of the Different Varieties of Cucumber (*Cucumis sativus*) Using Kakawate (*Gliricidia sepium*) Leaves as Mulching Material

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Abstract

The study was conducted from September to December 2007 in Naglaoa-an, Sto. Domingo, Ilocos Sur. It aimed to compare the response of the different varieties of cucumber using kakawate leaves as mulching material and to determine the yield performance of promising varieties of cucumber.

The variety trials were laid out in a Randomly Complete Block Design (RCBD) with four replications and they are as follows: Variety 1 - Ilocos White, Variety 2 - Batangas White, Variety 3 -- Poinsett 76, and Variety 4 - Governor (Hybrid).

Based on the four varieties of cucumber harvested, there were significant differences on the yield. Poinsett 76 yielded the best result with a total harvest of 38,047.62 kg/ha, followed by Batangas white and Governor (hybrid) with total harvests of 32,600.00 and 23,200.00 kg/ha, respectively. Ilocos white had the lowest yield, 9,847.61 kg/ha.

Yield differences were attributed to varietal differences and potentials because all the varieties were planted in the same soil with the same climatic condition.

Introduction

Background of the Study

Cucumber is a well known crop throughout the country due to its versatility as food and medicine. It is also known for its edible fruits because it is delicious, crispy, high in nutrients, low in calories and excellent source of fiber needed for a healthy digestive system. These are the reasons why cucumber farming a vital role in the locality.

Since this is a warm temperature vine vegetable, it is then imperative to produce carefully the crop in order to maintain better quality for a maximum production. This could be possibly achieved by using *kakawate* leaves as mulching material because of the multiple benefits derived from it. Evidently, it could be utilized as botanical pesticides, as green manure, not withstanding its regular usage as firewood and as post due to its durability.

Objectives

1. To compare the response of the different varieties of cucumber using *kakawate* leaves as mulching material.
2. To determine the yield performance of promising varieties of cucumber.

Review of Literature

According to Sarian (1975), Ilocos white and Batangas white are the two high-yielding, early maturing and multiple disease – resistant cucumber varieties, which are now famous at the College of Agriculture, UPLB. These varieties give a computed yield of 40-50 tons/ha. This high yield is due to the fact that the varieties produce almost all female flowers.

Paner (1995) cited that plants are nonnally produced more male than female flowers; hence, there is low yield. A good example of it is Pixie, the variety recommended to farmers, which yields from 5-10 tons/ha.

Methodology

Field experiment was conducted in Naglaoa-an, Sto. Domingo, Ilocos Sur from September-December 2007. A total land area of 450 sq. m. was planted with four different varieties of cucumber and having 21 sq.m/plot.

The study has four variety trials being replicated four times, and they were laid out using the Randomized Complete Block Design (RCBD).

The varieties used were:

V₁ -- *Ilocos White*

V₂ -- *Batangas White*

V₃ -- *Poinsett 76*

V₄ -- *Governor (Hybrid)*

Planting and spacing - seeds were planted in hills 1 m apart in the row, 5 seeds per hill and later thinned out to only 2-3 plants per hill.

Irrigation - watering was done immediately after planting to hasten seed germination and then followed by a 2-day interval in a week.

Fertilization - applying chicken manure was made twice, a day before planting and one month after planting.

Mulching - kakawate leaves were applied 3" thick on top of soil immediately after planting.

Trellising - bamboo poles and plastic string were placed end to end to provide the cucumber plants a place to crawl.

Cultivation - cultivating the soil while the plants were still young to kill the weeds and loosen the soil for better root-hold.

Pruning - unnecessary or tiny vines were removed to eliminate small or sickly pickling.

Harvesting - fruits were harvested not on the basis of age but on size and for the purpose for which they are to be utilized.

Results and Discussion

First Harvest Yield of Cucumber

Variety	Average Yield per Plot(kg)	Computed Yield Per Ha (kg)
Ilocos White	2.06	980.95
Batangas White	10.71	5100.00
Poinsett 76	18.19	8661.90
Governor Hybrid)	3.46	1647.62

Significant @ .05 level
CV=3.63

Poinsett 76 produced the highest yield with 8,661.90 kg/ha and the least was *Ilocos White* which has 980.95kg/ha only. When the difference in the total yield of cucumber fruits was considered, it was found out that there were significant differences among the varieties used. Yield differences were attributed to varietal differences and

potentials because all the varieties were planted in the same soil with the same climatic condition.

Second Harvest Yield of Cucumber

Variety	Average Yield per Plot (kg)	Computed Yield Per Ha (kg)
Ilocos White	9.89	4,709.52
Batangas White	21.00	10,000.00
Poinsett 76	27.25	12,976.19
<i>Governor [tyrid]</i>	10.49	4,995.24

Significant @ .05 level
CV=3.63

The highest yield produced was that of *Poinsett 76* which was 12,976.19 kg, followed by *Batangas White* and the least was *Ilocos White* with 4,709.65 kg/ha. When subjected to analysis of variance, it was found out that the yields were significantly different at .05 levels. This implies the variations of size and maturity of cucumber fruits

Third Harvest Yield of Cucumber

Variety	Average Yield per Plot (kg)	Computed Yield Per Ha (kg)
Ilocos White	2.48	1,180.95
Batangas White	11.00	5,238.10
Poinsett 76	11.21	5,338.10
<i>Governor hybrid</i>	14.01	6,671.43

Significant @ .05 level
CV=3.65

Governor (Hybrid) gave the highest yield of 6,671.43kg/ha and was closely followed by *Poinsett 76* and *Batangas White* respectively, while *Ilocos White* produced only 1,180.95 kg/ha. Analysis of variance indicates that there was no significant difference among the varieties used.

Fourth Harvest Yield of Cucumber

Variety	Average Yield per Plot (kg)	Computed Yield Per Ha (kg)
Ilocos White	6.25	2,976.19
Batangas White	27.75	12,261.90
Poinsett 76	23.25	11,071.43
<i>Governor tybrig</i>	20.76	9,885.71

Significant differences were observed in the yield but definitely the factor is the performance and potentials of each of the varieties used.

Financial Analysis

Higher net income was obtained from *cucumber* of the variety *Poinsett 76* while the low net income was obtained by the *Ilocos White* variety. Net income is higher and this is dependent on the purpose of cucumber fruits.

Financial Analysis of the Different Varieties of Cucumber

Variety	Yield/Ha (kg)	Gross Sales (Php/ha)	Production Cost (Pp/ha)	Net Income Php/ha)	Return of Investment (%)
Ilocos White	9,847.61	196,952.20	28,800.00	168,152.20	85.38%
Batangas White	32,600.00	652,000.00	28,800.00	623,200.00	95.58%
Poinsett 76	38,047.62	760,952.40	28,800.00	732,152.40	96.27%
<i>Goye ror f y rid</i>	23,200.00	464,200.00	28,800.00	435,200.00	93.75%

Cucumber fruits were sold @ P20/kg

Conclusions and Recommendations

1. As revealed by the data gathered, the varieties used in the study performed significantly from vegetative stage to harvesting stage.
2. The best time to plant cucumber is just after the rainy season because they can not withstand long during hot weather.
3. Poinsett 76 and Batangas White were found to be the highest yielder with mean yields of 38,047.62 and 32,600.00 kg/ha respectively.
4. Poinsett 76 produced more fruits comparable to the other varieties, only it was easily infested by insects due to its soft skin.
5. Planting of cucumber should be properly done, based on the package of technology, and one of which is making use of mulch to cover the soil after planting. Protect the young plants from being destroyed by the astray animals and all other plants care and management necessary for good crop establishment.
6. Since the variety of cucumber which is Poinsett 76 gave the highest yield, it is then recommended to the cucumber growers to use it for a greater production and income.
7. A follow-up study using other available varieties and mulching materials in the locality is also recommended following the cultural management practices.

References

Jamora, Danilo S. and Zacarias B. Sarian. 1975. *"What's New in Vegetables."* Agrix How to Series. Vol. 1, No. 5. UPLB: Agrix Publishing Corporation.

Paner, Victor Jr. E. 1975. *"A Guide for Vegetable Garden Teachers."* Agrix How to Series. Vol. No. 4. UPLB: Agrix Publishing Corporation.

