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Yield Performance of Hybrid Glutinous Corn As Influenced By Third Generation Nutrition Bio-Fertilizer

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Abstract

The study was conducted to determine the performance of two corn varieties and Third Generation Nutrition Bio-fertilizer interaction and to determine the return of investment of the different treatment combinations. The study was conducted at the experimental area of the Institute of Agricultural Technology, Isabela State University, Cauayan City Isabela. There were two factors used as treatments in the study. Main-plot (variety) using to corn varieties and sub-plot (fertilizer) F_1-Farmers practice (100 kg 14-14-14, 100 kg 16-20-0, & 100 kg urea ha^{-1}, F_2- 50 kg 14-14-14, 50 kg 16-20-0, & 50 kg urea ha^{-1}, +75 kg Aishawariya , 1000 ml New Suryamin, 500 ml Wonder , and 500 ml Megacal ha^{-1}, F_3- 70 kg 14-14-14, 70 kg 16-20-0, & 70 kg urea ha^{-1}, +37.5 kg Aishawariya , 500 ml New Suryamin, 250 ml Wonder , and 250 ml Megacal ha^{-1}, and F_4- 150 kg Aishawariya , 2000 ml New Suryamin, 1000 ml Wonder , and 1000 ml Megacal ha^{-1}). The experiment was laid out following the split plot design. The two corn varieties had insignificant differences on plant height. The ear height, ear weights with and without husk, ear length, ear diameter and corn ear yield per sampling area obtained from the two varieties were comparable with each other. The plants applied with 70 kg 14-14-14, 70 kg 16-20-0, & 70 kg Urea ha^{-1}, +37.5 kg Aishawariya, 500 ml New Suryamin, 250 ml Wonde , and 250 ml Megacal ha^{-1} produced the tallest plants , ear weights with and without husk, ear length and ear diameter. The different treatment combinations produed comparable heights at 30 days after planting but significant differences among the treatment combination were observed at 60 days after planting. The combined effect of 70 kg 14-14-14, 70 kg 16-20-0, & 70 kg Urea ha^{-1}, +37.5 kg Aishawariya, 500 ml New Suryamin, 250 ml Wonde , and 250 ml Megacal ha^{-1} is recommended for glutinous corn because it obtained the highest yield and return on investment.

Keywords— "Glutinous corn, bio available, organic nutrients, optimum, Bio-fertilizer, Third generation nutrition technology"

Introduction

Corn growers need to set a realistic corn yield goal in order to make sound decisions on hybrid, seeding rate, fertilizer application, and irrigation. The goal should be the most profitable yield that can be expected for a particular set of soil, climate, and management practices. The yield potential is the maximum production of a crop cultivar that can be achieved in a given environment. To achieve a yield potential, the crop must receive optimum levels of water and nutrients and be completely protected against weeds, pests, diseases and other factors that may reduce growth. Growth limiting factors such as water and nutrients determine the actual yield. Yield potential is reduced by insufficient nutrients, water supply, diseases, insects, weeds, lodging, or poor soil physical traits and quality. Maximum yields obtained in corn yield contest are reasonable estimates of yield potential because corn is grown in these plots at high density and nutrient supply and full weed and pest control.

The third generation nutrition technology or 3G includes bioavailable, organic nutrients which were chelated with gluconate, lactate, and amino acids which are almost 100 percent absorbed by plants. The 3G bioorganic nutritional products were produced through sophisticated fermentation biotechnology and tap innovative molecules. These substitute chemical fertilizers, bio-fertilizers, effective microorganism and other nutritional inputs needed by the plants to achieve their optimum growth. Studies of the 3G technology showed that there is no fixation of nutrients in the soil, hence leading to no soil or water pollution. Increased in microflora was also observed making the nutrients bioavailable providing balance distribution to plants.

The objective of the study was to evaluate the effect of Third Generation Nutrition Bio-fertilizer on two hybrid corn.

MATERIALS AND METHODS

Securing of Seeds

The seeds of hybrid glutinous corn (Klasika F_1 and Sweet Pearl varieties) were secured from an accredited seed dealer of East West Seed Company in the locality.

Location of the Experimental Area

The Experimental area was located at the experimental area of the Institute of Agricultural Technology, Isabela State University, Cauayan

Land Preparation, Laying-out the Experimental Area and Experimental Design

An experimental area of 381.88 square meters was cleared from grasses and stubbles to facilitate thorough land preparation. The area was plowed initially by tractor and left idles for two weeks for the weeds to decay. All un-decayed weeds were removed to facilitate thorough land preparation. An animal drawn plow was used for the final plowing and harrowing.

The prepared area was laid-out in three equal blocks, each block and had a dimension of 4.75 meters' x 23.5 meters spaced with one meter between blocks. Each block was further subdivided into eight plots measuring by 4.75 meters' x 2.5 meters, spaced with 50 centimeters between plots. The experimental treatments were randomly allocated following the randomization procedure for Split-Plot Design.

Experimental Treatments

There were two factors used in the experiment and they were as follows:

Main-Plot (Variety)

V_1 – Klasika F_1

V_2 – Sweet Pearl

Sub-Plot (Fertilizer)

F_1 – Farmer's Practice (100 kg Triple 14, 100 kg 16-20-0 kg & 100 kg Urea ha $^{-1}$)

F_2 – 50% Farmer's Practice + 50% RR Third Generation Nutrition Bio-fertilizer (50 kg Triple 14, 50 kg 16-20-0 & 50 kg Urea ha^{-1} + 75 kg Aishwariya, 1000 ml New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1})

F_3 – 70% Farmer's Practice + ^{1} + 30% RR Third Generation Nutrition Bio-fertilizer (70 kg Triple 14, 70 kg 16-20-0 & 70 kg Urea ha^{-1} 37.5 kg Aishwariya, 500 ml New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1})

F_4 – 100% RR Third Generation Nutrition Bio-fertilizer (150 kg Aishwariya, 2000 ml New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1})

Construction of Furrows and Application of Fertilizer

Furrows at a distance of 75 centimeters between furrows were established just before basal application and planting. The rate of inorganic fertilizer was based from the Farmer's Practice and the application of Third Generation Nutrition Bio-fertilizer was based from the protocol given by the Department of Agriculture – Bureau of Agricultural Research (DA-BAR), Quezon City. The fertilizer used applied per treatment is presented in Tables 1 and 2.

Planting and Replanting

Two seeds were planted per hill at a distance of 20 centimeters per hill. The seeds were covered with fine soil and foot pressed to have uniform germination.

Replanting was done five days after emergence.

Table 1. Kinds, Amount (kg) and Time of Application of Fertilizer per Hectare used in the Study.

TREATMENT	Basal	Top Dressing (30 DAP)	Application of 3G	
			15 DAP	30 DAP
T_1 – Farmer's Practice	100 kg T14 100 kg 16-20-0	100 kg Urea		
T_2 – 50% FP + 50% 3G	50 kg T14 50 kg 16-20-0 75 kg Aishwariya (3G)	50 kg Urea	1000 ml New Suryamin 500 ml Wonder 500 ml Megacal	1000 ml New Suryamin 500 ml Wonder 500 ml Megacal
T_3 – 70% FP + 30%3G	70 kg T14 70 kg 16-20-0 105 kg Aishwariya (3G)	70 kg Urea	600 ml New Suryamin 300 ml Wonder 300 ml Megacal	600 ml New Suryamin 300 ml Wonder 300 ml Megacal
T_4 – 100% 3G	150 kg Aishwariya (3G)		2000 ml New Suryamin 1000 ml Wonder 1000 ml Megacal	2000 ml New Suryamin 1000 ml Wonder 1000 ml Megacal

Table 2. Kinds, Amount (g) and Time of Application of Fertilizer per 11.88 m^2 used in the Study.

TREATMENT	Basal	Top Dressing (30 DAP)	Application of 3G	
			15 DAP	30 DAP
T_1 – Farmer's Practice	118.8 g T14 118.8 g 16-20-0	118.80 g Urea		
T_2 – 50% FP + 50% 3G	59.40 g T14 59.40 g 16-20-0 0.89.1 g Aishwariya (3G)	59.40 g Urea	1.13 ml New Suryamin 0.56 ml Wonder 0.56 ml Megacal	1.13 ml New Suryamin 0.56 ml Wonder 0.56 ml Megacal
T_3 – 70% FP + 30%3G	83.16 g T14 83.16 g 16-20-0 53.46 g Aishwariya (3G)	83.16 g Urea	0.79 ml New Suryamin 0.39 ml Wonder 0.39 ml Megacal	0.79 ml New Suryamin 0.39 ml Wonder 0.39 ml Megacal
T_4 – 100% 3G	1.78.20 g Aishwariya		2.25 ml New Suryamin 1.13 ml Wonder 1.13 ml Megacal	2.25 ml New Suryamin 1.13 ml Wonder 1.13 ml Megacal

Care and Management of the Crop

Cultivation and Weeding. Off-barring was done at 15 days after planting and hilling-up was done at 30 days after planting. Hand weeding was done to control weeds that were not controlled during cultivation.

Water Management. Irrigation was done as the need arose.

Crop Protection. The occurrence of insect pests and diseases was monitored to control severe infestation.

Harvesting

The corn ears were harvested when they reached soft dough stage. The ears of the sample plants were harvested one by one, placed in plastic sack, and properly labeled.

Data Gathering

1. Plant Height at 30 and 60 Days after Planting. The height of the ten randomly selected representative plants was measured from the base of the plants up to the tip of the meristem by using a meter stick at 30 days after planting while the plant height at 60 days after planting was measured up to the first node of the tassel.
2. Ear Height. Ear height was measured from the base of the plant to the node bearing the lowest ear.
3. Weight of Ear with and without Husk. The ten sample ears with husks was weighted after harvest. The husk was removed and weighted. The weight was divided by ten to obtain the weight per ear. The weight was determined using the digital weighing balance.
4.Lenght of Corn Ear. The ear lengths of the ear without husks from the ten representative plants was measured by using foot ruler from end to end of the ear.
5. Diameter of Ear. The sample ears that was used in determining the length of ear without husks was used to determine the diameter using the Vernier caliper.
6. Yield per Sampling Area. All harvested ears in each sampling area with husks was weighed and used as the basis for the computation of yield per hectare.

Statistical Analysis

All the data gathered were analyzed following the Analysis of Variance for the Split-Plot Design. The Least Significant Differences was used to compare means of the variety and fertilizer as single factor. The Duncan's Multiple Range Test (DMRT) was used for the comparison of means of the treatment combinations.

Cost and Return Analysis

The cost of production in terms of labor and farm inputs using the current price in the locality was considered in the determining the return of investment per treatment. The gross income was taken from the current price of fresh green glutinous corn in the market. The return of investment was obtained by dividing the net income over total cost of production multiplied by one hundred.

DISCUSSION OF RESULTS

Plant height.

The height of plants at 30 and 60 days after planting as affected by inorganic fertilizer and Third Generation Nutrition Fertilizer. No significant differences were found on the height of the two glutinous corn varieties at 30 days after planting with values of 122.33 centimeters for klasika (V_1) and 122.31 centimeters for sweet Pearl variety (V_2).

The fertilizer as a single factor significantly influenced the height of plants at 30 days after planting. The application of fertilizer at the rate of 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) obtained comparable heights with means of 122.86, 123.72 and 122.74 centimeters, respectively. The shortest plants were observed by the application of 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1} with a mean of 119.97 centimeters.

Insignificant result was found the interaction of the different treatment combinations on the height of plants at 30 days after planting with means ranging from 119.95 to 123.82 centimeters.

Significant result was obtained on the height of plants at 60 days after planting. The plants applied with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250

ml Megacal ha^{-1} (F_3) produced the tallest plants with a mean of 173.53 centimeters. It was followed by the plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) with a mean valu of 164.82 and 161.83 centimeters. The shortest plants were produced by the plants applied with 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) with a mean value of 159.12 centimeters. The significant result of the study was attributed by the fertilizer applied, i.e., the corn plant requires nitrogen and phosphorus soon after germination to initiate the growth of stems, leaves and ear structures (Jones, 2005).

Ear Height.

The ear height of glutinous corn as affected by the application of inorganic fertilizer plus Third Generation Nutrition Bio-fertilizer. The klasika F_1 (V_1) and Sweet pearl (V_2) glutinous corn varieties showed no significant differences on ear height.

The fertilizer as single factor significantly affects the ear height of the plants. The plants applied with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) had the tallest ear heights with a mean value of 90.25 centimeters. It was followed by plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), with a mean value of 86.12 centimeters.

The ear heights of the plants showed no significant differences among the different treatment combinations with mean values ranging from 77.83 to 90.46 centimeters.

Weight of Ear with and without Husk.

Result showed that the variety as a single factor obtained insignificant result on the weight of ear with husk with mean values of 216.78 grams and 220 grams for the two varieties. The fertilizer as single factor influenced The fertilizer as a single factor influenced the weight of ear per plant. The plants fertilized with the rate of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) obtained the heaviest ear with a mean of value 245.22 grams. It was followed by the plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), with a mean of 225.62 grams.

The lightest ear was obtained in plants fertilized using the Farmers practice at the rate of 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) with a mean value of 202.45 and 200.28 grams. The significant result of the study was attributed by the fertilizer applied. Large yields and good quality are possible if the soil contains an abundance of readily available nutrients (Naeem *et al.*,2006; Dauda *et al*.,2008).

The fertilizer significantly affects the ear weights without husks wherein the plants applied with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) produced the heaviest ear without husk with a mean value 222.49 grams. It was followed by plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), with a mean value 204 grams. The least in ear weight were obtained in plants fertilized using the farmers practice of 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) with mean values of 188.20 and 186.85 grams. The result of the study conformed to the findings of Akinrinde *et al*., (2008) that may be attributed fertilizer applied .The third generation crop nutrition technology had the combining ability of pro organic raw materials and enzymes blended synergistically to provide adequate macronutrients , micronutrients and catalytic

enzymes readily available for the microbes like rhizobium and azospirillum to convert nitrogenous materials to nitrate nitrogen that is needed for plant growth and development. The application of bioorganic fertilizer as in case of Third Generation Nutrition Biofertilizer affected the growth and development of the roots as cited by Levai *et al*., (2006).

The interaction of the two factors did not show significant effect on the weight of the ear without husk with mean values ranging from 183.43 to 223.03 grams. The result implied that the amount of fertilizer applied had the effect on the weight of corn ear.

Length and Diameter of Corn Ear

The ear length of the two varieties did not show any significant differences in ear lengths with mean values of 15.88 centimeters for Klasika F_1 (V_1) and 15.35 centimeters for the sweet pearl (V_2)

The fertilizer as a single factor showed significant result on the length of corn ear. The application of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) produced the longest ear with a mean of 17.03 centimeters. The plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), Farmers practice with 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) produced comparable ear length with mean values of 15.42, 14.96, and 15.07 centimeters. The result indicates that the Third Generation Nutrition Bio fertilizer enhanced the development of corn ear.

Non-significant result was observed on the ear lengths of the different treatment combinations with mean values ranging from 14.67 to 17. 00 centimeters.

The corn ear diameter of the two varieties of corn obtained non-significant result with result with mean values of 4.12 and 4.20 centimeters. The fertilizer as single factor showed a significant effect of the corn ear diameter wherein the application of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) produced the biggest corn ear with a mean of 5 centimeters. It was followed by the plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2), with a mean of 4.75 centimeters. He application of 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) produced 3.60 centimeters. The use of farmers practice with Farmers practice with 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) produced the smallest corn ear with a mean of 3.28 centimeters. The result was attributed by fertilizer.

No significant variations were observed in the treatment combinations on ear diameter with mean ranging from 3.23 to 5.00 centimeters.

Weight of Ear with and without Husk per sampling area.

Non-significant result was obtained on the weight of the ear with husk per sampling area on the variety as single factor.

The fertilizer as a single factor obtained significant result on the weight of corn ear with husk per sampling area. Consistently, the plants fertilized with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) obtained the heaviest ear with a mean of 2.45 kilograms. It was followed by the plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2) with a mean value of 2.26 kilograms. The least were observed from the plants fertilized using the farmers practice at the rates of 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) with mean values of 2.00 and 2.03 kilograms.

No significant interactions were obtained on the weight of ear with husk per sampling area in the different treatment combinations with mean values ranging from 1.98 to 2.46 kilograms. The two corn varieties had comparable ear weights without husk per sampling area with means of 2.02 and 2.06 kilograms.

Likewise, the plants applied with fertilizer at the rate of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) produced the heaviest ear without husk per sampling area with a mean of 2.30 kilograms. It was followed by the plants applied with 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} (F_2) with a mean of 2.11 kilograms. The lightest ear was obtained in plants fertilized with 100 kg 14-14-14, 100 kg 16-20-0 & 100 kg 46-0-0 ha^{-1}(F_1) and 150 kg Aishawariya, 2000 ml of New Suryamin, 1000 ml Wonder, and 1000 ml Megacal ha^{-1} (F_4) with mean values of 1.85 and 1.90 kilogram.

Insignificant result was obtained on the weight of corn ear without husk per sampling area from the different treatment combinations. The different treatment combinations produced comparable ear weights with mean values ranging from 1.83 to 2.31 kilograms.

CONCLUSION AND RECOMMENDATION

The study was conducted to evaluate the effect of Third Generation Nutrition Bio- fertilizer on two hybrid corns.

Result showed that the two varieties showed no significant differences on plant height at 30 days after planting. The fertilizer influenced the height of plants at 60 days after planting wherein the application of 50 kg of 14-14-14, 50 kg 16-20-0 & 50 kg 46-0-0 ha^{-1} + 75 kg Aishawariya, 1,000 ml of New Suryamin, 500 ml Wonder, and 500 ml Megacal ha^{-1} produced the tallest plants. The treatment combinations obtained significant result on the height at 60 days after planting that the application of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} in both varieties produced the tallest plants at 60 days after planting. The plants applied with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} (F_3) had the tallest ear heights. The fertilizer as single factor influenced the weight of ear plant wherein the plants fertilized with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal $ha^{-1.}$ The fertilizer significantly affects the ear weights without husks. The interaction of two factors did not show any significant effect on the weight of ear without husk. In terms of ear length of two corn varieties did not show any significant differences with each other. The fertilizer significantly affects corn ear diameter wherein the application 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal $ha^{-1.}$ No significant differences on the ear diameter among the treatment combinations. The fertilizer as a single factor obtained significant result on the weight of corn with husk per sampling area that the plants fertilized with 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} obtained the heaviest ear.

Based from the results of the study, Klasika F1 and Sweet Pearl varieties are recommended because they produced comparable green corn yield. The application of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} is recommended as cultural production modality for glutinous corn because it obtained the highest yield. Likewise, the combined effect of 70 kg of 14-14-14, 70 kg 16-20-0 & 70 kg 46-0-0 ha^{-1} + 37.5 kg Aishawariya, 500 ml of New Suryamin, 250 ml Wonder, and 250 ml Megacal ha^{-1} is recommended for green corn

production using hybrid glutinous corn as also obtained the highest return on investment.

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