Production Potential Baby Corn (*Zea Mays, L*) From Some Variety in Bengkalis Riau

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Abstract. The land in Bengkalis is dominated by peat soil, which has low fertility, so to support the production of food crops, certain efforts are needed so that the land is efficient. Baby Corn is a type of fruit vegetable produced from corn plants harvested at a young age. Baby corn supply in Bengkalis comes from Pekanbaru, to reduce the amount of Baby Corn supply, the peat land must be empowered. Different varieties of corn will produce different production, even if planted in the same location. Testing of corn varieties on the condition of peatlands needs to be done to determine the potential of varieties to produce under these conditions. The purpose of this study was to obtain varieties that gave the best Baby Corn results in Pekanbaru. The treatment designs used five corn varieties, namely Bisi-1, P-12, C-7, CPI-1, and Arjuna. The environmental design used a completely randomized design. Data analysis used variance and continued with Duncan test at p 0.05. The results of the study showed that the P-12 variety was the highest yielding variety compared to the other four varieties. Adaptability of P-12 varieties is considered better than the other four varieties.

1. Introduction

Indonesia is estimated to have peatlands spread across the islands of Sumatra, Kalimantan, Papua, and a small part in Sulawesi with an area of 14.95 million hectares [1]. The largest peatland in Sumatra is found in Riau Province, which is 3.89 million hectares, which means that 59.94% of peatlands in Sumatra are in Riau Province [2]. Approximately 1.037020 hectares of peatland are used for the cultivation of plantation crops, food crops and horticulture [3].

Potential peatlands for use are 1747 hectares in the Riau Islands [4]. Bengkalis is one of the regencies in Riau Province, which has eight sub-districts, and one of its sub-districts is Bantan with an altitude of 5 meter above sea level [5]. The soil conditions in Bantan District are dominated by peatlands, this is due to its location not far from the New Straits. Bantan District is an area that can be used for the cultivation of Horticultural crops such as vegetables and food crops such as corn. Other types of food crops are soybean, sweet potato, and cassava which are planted by monocultures and as intercrops [2]. Research reports on peatlands above generally report that peatlands in Riau and Bengkalis provinces have been degraded.

Peatlands that have been degraded have very low N content. Corn plants during their life cycle require sufficient amounts of N. This condition is a limiting factor to produce plants but can be overcome by the addition of organic matter, the addition of minerals, and the addition of nutrients.
Corn production as a food ingredient requires large input, but the corn plants that are programmed to produce vegetables will be more profitable, because the input of production facilities provided is not much due to faster harvest times. Young harvested corn can be produced from all varieties, but to get high production, special varieties are needed. Semi corn production will be high if the growth requirements are met. Corn plants require loose soil, fertile, rich in organic matter. The results of the study reported that corn plants were verbalized with a dose of 18 tons per hectare with the results of 0.33 tons per hectare of Baby Corn. Surtinah et. al [6] reported that maize crop cut off from the upper organ of the cob has no significant effect on its production. Buhaira et. al [7] reported that corn plants treated with water availability up to field capacity produced a wet weight of 20.06 grams of corn cobs, and a mixture of organic matter with sedimentary soil, resulting in a semi wet weight of 19.65 grams.

Murdhiani et. al [8] reported that the weight of cob with weight of semi-maize weighing 1.75 kg was obtained from corn plants treated with 2.5 kg of mineral soil + 2.50 grams of peat soil combined with giving 2% of Bio liquid organic fertilizer 7. Lime soil fertilizers given up to 4 tonnes per hectare increases the growth of sweet corn on inland peat soil [9]. Surtinah et.al [10], reported that by-products in the form of semi-corn harvested as a by-product can be used as high-value vegetable ingredients. Sweet corn which is given fertilizer treatment and growth regulating agent produces faster flowering time, so semi corn as a by-product can be used as a vegetable that can increase the production value of the cultivation [11]. Different corn plants and planted in different locations will show different results, this is because environmental factors are one of the factors that influence the production of a plant as well as the plant's genetic factors [12] corn which gives the highest semi corn production in Bengkalis Regency.

2. Research Method

The research was conducted in Bantan Village, Bantan District, Bengkalis Regency, organosol soil type, altitude of 5 meters above sea level, soil pH of 5.0 to 5.5. Flat topography, Bengkalis is located between 2º7'37,2 "-0º 55'33,6" North Latitude and 100º57'57,6 "- 102º30'25,2" East Longitude.

The materials used in this study were Bisi 2, P 12, C7, CPI-1, and Arjuna varieties, manure, Urea fertilizer, SP 36, KCl, Curacron, Dithane M-45.

The treatment design tested was 5 varieties of corn, namely; v1 = Bisi 2 variety; v2 = variety P 12; v3 = variety C 7; v4 = CPI-1 variety; and v5 = Arjuna variety. The environmental design used is a completely randomized design with 4 replications. Data were analyzed by variance and continued with a different test of Duncan's average treatment p 0.05.

Soil processing is done twice. The size of the experimental plot was 1 x 2 meters, the spacing used was 25 x 50 cm. Planting is carried out by dipugal, Urea fertilizer is given at a dose of 200 kg per hectare, SP36 and KCI 50 kg per hectare respectively.

Urea fertilizer is given half dosage, added with all doses of SP36 and KCI at the time of planting, half dosage of urea is given when corn plants are semi 25 days after planting. The variables observed were harvest age (days), plant height (cm), leaf width (cm), leaf length (cm), number of cob (fruit), ear weight (grams), and consumption weight (grams).

3. Results and Discussion

The observations made on five corn varieties showed that the variable number of mackerel was not significant, while other variables such as harvest age, plant height, leaf width, leaf length, ear weight, and weight of consumption were significantly different. Different test results of the average treatment for all variables observed are written in the following table:

| Varieties | Harvest Age (days) | Plant height (cm) | Leaf width (cm) | Leaf length (cm) | Number of Cob (fruit) | Cob weight (grams) | Consumption weight (grams) |
|-----------|-------------------|------------------|----------------|-----------------|----------------------|-------------------|--------------------------|
| Bisi -l   | 46.0 b            | 280.25 c         | 11.38 b        | 106.13 b        | 2.00 a               | 315.00 c          | 183.75 b                 |
Observations on the vegetative organ variables of corn plants showed that the varieties tested were significantly different, for the high variable Bisi-1 variety plants showed the highest plant height compared to P-12 and CPI-1, the width of the Bisi-1 and P-12 leaf widths showed width the widest leaf, while the length of the leaves of the Bisi-1, P-12, CPI-1, and Arjuna varieties showed the same results. Different vegetative growths of plants will be influenced by genetic factors of the variety. Vegetative growth of plants will usually correlate with the production of these plants. The results of this study show what is written above, that vegetative growth of plants illustrates its generative growth. [13], reports that the growth and production of different varieties in the same location will also be different. Varieties that are planted in different locations will also give different results [11]. The results of research with the provision of ameliorant types and doses gave different results on the growth of sweet corn plants, and at 80% treatment of chicken manure + 20% dolomite, the NPK uptake by sweet corn plants was the highest [14,15], reported that there was a positive relationship between vegetative growth such as plant height, number of leaves and width of leaves with ear weight and ear length.

The fastest harvesting age is produced by Arjuna variety, this does not mean good, it is suspected that the Arjuna variety cannot adapt to the conditions of the organosol land. This phenomenon is proven by the results of the heavy consumption obtained by the Arjuna variety is the lowest. The best adaptability is shown by the P-12 variety. The highest consumption weight was obtained from the P-12 variety, followed by the Bisi-1, CPI-1, and C-7 varieties. Peat soil was degraded in Bantan Village, Bengkalis Subdistrict, with the opportunity to develop horticultural crops from vegetables, such as semi-corn vegetables. Land conditions can provide good results for semi corn production. This phenomenon can be used as a reference for developing other horticultural plants.

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