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Effect of growth regulators in baby corn

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Abstract : A filed experiment was conducted at the Rajendra Agriculture University Pusa (Bihar) during Rabi and Kharif Season of 2013. The soil of the experiment area was sandy and clay loam with alkaline PH: low in Organic Carbon (0.34 and 0.32%) and available N (210.4 and 233.4 kg ha-1) medium in available P (12.4 and 11.8 kg ha-1) and high in available K (438.6 and 414.1 kg ha-1) during late Rabi and Kharif 2013 season respectively. Three herbicides were selected for growth effect on baby corn with different aspect viz. leaf width leaf height total height of plants (cm) and total number of leaf each plant Herbicides 24-D atrzine and Glyphosate were used of different concentration most effective concentration was applied for further studies.

Key words: Organic carbon, Nitrogen, P. width of leaf height of leaf 2,4D.

INTRODUCTION

Despite its great importance in Indian agriculture as well as export potentiality a very little work has been done on baby corn in India. In the past, the practice has been to use any genotype of maize for the cultivation of baby com and detailed studies have not been conducted to identify and/or develop varieties for baby corn. In India, only few single cross hybrids have been found to be preferred for baby corn cultivation (HM-4, HQPM-1, PEHM-2 and Kanak etc.) All these hybrids were originally developed for grain purpose and they are considered for baby corn usage on account of some characteristic features. At present, exclusive and specific single cross baby corn hybrids are not available under public domain. Developing baby corn cultivars/hybrids specifically adaptable to Indian conditions might be one of the approaches, especially for fulfilling short and/or medium term goals. Here also emphasis needs to be given on early maturity considering the fact that many crops can be taken under the Indian conditions due to reasonably favorable weather throughout the year in most of the states. Early maturity is also an important factor for determining comparative advantage especially in relation to other vegetables in specific season.

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MATERIALAND METHOD

A field experiment was conducted at the Rajendra Agriculture University, Pusa (Bihar) during Rabi and Kharif season of 2013. The soil of the experiment aria sandy clay loam with alkaline pH; low in organic carbon (0.34 and 0.32%) and available N (210.4 and 233.4 kg ha-1), medium in available P (12.4 and 11.8 kg ha-1) and high in available K (438.6 and 414.6 kg ha-1) during late Rabi and Kharif 2013 season, respectively. Baby corn variety Surya (Hybrid) with field duration 65-70 days was used in the trial.

The experiment was laid out in Randomized Complete Block Design (RCBD) with three replications. The experiment consist of six treatments with three herbicides (2, 4-D, atrazine and glyphosate) each four varied concentration for along with water spray (control) and no spray (absolute control). The seed ware pre-treated with fungicide (Thriam @ g kg-1 seeds) and bio-fertilizer (Azospirillum @ 600 g ha-1 seeds) and sown at a spacing 45x25 cm. The recommended fertilizers (150:60:40NPK ha-1) were applied in the form in the Urea (N), single super phosphate (P) and muriate of potash (K). Full dose of phosphorus and half of nitrogen and potassium were applied at the time of sowing. Remaining of 50% of nitrogen and potassium were applied at 25 Days After Sowing (DAS) as top dressing. Three herbicides selected with different concentration. These herbicides 2, 4D @20-50 ppm, atrazine @ 70-100 ppm and glyphosate @ 05-20 ppm were prepared by diluting with distilled water sprayed in evening hours by hand operated sprayer at 25 and 45DAS. Two - hand weddings (20 and 40 DAS) were done to check the weeds. Need based plant protection measures were carried out timely. Detaselling was done before the emergence of tassel from the flag leaf. The cobs were harvested after 2-3 cm length of silk emergence.

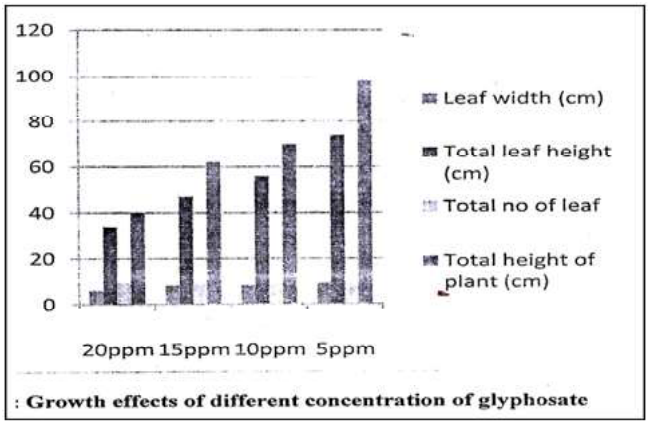
For recording various biometric observations on baby corn, from each net plot a sample consisting of five plants were selected at random and tagged. From the tagged plants, observations on plant height, number of green leaves plant-1, Leaf area Index (LAI) and Dry Matter Production (DMP) at harvest have been recorded. Plant height was measured from ground level to the tip of flag leaf. Number of green leaves plant-1 was recorded by counting the number of fully opened green leaves borne on main stem of a plant. Dried and yellow leaves are not considered for counting. The collected leaves from the sample plants were taken of the laboratory and the leaf area was measured by using leaf are meter (LICOR Model 3100). From the leaf area, LAI was calculated.

$$\text{Leaf Area Index} = \frac{Leaf\ Area\ Plant - 1 \times 100}{Ground\ area\ occupied\ plant - 1}$$

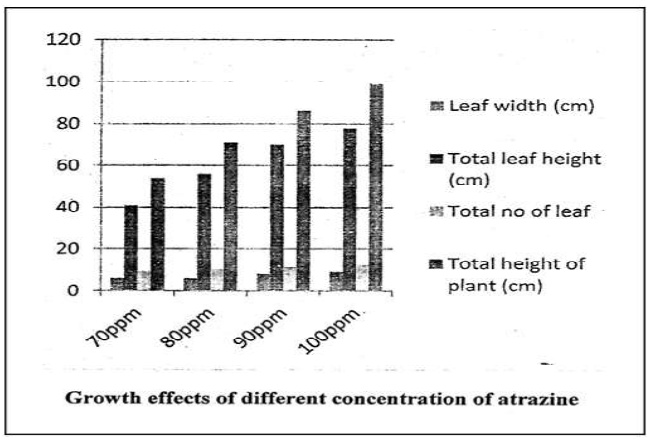
RESULTS

Three herbicides were selected for growth effect on baby corn with different aspect viz. leaf width, leaf height, total height of plant (cm) and total number of leaf each plant. Herbicides 2, 4-D, atrazine and glyphosate were used of different concentration. Most effective concentration was applied fro further studies. The results recorded in the revealed that glyphosate were found most effective at concentration 5ppm followed by 10ppm for maximum growth aspects as such as total number of leaf, width of leaf height of leat and height of each plant (cm). In case of atrazine result related that most effective concentration was at 100 ppm followed by 90 ppm for maximum growth aspects as such as total number of leaf, width of leaf, height of leaf and height of each plant (cm) and 2, 4-D most effective at 50ppm concentration followed by 40ppm for maximum growth aspects as such a total number of leaf, width of leaf, height of leaf and height of each plant (cm)

Leaf height, leaf width, Total no. of Leaves and plant height are shown in graph no. 01 and no. 02.



: Growth effects of different concentration of glyphosate



Growth effects of different concentration of atrazine

CONCLUSION

Three herbicides were selected for growth effect on baby corn with different aspect viz. leaf width, leaf height, total height of plant (cm) and total number of leaf each plant. Herbicides 2, 4-D, atrazine and glyphosate were used of different concentration. Most effective concentration was applied for further studies. The results recorded in

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