Authors: Prasad, Chandrajeet
Advisor: Sengupta, S.
Title: EFFECT OF BIOREGULATORS ON GROWTH AND YIELD OF ELEPHANT FOOT YAM (Amorphophallus paeoniifolius (Dennst.) Nicolson) cv. Gajendra
Publisher: Birsa Agricultural University, Kanke, Ranchi, Jharkhand
Language: en_US
Type: Thesis
Pages: 93
Agrotags: null
Keywords: EFFECT OF BIOREGULATORS ON GROWTH AND YIELD OF ELEPHANT FOOT YAM (Amorphophallus paeoniifolius (Dennst.) Nicolson) cv. Gajendra
Abstract: Elephant foot yam (Amorphophallus paeoniifolius (Dennst.) Nicolson) a member of the family Araceae is a highly potential tropical tuber crop in terms of production and is locally used as staple food in many Asian countries. Elephant foot yam is basically a crop of Southeast Asian origin. Corms are rich in minerals and vitamins. The botanically modified stem ‘corm’ is consumed as a vegetable after boiling, baking and frying. It is widely grown and consumed in south eastern countries like India, Philippines, Malaysia, Indonesia etc. In India, Gajendra variety, a non acrid and generally devoid of cormels, released from HRS, Kovvuur (A.P) has gained the status of a cash crop due to its high production potential, market acceptability and lucrative economic returns with a production potential (40-70 t ha-1). The present experiment was carried out to investigate the effect of bioregulators on growth and yield of Elephant foot yam (Amorphophallus paeoniifolius (Dennst.) Nicolson) cv. Gajendra at the Horticultural Research Unit, BAU, Ranchi during the period from July 2014 to Jan 2015. Five bioregulators viz. Triacontanol (TRIA), Gibberellic acid (GA3), Naphthalene acetic acid (NAA), Benzyl Adenine (BA) and Ethrel were taken into consideration for the investigation. The experiment was laid out in Randomized Block Design (RBD) with 3 replications and 16 treatments. Most of the parameters showed marked variations due to the effect of these bioregulators. In respect of vegetative parameters, the minimum days taken for 50 % & 100 % emergence (14.33 & 16.67 days, respectively) with the maximum height of pseudostem (79.12 cm) were observed in application of GA3 at 200 ppm while the maximum days taken for 50 % & 100 % emergence (24.67 & 30.67 days, respectively) and minimum height of pseudostem (60.31 cm) was observed in control (only water spray). The maximum girth of pseudostem (19.23 cm), canopy spread E-W & N-S (132.33 & 126.67 cm, respectively), number of branches (5.33), Leaf area (10905.67 cm2) as well as LAI (3.03) were observed in application of triacontanol at 500 ppm while minimum girth of pseudostem (13.67 cm), canopy spread E-W & N-S (101.67 & 97.67 cm, respectively), number of branches (3.67), Leaf area (8245.13 cm2) as well as LAI (2.29) were observed in control. In case of Physical and yield parameters, TRIA at 500 ppm imparted highest horizontal and vertical diameter of tubers (23.32 & 14.60 cm, respectively), dry matter (24.30%), volume (2165.00 cc), harvest index (88.11%) and yield (67.56 t ha-1) while the control recorded lowest horizontal and vertical diameter of tubers (15.60 & 10.67 cm, respectively), dry matter (20.08%), volume (1590.00 cc), harvest index (70.70%) and yield (39.56 t ha-1). Foliar spray of TRIA at 500 ppm exhibited highest percent of starch (21.4%), nonreducing sugar [sucrose] (1.76%) as well as total sugar (2.54%) except reducing sugar content (0.71%). In contrast, the control recorded lowest percent of starch (17.1%), non-reducing sugar (1.20%), and total sugar (2.19%) except percentage of reducing sugar (0.93%). Highest content of ascorbic acid (17.60 mg 100g-1) was obtained in treatment T6 [GA3 @ 200 ppm] and lowest content (17.6 mg 100 g-1) was recorded under T16 (control). In the present investigation maximum net profit and the B:C ratio obtained with the treatment T2 [Triacontanol (500 ppm)] followed by T6 [GA3 (200 ppm)]. Correlation analysis revealed that the tuber yield had highly significant positive correlation with the parameters studied except reducing sugar percentage. Thus on the basis of result obtained in one year investigation (2014-15) and in the light of the facts mentioned, it can be concluded that foliar spray of bioregulators not only increased the vegetative growth but also increased the yield, physical and physico-chemical Parameters except reducing sugar percent. The present investigation revealed that the effective concentration of undertaken bioregulators can be used to Improve the growth & yield of elephant foot yam especially treatment with triacontanol @ 500 ppm & GA3 @ 200 ppm. Considering these parameters, it is inferred that triacontanol at 500 ppm can be administered with a view for getting maximum net returns in cultivation of elephant foot yam.
Issue Date: 2015

Appears in Collections: Thesis (/handle/1/93550)

Files in This Item:

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
<th>Size</th>
<th>Format</th>
<th>View/Open (/displaybitstream?handle=1/5810019771)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1553 Chandrajeet Prasad.pdf</td>
<td></td>
<td>4.65 MB</td>
<td>Adobe PDF</td>
<td></td>
</tr>
</tbody>
</table>

Show full item record (/handle/1/5810019771?mode=full)  

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.