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RESEARCH ARTICLE

ECONOMIC VIABILITY OF POINTED GOURD CULTIVARS UNDER COASTAL ANDHRA PRADESH.

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Abstract

An experiment was conducted to evaluate the economic viability of twenty two pointed gourd genotypes during *Kharif* season of 2016-17 at College of Horticulture, Dr. Y. S. R. Horticultural University, Venkataramannagudem, West Godavari district, Andhra Pradesh. Among the genotypes, SwarnaAlaukik recorded maximum gross income and high net returns followed by Bengal Rani where as Buguda Local recorded low gross income and net returns from one hectare. High benefit cost ratio was recorded in the SwarnaAlaukik and found to be superior over other genotypes. The low benefit cost ratio was recorded in the genotype Buguda Local.

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Introduction:-

Pointed gourd (*Trichosanthes dioica* Roxb.) is a dioecious, perennial cucurbit vegetable grown in several states of India, and in some other Asian countries. It is known by different names such as Parwar, Patal, Parwal, Potala and Kommupotla, etc. Fruits are rich in vitamin and minerals. The crop is cultivated over an area of 16,000 hectares in India with a production of 2, 43,000 tonnes per hectare (NHB, 2015). It is widely cultivated in Bihar, West Bengal, Odisha, Assam and Uttar Pradesh. Recently, it has been introduced in and around Hyderabad and Bangalore.

There are many genotypes of pointed gourd having diverse characters in different parts of the India. Those genotypes were collected from different parts of the India. There is necessity to know the variation in the yield and economic returns in the available genotypes, relating with different environmental circumstances

Materials and Methods:-

The present study was conducted at the College of Horticulture, Venkataramannagudem, and West Godavari District, Andhra Pradesh, India during *Kharif* season of 2016. The location falls under the Agro-climatic zone no.10, East Coast Plain and Hills (Krishna-Godavari zone) with an average rainfall of 900 mm at an altitude of 34 m (112 feet) above mean sea level. Its geographical position is 16.83° N latitude and 81.5° E longitude. It experiences hot humid summer and mild winters. The treatments comprised of twenty two genotypes of pointed gourd, which were collected from Odisha, West Bengal, Bihar and Jharkhand. The experiment was laid out in a Randomized Block Design (RBD) with three replications. Recommended cultural practices were followed through the growth period to raise a good crop. Pits of size 50 x 50 x 30 cm were dug and filled with soil, cow dung and sand mixed in equal proportion. Manures and fertilizers were applied as per recommendations of Rashid (1993). N, P₂O₅ and K₂O were applied in the form of Urea, Triple Super Phosphate (TSP) and Muriate of Potash (MOP). All the cultural practices were followed in order with almost care and attention.

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The different genotypes of pointed gourd under study were judged on the basis of yield performance and to assess the effectiveness of each individual treatment, the relative economics of each treatment was worked out in terms of benefit cost ratio. The gross realization in terms of rupees per hectare was worked out on the basis of the yield of each treatment and the prevailing price of the produce in the market. The cost of cultivation of pointed gourd was calculated considering the quantity inputs and input services utilized their and market prices. The total costs were deducted from the gross income to obtain net income.

$$B: C \text{ ratio} = \frac{\text{Gross returns (Rs. ha}^{-1}\text{)}}{\text{Total costs (Rs ha}^{-1}\text{)}}$$

Results and Discussion:-

The results obtained from the investigation are presented in Table 1 and 2. To workout gross returns, input-output ratio, net returns over various costs, it is necessary to workout cost of cultivation of pointed gourd crop(Table 1).Among the genotypes of pointed gourd, Swarnaalaukikrecorded highest gross returns (Rs. 485200 per hectare) followed by Bengal Rani (Rs. 354600 per hectare) The genotype Buguda local recorded the lowest gross returns (Rs. 111800 hectare) where as the genotypes of pointed gourd, Swarnaalaukikrecorded highest net returns (Rs. 378497 per hectare) followed by Bengal Rani (Rs. 247897 per hectare) The genotype, Buguda Local recorded lowest net returns (Rs. 5097) .The economic analysis resulted in higher B: C ratio for SwarnaAlaukik (4.54) followed by Bengal Rani (3.23) .The lower B: C ratio was obtained with Buguda Local (1.04). Similar findings reported by Khunt and Desai (1996) in pointed gourd ,Patel *et al.* (2013) in cucumber, Rana*et al.* (2003) in Rajmash and Saikia*et al.* (2001) in cucumber.The cost of cultivation of pointed gourd was found to be Rs 1, 06,703 per hectare. Economic analysis of different genotypes of pointed gourd is

Table 1:-Cost of cultivation of pointed gourd per hectare

S. No	Cost Particulars	Qty	Unit Price (Rs.)	Total (Rs.)
A. Labour Costs				
1	Tractor ploughing	4 hrs	1000/-	4000/-
2	Cleaning field and bunds	20 MD	200/-	4000/-
3	Lay out and pit making	38MD	200/-	7600/-
4	Pit filling with compost and basal fertilizers	30MD	200/-	6000/-
5	Planting	30 MD	150/-	4500/-
6	Staking	19MD	200/-	3800/-
7	Pruning of lateral vines	20MD	200/-	4000/-
8	Irrigation(need based)	16MD	200/-	3200/-
9	Application of fertilizers	20 MD	200/-	4000/-
10	Application of plant protection chemicals	8MD	200/-	1600/-
11	Harvesting and post harvest handling	96 MD	150/-	14400/-
SUB TOTAL				57100/-
B. Input Costs				
1	Cost of cuttings	2500 Nos	8/-	20000/-
2	Manure or compost	10MT	1000/-	10000/-
3	Staking(GI wires& thread)	150kg	60/-	9000/-
4	Fertilizers			
	Urea	62.10kg	10.50/kg	652/-
	Ssp	86.40kg	16.22/kg	1401/-
	Mop	60kg	7.50/kg	450/-
5	Plant protection chemicals	400g	600/-	2400/-
6	Irrigation charges			3200/-
SUB TOTAL				47103/-
C. Miscellaneous				2500/-
GRAND TOTAL				1,06,703/-

Table 2:-Economics of different pointed gourd genotypes

Treatments	Fruit yield (t/ha)	Gross returns	Net returns	Benefit: cost ratio
Chandramukhi	13.06	261200	154497	2.44
Bengal Jyoti	14.93	298600	191897	2.79
Khandagiri	15.86	317200	210497	2.97
Bengal Rani	17.73	354600	247897	3.23
Ghantikeshari	13.06	261200	154497	2.44
Rayagada local	7.46	149200	42497	1.39
Coochbehar local	6.07	121400	14697	1.13
Nadini	11.19	223800	117097	2.09
Gaya local	11.19	223800	117097	2.09
Ghiapotal	5.97	119400	12697	1.11
Madanpur local-1	16.79	335800	229097	3.14
Puri local-1	6.53	130600	23897	1.22
Pipli local	6.53	130600	23897	1.22
Puri local-2	13.10	262600	155897	2.46
Patna local	12.41	248200	141497	2.32
Swarnaalaukik	24.26	485200	378497	4.54
Buguda local	5.59	111800	5097	1.04
Madanpur local-2	7.09	141800	35097	1.32
Jharkhand local-1	6.34	126800	20097	1.18
Jharkhand local-2	7.37	147400	40697	1.38
Sakhigopal local	10.26	205200	98497	1.92
Bhubaneswar local	12.03	240600	133897	2.25

As the objective of any farmer is to realize maximum profits from the crop cultivated, the study indicated that farmers can choose their profitable cultivar viz., SwarnaAlaukik as they had recorded highest gross returns, net returns benefit –cost ratio among all the cultivars studied.

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