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Performance of Kheksi (*Momordica dioica* Roxb.) genotypes in northern hill zone of Chhattisgarh

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Abstract
Kheksi (Momordica *dioica* Roxb. 2n = 28) belongs to the family of Cucurbitaceae and it is a nutritionally, diocious and perennial having a wide range of adoptability distributed in tropical and sub-tropical parts of India. It is popularly known as Kankoda, Teasel gourd, Spine gourd, Kantola, Meetha Karela and is cultivated by a small group of Triable farmers of Chhattisgarh state .The green fruits of Kheksi are used for vegetable purpose. In order to increase its productivity an evaluation work on performance of various promising genotypes was carried out for present study. On the basis of two years yield data, Ambika 12-2, Ambika 12-1 (now a day its released by name of Chhattisgarh Kankoda-2 and Ambika 12-3 were found significantly better in green fruit yield, early picking with more number of green fruits / plant than the RMF-37 (Indira Kankoda-1). Therefore, these genotypes were identified and recommended for cultivation of Kheksi genotypes in Northern Hill Zone of Chhattisgarh state.

Keywords: Kheksi, genotypes, yield and components

Introduction
Kheksi (*Momordica dioica* Roxb. Ex. Willd.) is a native of tropical regions in Asia, Polynesia besides tropical Africa and South America . Fruits are used as vegetable. Kheksi fruit per 100 g edible part contains moisture 84.1 g, fat 1.0 g, fiber 3.0 g, carbohydrate 162 mg, protein 3.1 g, calcium 33 mg, iron 4-6 mg, riboflavin 0.18 mg. Spine gourd has a number of problems including low yield. Fruits became inedible at maturity owing to the presence of large number of hard seeds .Low rate of rhizome production; germination of seeds is very low (maximum 30%), non-availability of improved varieties and unpredictable sex ratio in seedling plants. Therefore, a trial was constituted to see the performance of different genotypes obtained from different coordinating Centres of All India Coordinated Research Network on Underutilizes Crops, ICAR, and New Delhi.

Materials and Methods
Seven promising genotypes were evaluated at Raj Mohini Devi College of Agriculture and Research Station, Ambikapur (Chhattisgarh) during Kharif 2012 and 2013 in Randomized Block Design with three replications. Among seven genotypes, three genotypes of NDM-2, NDM- 3, NDM-4 were obtained from NDUAT, Faizabad; three genotypes of Ambika 12-1, Ambika 12-2, Ambika 12-3 were collection from Triable areas of Chhattisgarh and RMF -37 (Indira Kankoda -1, already released by CVRC as a National check). All these genotypes were tested under AICRN on Underutilized Crops as a Initial Varietal Trial with plot size of 2mx2m and fertilization of 30:60:40 NPK kg /ha. Male and female ratio (1:8) was maintained for proper pollination and higher fruit yield. All the recommended agronomical practices were followed. Five competitive plants were recorded for days to first picking, days to last picking, number of fruits/ plant, number of seeds/ fruit, 100 seed weight (g) and green yield/plant (q/ha).

Results and Discussion
Green fruit yield and its contributing traits in different genotypes studied showed significant differences during Kharif 2012 and Kharif 2013 (Table-1). Ambika 12-2 gave highest green fruit yield (29.90 q/ha) which was followed by Ambika 12-1 (23.98 q/ha) and Ambika 12-3 (21.90 q/ ha). These genotypes better performed than the RMF-37 (Indira Kankoda-1) as a National check (17.83) on the basis of two years yield response. Out of seven genotypes, Ambika 12-1 (now this entry has been released by State Release Committee, Chhattisgarh

Table 1: Mean fruit yield and its contributing traits in Kheksi genotypes

S.N.	Genotypes	Days to first picking of fruits	Days to last picking of fruits	Number of seeds / plant	100 seed weight (g)	Number of fruits/ plant	Green fruit yield (q/ha)		Mean yield (q./ha)
							2012	2013	
1	NDM-2	51	111	11	9.1	124	19.56	16.24	17.90
2	NDM-3	70	130	13	7.4	120	12.08	09.15	10.60
3	NDM-4	54	114	12	8.6	126	16.5	14.28	15.39
4	Ambika 12-1	51	111	18	10.5	134	21.75	24.42	23.08
5	Ambika 12-2	60	120	23	7.9	130	23.00	35.95	29.47
6	Ambika 12-3	61	121	19	8.25	135	28.42	14.65	21.90
7	RMF-37(Indira Kankoda-1)	61	121	17	9.2	132	18.92	16.75	17.83

during 2016) recorded early picking of fruits, more number of fruits / plant, seeds / plant, 100 seed weight and higher green fruit yield than the National Check variety . Similar findings were reported by Yadav (2016) [2] and contrary with the findings of Singh *et al*., (2001) [1]. Rest of the genotypes were non-significant than the National check variety Indira Kankoda-1. On the basis of present findings Ambika 12-2, Ambika 12-1 (released by the name of Chhattisgarh Kankoda-2) and Ambika 12-3 were found better in fruit yield, early picking and number of fruits / plant than the RMF-37 (Indira Kankoda-1). Therefore, it is identified and recommended for cultivation of Kheksi in Northern Hill Zone of Chhattisgarh.

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