

**Short Communication**

**Collection and Evaluation of Genetic Resources of Tuber Crops in Orissa**

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One of the fastest and the easiest ways of developing improved varieties is to properly exploit the available genetic variability. However, the cultivated, semi-cultivated and even the wild forms in tuber crops have been lost considerably due to erosion and efforts are thus needed to collect and preserve the existing variability. Most tuber crops are highly heterozygous in nature and exhibit considerable variation.

GERMPLASM COLLECTION

Attempts were made to collect variability in tuber crops from indigenous as well as exotic sources, particularly tribal dominated tracts holding different primitive cultivars in the plains and mountains and inhabited by different ethnic groups (Table 1).

TABLE 1. TUBER CROPS COLLECTED AND MAINTAINED AT THE CENTRAL TUBER CROPS RESEARCH INSTITUTE, REGIONAL STATION, BHUBANESWAR

Common Name	Species	Germplasm available
Cassava	<i>Manihot esculenta</i>	(i) Exotic 202
		(ii) Indigenous 34
Sweet potato	<i>Ipomoea batatas</i>	(i) Exotic —
		(ii) Indigenous 139
		(iii) Developed 268
Yams	<i>Dioscorea alata</i>	49
		<i>Dioscorea esculenta</i> 3
		<i>Dioscorea rotundata</i> 5
Aroids	<i>Colocasia esculenta</i>	(i) Indigenous 75
		(ii) Wild 3
	<i>Amorphophallus campanulatus</i>	(i) Indigenous 15
Chinese potato	<i>Coleus parviflorus</i>	1
Arrow root	<i>Maranta arundinacea</i>	1
Yam bean	<i>Pachyrrhizus erosus</i>	1
Total diversity maintained		796

EVALUATION

The germplasm of yams, sweet potato, cassava, aroids and other tuber crops were evaluated for different useful characters under Orissa conditions. Emphasis has been laid on the characters which have bearing on the local needs.

### *Aroids*

The collections of *Colocasia* were evaluated for characters like plant height, number of branches, length of petiole, diameter of petiole, length of leaf, width of leaf, yield of corms, flowering behaviour and pigmentation patterns on leaf, petiole and leaf veins. The collections showed a good range of variability for almost all the characters except number of branches.

### *Cassava*

Extremely good genetic variability was observed in most of the important agronomic traits. Besides, the general screening of cassava germplasm for morphological characters, collections have also been evaluated for characters, such as tuber production, high starch content, lower cyanide content, shade tolerance, tolerance to water logged conditions, flavour of tuber, adaptation to cool temperatures, drought tolerance, high harvest index, shorter crop duration, cooking quality, lower fertilizer requirement and physiological traits.

Two cassava types viz., H-212 and H-125 have been identified as high tuber yielders at 8 and 10 months harvest stage, respectively. Physiological traits associated with productivity, such as retention of leaves on the plant, branching pattern and root bulking were also studied.

The sweet potato types have been evaluated for different characters like vine length, weight of the vine, leaf characters, number of nodes on the stem, flowering behaviour, incompatibility, weight of tubers, shape of tubers, infestation of weevils, sweetness and cooking quality of tubers, etc. The collections have shown variability in almost all the characters studied. Some high yielding types, highly carotenoid type and a type resistant to weevil has been identified from the available germplasm.

### *Yams*

*Dioscorea alata* and *D. rotundata* were evaluated for several useful characters, such as number of tubers per plant and the tuber yield per plant. Varieties Da-25 (1.36 kg per plant) and Da-24 (1.14 kg per plant) were selected for their high tuber yield per plant.