

ARROW ROOT PRODUCING CURCUMA SPECIES IN INDIA

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The genus *Curcuma* (L.) of the family *Zingiberaceae* is Indo-Malayan in origin and is mainly tropical Asian in distribution. It includes several species of economic importance. Apart from turmeric being used as a condiment and medicines and few others as medicinal (Kirtikar & Basu, 1918), several others are used for preparation of arrowroot which is an ideal food for infants and invalids (Anon, 1948). The present report highlights the production of arrowroot from various tuberising species of the genus *Curcuma* in comparison with *Maranta arundinacea*.

During the past, attempts have been made by the station to collect and conserve the genetic resources of turmeric and its related wild and cultivated species in India resulting in amassing over 700 accessions of 31 identified species of *Curcuma*. Out of these 13 identified and 4 unidentified tuberising or sessile finger bearing ones with *Maranta arundinacea*, an introduced arrowroot producing plant have been subjected for the present studies. The local method of extracting arrowroot comprising grinding the fresh cleaned tubers to a fine paste, making a colloidal solution by mixing the paste with fresh water, filtering with a fine seive and subjecting it to sedimentation has been followed. The process of sedimentation has been repeated to obtain almost a colourless sediment of starch granules. The sediment is sun dried and powdered to obtain fine arrowroot. Taste, colour and odour of the starch have been observed and fresh weight and dry weight percentage have also been worked out.

Table 1 shows the origin, status, colour of finger, dry weight% of the underground rhizome and percentage of starch on dry weight and fresh weight basis of tubers from 18 species studied. The results show that *Curcuma malabarica* from Kerala gives the highest fresh weight of tubers (1750 gm/pt) followed by *C. zedoaria* (1250 gm/pt) as compared to

Table 1. Colour, odour, fresh rhizome wt., dry matter% and starch% in *Curcuma* sp.

Species	Rhizome		Rhizome		Starch Dry wt.%	
	Colour	Smell	Fresh wt. g/pt	Dry wt.%	on fresh wt. basis	on dry wt. basis of rhizome
<i>Curcuma zedoaria</i>	orange yellow	camphor	1250	22.73	2.46	3.10
<i>C. caesia</i>	Blue	camphor	313	33.73	0.51	1.52
<i>C. aeruginosa</i>	Virdigris green	"	583	15.69	8.50	17.00
<i>C. malabarica</i>	Light blue	"	1750	20.44	3.77	4.73
<i>C. aromatica</i>	Pale yellow/wight	"	833	24.08	1.37	5.40
<i>C. amada</i>	"	Mango	416	10.67	0.72	6.72
<i>C. frutescens</i>	"	Camphor	266	18.63	1.48	7.92
<i>C. sylvatica</i>	"	"	183	23.49	2.51	10.70
<i>C. raktakanta</i>	"	"	300	13.77	1.23	6.68
<i>C. harita</i>	"	"	500	23.06	5.92	25.02
<i>C. soloensis</i>	Mustard yellow	"	400	23.54	1.55	6.56
<i>C. latifolia</i>	yellow	"	275	23.42	0.69	2.94
<i>C. comosa</i>	pale yellow	"	183	23.49	0.80	3.24
<i>Curcuma</i> sp. No. 207	Mustard yellow	-	283	18.92	3.40	18.22
No.204	"	-	400	22.01	0.25	1.78
No. 181	Yellow	Fruity	370	26.27	4.54	17.29
No. 193	Light mustard yellow	-	100	14.31	0.25	1.78
<i>Maranta arundinacea</i>	White	Odourless	1750	26.38	22.00	30.00

1750 gm/pt in *M. arundinacea*. Maximum dry weight of percentage of starch (8.5%) based on fresh weight of tubers has been obtained in *C. aeruginosa* from North Eastern Region followed by 5.92% in *C. harita* from Kerala as against 22% in *M. arundinacea*. However, a maximum of 25% of arrowroot on

dry weight basis is obtained in *C. harita* followed by 18.22% in *Curcuma* sp. no. 207 as against 30% in *M. arundinacea*. The overall results show that considerable variation exists in arrowroot production ability of the 17 *Curcuma* spp. studied. Though *M. arundinacea* is far more superior to them in all aspects of arrowroot production, the importance of *Curcuma* spp. in this aspect cannot be underscored as these occur in plenty in the rain forests of India and provide very cheap raw-material for arrowroot preparation to tribals and locals.

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