

VAMBAN-1: A NEW HIGH YIELDING VARAGU VARIETY

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ABSTRACT

A high yielding *varagu* culture KMV 20 has been developed through pure line selection under rainfed condition. It recorded a mean grain yield of 1683 kg/ha, registering 58.9, 7.9, 19.3 and 34.3 per cent increased grain yield over the checks Co3, APK 1, PSC 1 and IPS 147-1 respectively. The duration of this culture is 95-100 days. This culture has been released as Vamban-1 for cultivation in dry tracts of Tamil Nadu.

KEY WORDS : High, Yield, Short Duration, Varagu Variety

Varagu (*Paspalum scrobiculatum* L.) is mainly grown as a rainfed crop in an area of about 0.8 lakh ha in Tamil Nadu. Normally long duration *varagu* varieties are grown in this area. With a view to identify a short duration, high yielding *varagu* variety, breeding work was undertaken at the National Pulses Research Centre (NPRC), Vamban and the results are reported.

MATERIALS AND METHODS

Evaluation and selection was made in the available germplasm collection maintained at the NPRC, Tamil Nadu Agricultural University (TNAU), Vamban, Tamil Nadu. A single plant from the entry PALI was identified with high yield in 1982 and the progenies of this plant were evaluated in the subsequent years under rainfed conditions. From the progenies, several lines were evolved. A superior performing line was named as KMV 20. This culture was tested at Vamban and several research station of TNAU and in All India

Co-ordinated Small Millet trials in different states against the local as well as national checks.

RESULTS AND DISCUSSION

The results of the culture KMV 20 *varagu* at NPRC, vamban are presented in Table 1. This culture was tested for ten years (1983 - 1993) along with the checks K 1, Co 2 and Co 3. The grain yield of KMV 20 ranged from 1125 to 3889 kg/ha with a mean yield of 2115 kg/ha. The increase in grain over K 1, Co 2 and Co 3 were 21.8, 51.9 and 58.9 per cent respectively. Under multiplication trials conducted at four research stations in three years along with APK 1 and Co 3, the grain yield ranged from 480 to 1947 kg/ha with a mean yield of 926 kg/ha as against 858 kg/ha recorded by APK 1 and 832 kg/ha recorded by Co3 (Table 2).

The selection KMV 20 was tested under all India Co-ordinated Small Millet Trials in Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Bihar and Tamil Nadu states in five years (1988 -

Table 1. Performance of KMV 20 in Station Trials

Kharif Year	Grain yield (kg/ha)				% of increase over		
	KMV 20	K-1	Co2	Co3	K-1	Co2	Co3
1983	3889	2422	2742	39.9	23.6	23.6	17.8
1984	1361	-	1109	-	22.7	22.7	27.2
1985	2456	1836	1157	33.8	12.3	12.3	61.0
1986	1999	1555	-	28.6	-	-	60.0
1987	2145	2500	1980	-	8.3	8.3	47.1
1988	1754	1238	1122	41.7	56.3	56.3	68.7
1989	1715	1304	1189	31.5	44.2	44.2	39.3
1991	2389	1749	1360	18.9	75.6	75.6	83.0
1992	1125	1194	600	-	87.5	87.5	44.8
1993	2372	1833	1352	29.4	75.4	75.4	74.0
Mean	2115	1737	1331	21.8	51.0	51.0	58.9

Table 2. Performance of KMV 20 in Multilocation Trials

TNAU Research Centres	Grain yield kg/ha			% of increase over	
	KMV 20	APK 1	Co 3	APK 1	Co 3
1989					
Coimbatore	807	763	533	5.8	51.4
Kovilpatti	1007	1270	963	-20.7	4.6
Paiyur	740	840	725	-11.9	2.1
Vamban	1696	1286	1150	31.9	47.5
1992					
Kovilpatti	480	360	540	33.3	-11.1
Vamban	889	548	667	62.2	33.3
Paiyur	802	680	622	17.9	28.9
Coimbatore	493	519	600	-5.0	-17.8
1993					
Coimbatore I	720	570	820	26.3	-12.2
Coimbatore II	680	510	605	33.3	12.4
Paiyur	1947	2219	2105	-12.2	-7.5
Vamban	847	736	652	15.1	29.9
Mean	926	856	832	7.9	11.3

Table 3. All India Co-ordinated Trials

Year	No. of locations	Grain yield kg/ha			% of increase over	
		KMV 20	PSCI	IPS 147-1	PSCI	IPS 147-1
1988	11	1732	1116	1125	55.2	53.9
1989	9	1970	1335	1373	47.6	43.5
1990	8	2270	1860	1460	20.1	55.5
1991	11	2065	2038	1722	1.3	19.9
1992	9	1998	2062	1790	-3.10	11.6
Mean	48	2007	1682	1494	19.3	34.3

Table 4. Quality analysis of *Varagu* cultures

Variety	Starch (%)	Amylose (%)	Protein (%)
KMV 20	74.7	27.29	7.24
Co-3	72.9	26.40	6.86

1992). This culture stood first at the all India level during 1988, 1989, 1990 and second during 1991 with highest mean grain yield. The maximum grain yield of 6134 kg/ha was recorded at Bangalore Centre during the year 1991. It recorded a mean grain yield of 2007 kg/ha as against 1682 and 1494 kg/ha recorded by PSCI and IPS 147-1 respectively. (Table 3)

This culture is highly resistant to sheath blight and headsmut diseases. Besides, it is tolerant to shoot fly also. In quality analysis, the culture KMV 20 recorded higher starch, amylose and protein content (Table 4)

Based on the above desirable features, the culture KMV 20 was released by the Central

Variety Release Committee as All India variety during 1993 and state variety release committee as Vamban-1 during 1995 for general cultivation in dry tracts of Tamil Nadu. The morphological and grain quality characteristics of Vamban-1 *varagu* are as follows:

Plant height (cm)	65-70
No. of productive tiller	10-12
Days to 50% bloom	65-70
Days to maturity	95-100
No. of earheads/plant	20-25
Earhead length (cm)	7-9
No. of seeds/earhead	100-110
1000 grain weight (gm)	5-5.5
Colour of seed	Brown

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