

Table 3. Morphology and grain quality characteristics of ragi culture DPI-1161.

Characters	Description	
Stem	erect	
Plant height	110 cm	
No. of tillers/plant	1 - 3	
Days to 50% flowering	80	
Duration	115 - 120 days	
Earhead size and shape	open	
No. of finger/earhead	6 - 8	
Ear length (cm)	8	
Grain colour	brown	
1000 grain weight (g)	2.7	
Protein (%)	grain	3.34
	straw	1.91
	empty earheads	4.07
Calcium (%)	grain	0.59
	empty earheads	0.58

The mean performance indicated that the culture is capable of yielding on an average 1800 Kg of grain and 4250 Kg of straw under rainfed condition, the increase in grain yield being 18 per cent over Indaf 5 and 55 per cent over traditional local types. It outyielded Indaf 5 by 27 per cent in straw production.

The morphological and grain quality characteristics are presented in Table 3. It is a semi-tall culture growing to a height of 110 cm and matures in 115-120 days. Its

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characteristic trait of open earheads with long fingers facilitates to avoid the attack of pests and diseases during rainy weather and its medium duration is favourable for ripening and harvesting processes during dry weather. The culture is moderately resistant to blast under field condition.

In view of the above desirable attributes, the culture DPI 1161 was released by TNAU as paiyur 1 for rainfed tracts of the region.

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PAIYUR - 1 A NEW HIGH YIELDING SESAMUM STRAIN

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ABSTRACT

A new high yielding sesamum culture DPI 1523, a hybrid derivative of the cross Si 2511 X Si 2314, has been released as Paiyur 1. Maturing in 90-95 days duration, it is best suited to summer irrigated cropping in Tamil Nadu. It gives on an average, 650 Kg of seed yield per hectare under irrigated condition. Resistance to powdery mildew under field condition is an added virtue of this strain.

In Tamil Nadu sesamum is grown during Kharif, cold weather and summer seasons accounting for 1.4 lakh hectares under the

crop. Development of high yielding strain responding to high level of management coupled with resistance to powdery mildew

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Table 1. Mean performance of DPI 1523 sesamum culture

S.No.	Experiment	No. of trials	Seed Yield (kg/ha)					
			DPI 1523	Co 1	TMV 3	TMV 4	TMV 5	TMV 6
1.	Regional Research Station, Paiyur	7	911	756	757	784		
2.	Other Research Stations	10	558	490	505	550	528	501
3.	Adaptive Research Trials	37	464	444	437	446		421
	Mean		644	563	566	596	528	461
	% on Co 1		114.4	100.0	100.5	105.9	93.8	81.9
	% on TMV 3		113.8	99.5	100.0	100.5	93.3	81.4

was felt necessary to boost the production of this oilseed in the State. Therefore research work was undertaken at the Regional Research Station, Tamil Nadu Agricultural University, Paiyur to breed varieties to meet this requirement and the results are reported.

MATERIALS AND METHODS

Crossing work was carried out at Regional Research Station, Paiyur and selections were made at F3 generation. A

homozygous line DPI 1523, of the cross Si 2511 X Si 2314, was tested in Preliminary Yield Trial under irrigated condition during summer 1983. The culture was tested in Advanced Yield Trials for three years from 1984 to 1988. It was further tested under multilocation trials in other research stations of TNAU during 1987 and 1988. Adaptive Research Trials were conducted in 37 locations in 11 districts of the State during 1989.

Table 2. Morphological characters and seed qualities of DPI 1523 sesamum culture

Characters	Description		
	DPI 1523	Co 1	TMV 3
Plant height (cm)	93.5	85.0	90.5
Duration (days)	90 - 95	90	85 - 90
Days to 50% flowering	44	42	42
No. of branches/plant	5.3	4.4	4.0
No. of capsules/plant	70	65	63
No. of locules	4	4	4
Seed colour	Intense dark brown	Intense dark brown	Dark brown
1000-Seed weight (g)	4.6	4.2	4.2
Oil content (%)	51	51	51

Table 3. Reactions of DPI 1523 sesamum culture to powdery mildew under field condition.

Entry	1987 Summer		1988 Summer		Mean (%)	Reaction
	Grade	Percentage	Grade	Percentage		
DPI 1523	1.2	3.2	1.8	7.8	5.5	R
Co 1	1.2	3.2	1.2	3.3	3.3	R
TMV 3	3.4	21.5	3.4	25.3	23.4	MS
TMV 4	3.0	15.3	5.2	40.3	27.8	MS
TMV 5	2.0	10.7	5.3	42.2	26.5	MS
TMV 6	4.3	36.5	5.4	26.3	30.9	S

Grade : 1-7 Scale,

0 : No infection, 1 : 0.1 to 5% leaf area affected, 3 : 6 to 25% of leaf area affected, 5 : 26 to 50% of leaf area affected and 7 : More than 50% leaf area affected

Reaction : R = Resistant (1-10%), MR = Moderately Resistant (11-20%), MS = Moderately susceptible (21-30%) and S = Susceptible (Above 30%).

RESULTS AND DISCUSSION

The mean performance of the culture DPI 1523 at RRS, Paiyur, other research stations of TNAU and in Adaptive Research Trials are presented in Table 1. In the trials conducted at RRS, Paiyur, this culture recorded a mean yield of 911 Kg/ha with an increase of 20 per cent over the checks Co 1 and TMV 3. In other research stations, it has given a mean yield increase of 13.9 per cent over Co 1 and 10.5 per cent over TMV 3.

The results of various trials conducted in research stations as well as in farmers' holdings have conclusively proved the superiority of this culture over the ruling strains. It recorded an overall mean yield of 644 Kg/ha which was 14.3 per cent increase over Co 1 and 13.8 per cent over TMV 3. It also excelled the other standard variety TMV 4 by 9.1 per cent.

The morphological characters and seed qualities of the culture are presented in Table 2. This culture matures in 90-95 days. It is a tall growing profusely branching erect plant type. The presence of dark green leaves and closely set capsules with intense dark brown seeds is the distinguishing morphological characters of this culture. The oil content is 51 per cent which is as good as that of other ruling strains. Besides high yielding potentiality, this culture shows resistance to powdery mildew under field condition, (Table 3). As this disease is more prevalent during summer season, this added virtue of resistance to this disease makes this variety well suited to summer irrigated cropping in the state.

Based on the above desirable features, the culture DPI 1523 was released as Paiyur 1 by TNAU during 1990 for summer irrigated cropping in the State.