

ADAPTABILITY AND ACCEPTABILITY COMPONENTS OF THE RICE CULTIVAR *KUNJUKUNJU*

Cultivars with unknown origin, but with many characteristics of modern genotypes, are designated as non-descript varieties. These are suspected to be even notified varieties, released from research stations within or outside Kerala, but with different names given by farmers unknowingly. Another possibility is that the seeds of promising *pre-release* cultures which were given to farmers for *on-farm* yield verifications and *multilocational minikit demonstrations* might have got multiplied and spread in large areas due to some preferred

traits. There is also a rare possibility of evolution of promising genotypes through natural hybridisation between local and modern varieties. Such non-descript varieties are more common in rice and *Kunjukunju* is one such variety which has got wide acceptability in the central zone of Kerala (Girija *et al.*, 1991). A study was undertaken on *Kunjukunju* at the Regional Agricultural Research Station, Pattambi to study the adaptability and acceptability components, morphological and stress reactions of the cultivar.

Table 1. Yield and yield attributes of *Kunjukunju* types

Type	Days to 50% flowering	Productive tillers per hill	Panicle density per hill	1000 grain weight, g	Grain L/W ratio	Grain yield, kg ha ⁻¹
K1 (Keralassery)	92	4.6	7.05	25.30	2.20	3530
K2 (Muthalamada)	90	4.6	5.19	25.80	3.36	3132
K3 (Kollengode)	100	4.8	7.30	26.07	2.17	3478
K4 (Thrikadiri)	92	5.2	7.08	23.86	2.15	3827
K5 (Vilyam Chathanur)	92	5.0	8.04	25.83	2.26	4273
K6 (Tarur)	92	4.1	6.63	25.83	2.14	3628
K7 (Koyalmanam)	94	4.5	5.70	26.07	2.24	3628
K8 (Thenkurissi)	94	4.5	7.45	25.47	2.22	3678
K9 (Elappully)	94	4.1	6.97	24.17	2.21	3728
K10 (Wadakkancherry)	94	4.7	6.30	26.57	2.22	3529
Jyothy	94	4.2	5.85	28.9	2.72	4274
Pavizham	100	4.6	7.88	25.07	2.07	3596
CD (0.05)						400

Seeds of *Kunjukunju* types were collected from 10 different locations from the districts of Thrissur and Palakkad through the State Department of Agriculture. The K types (*Kunjukunju* types) from different locations were designated as K, to K₁₀ (Table 1). A comparative yield trial with *Jyothi* and *Pavizham* as local checks, was conducted during the *kharif* season of 1993 with three replications. The crop was raised according to

practices recommended by the Kerala Agricultural University (KAU, 1993). Observations on yield attributes, days to 50% flowering, grain yield, reactions to pests and diseases and genetic purity were recorded (Tables 1 and 2) according to Standard Evaluation System for Rice (IRRI, 1975).

All the K types except K₃ reached 50% flowering almost one week earlier to *Pavizham*.

This observation itself rejects the suggested similarity between *Kunjukunju* and *Pavizham*. Being short in duration, K types are preferred by farmers in areas where water scarcity is experienced at the fag end of the crop period during rabi season.

Observations on plant height (data not presented) indicated the short and non-lodging stature of K types and the average height was 75 cm only. Accordingly straw yield was low in K types.

K₄ and K₅ had recorded comparable grain yields with that of *Jyothi* but were significantly superior to *Pavizham*. Other K types, except K₃, yielded on par with *Pavizham*. The high yielding nature of *Kunjukunju* is evident from this observation.

Genetic purity of the cultures was further assessed based on the nature of pigmentation on basal leaf sheath and grain apicules. Individual plants of all the K types except K₃, showed wide variations in their pigmentation. There was no sort of pigmentation in K₃. Pigmented and non-pigmented plants were seen as mixtures in various proportions in all other types. This indicated that *Kunjukunju* is not a genetically pure material but is a mixture of more than one genotype with uniform crop duration and plant height.

Observations on the reactions to the biotic stresses indicated the susceptibility of almost all the types to major pests and diseases prevalent in the state. However, K₅, the highest yielding type had shown only low susceptibility to stem borer, blue beetle and sheath blight compared to other cultures. K₁ was also less susceptible to stem borer and sheath blight. And hence it can be assumed that

further selection pressure in these cultures will yield a multiple tolerant better yielding genotype. The observations thus tend to conclude that the cultivar *Kunjukunju* is not a pureline. It is a mixture of more than one genotypes. The high consumer acceptability of the cultivar can be attributed mainly to red bold grains fetching maximum market prices,

Table 2. Reaction (score) of *Kunjukunju* types to pests and diseases

Types	Pests			Diseases	
	Gall fly	Stem borer	Blue beetle	Blast	Sheath blight
K1	6	4	5	7	3
K2	7	7	3	8	5
K3	6	3	1	5	5
K4	6	9	3	7	5
K5	7	5	3	6	5
K6	7	6	5	7	5
K7	7	6	5	6	1
K8	6	8	5	6	1
K9	7	8	5	7	1
K10	6	8	5	6	7
S. Check	7 (Jaya)	8 (Jaya)	9 (Jaya)	9 (HR12)	9 (IR-50)

high yield potential and short crop duration. The cultivar is generally susceptible to major rice pest and diseases. Purification and selection in the existing cultivars can lead to the evolution of a better yielding, widely adapted rice variety with high consumer acceptability.

REFERENCES

- IRRI, 1975. *Standard Evaluation System for Rice*. International Rice Research Institute, Los Banos, Laguna, Philippines, p. 1-63
- KAU, 1993. *Package of Practices Recommendations*. Directorate of Extension, Kerala Agricultural University, Thrissur, Kerala, p. 1-26
- Girija, T., Ahamed, P., Rajan, K.M., Potty, N.N. and Dev, V.P.S. 1994. *Varietal Position of Paddy in Palakkad District, a Survey Report, 1988-1991*. Regional Agricultural Research Station, Pattambi, p. 1-17