

VOLUME WEIGHT OF IMPORTANT PTB AND HIGH YIELDING RICE VARIETIES

Measure weight or volume weight of paddy is the weight in kilogramme per hectolitre (Chalam *et al.*, 1967). Varietal difference that exists in the volume weight of paddy is mainly due to the differences in size and shape of grains. Size and shape of grains are also influenced by the weather conditions prevailing during the maturing phase of the crop. The volume weight data in respect of the PTB and high yielding rice varieties have not been gathered so far. The present studies were therefore carried out with the above objective.

The measure weight was determined in the Seed Testing Laboratory, Pattambi using the special measure weight equipment. Uniformly dried and cleaned grains were poured to the funnel of the equipment and allowed to run into the measure cup of capacity one litre till it spilled over the receptacle. The heap of the grains in the cup was levelled by using a strike-off-stick. The cup and its contents were weighed on the beam balance provided with the device and the weight was recorded in kilogramme per hectolitre. The moisture content of the samples was estimated by using a universal moisture tester and the weight was recorded adjusting to 14 per cent moisture content.

It was observed that the strains of the first crop season (April-May to August-September) have higher volume weights than those of the second crop season (August-September to October-November). The range of measure weight for the first crop strains was from 58.6 to 64.2 kg per hectolitre with a mean of 61.2, while the second crop season strains had values ranging between 55.9 to 62.4 kg per hectolitre, with an average of only 58.8. PTB-31 among the first crop season strains and PTB-12 among the second crop strains recorded the highest value of measure weight of 64.2 and 62.4 kg per hectolitre respectively.

The high yielding varieties tested also showed a similar trend by recording a higher volume weight during the first crop season (Table 2). The range was from 54.6 to 60.5 and 53.4 to 59.5 kg/hectolitre during the first and second crop season and by IR 8 (60.5) during the first crop season and by IR 20 (59.5) during the second crop season. Bharathy among the medium duration and Jyothy among the short duration recorded lowest volume weight during both the seasons.

The trend of second crop varieties recording lower test weight may perhaps be due to the desiccation of the grains and shrinkage in size brought about by the droughty weather conditions prevailing during the maturing phase of the crop. The conditions during the same phase of the first crop, on the other hand, favour the development of more plumpy and well filled grains.

Table 1
Measure weight of important PTB rice varieties

First crop season strains	Volume weight (kg/hi)	Second crop season strains	Volume weight (kg/hi)
Ptb. 1 (<i>Arayan</i>)	59.4	Ptb. 4 (<i>Vellari</i>)	56.7
Ptb. 2 (<i>Ponnarayan</i>)	58.6	Ptb. 12 (<i>Chitteni</i>)	62.4
Ptb. 5 (<i>Velutharikayama</i>)	59.9	Ptb. 16 (<i>Kavungin Poothala</i>)	57.6
Ptb. 8 (<i>Chuvannari</i> <i>Thavala Kannan</i>)	62.6	Ptb. 16 (<i>-do-</i>)	55.9
Ptb. 9 (<i>Veluthari</i> <i>Thavala Kannan</i>)	63.8	Ptb. 18 (<i>Eravappandi</i>)	61.8
Ptb. 10 (<i>Thekken cheera</i>)	58.9	Ptb. 20 (<i>Vadakkan Chitteni</i>)	61.1
Ptb. 22 (<i>Veluthavattan</i>)	60.3	Ptb. 21 (<i>Thekkan</i>)	57.2
Ptb. 23 (<i>Cheriyar ayan</i>)	62.1	Ptb. 27 (<i>Kodiyar</i>)	58.7
Ptb. 26 (<i>Chenkayama</i>)	62.8	Ptb. 33 (<i>Athikarai</i>)	58.3
Ptb. 31 (<i>Ilappappuchempan</i>)	64.2		
Ptb. 32 (<i>Aruvakkari</i>)	60.9		
Mean	61.2		58.8

Table 2
Measure weight of important high yielding rice varieties

Varieties	Volume weight (kg/hi)	
	I Crop season	II Crop season
IR 8	60.5	57.0
IR 20	60.0	59.5
Jaya	59.2	58.9
Mashoory	59.2	58.7
Aswathy	58.3	58.1
IR 5	58.1	57.0
Sabary	58.1	56.4
H4	57.2	57.2
Bharathy	54.6	53.4
Annappoorna	59.4	59.1
Ronini	58.1	57.4
Triveni	57.4	57.0
Jyothy	56.9	56.1
Mean	58.23	57.37

സംഗ്രഹം

ഒരു *mluv* ചിത അളവ് (ഹെക്ടോലിറ്റർ) നെല്ലിന് എത്രത്തോളം തൂക്കമുണ്ടാകുമെന്നറിയാൻ നാടൻ നെല്ലിനങ്ങളും അത്യുൽപാദനശേഷിയുള്ള നെല്ലിനങ്ങളും പഠനവിധേയമാക്കിയപ്പോൾ, വിരിപ്പുകൃഷിയിൽനിന്നുള്ളവയ്ക്ക് മൂണ്ടകനിൽ നിന്നുള്ളവയേക്കാൾ താരതമ്യേന തൂക്കം കൂടുതലാണെന്നു കണ്ടു. നെൻമണികളിൽ പാലുറയ്ക്കുന്ന സമയത്ത് വയലിലെ ജലക്കുറവാകാം മൂണ്ടകൻവിത്തുകളിലെ ഈ രാജ്യം കാരണമെന്നും അനുമാനിയ്ക്കുന്നു.

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References

Chalam, G. V., Singh, A and Johnson, E. Douglas. 1967. *Seed Testing Manual* ICAR and USAID, New Delhi, 267 pp.

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