

## EFFECT OF DESICCANTS ON RIPENING OF RICE

Pre-harvest desiccation of rice helps in improving threshability, hastening ripening, reducing grain and straw moisture and increasing field recovery of grains. Inorganic chemicals like sodium chloride, potassium chloride, calcium chloride, diammonium phosphate, sodium carbonate and herbicides like 'Gramoxone' were reported to be effective as pre-harvest desiccants (Bhole and Thakur, 1976; Ramanujam *et al.*, 1979 and Sethuraman *et al.*, 1981 b). The Kuttanad rice tract of Kerala is situated one metre below mean sea level. Crop damage is often experienced during the ripening phase of the wet crop due to monsoon and resultant floods. Hence, hastening the harvest of paddy by a week and reduction of grain moisture content with pre-harvest desiccants are advantageous.

With the objective to find out a suitable pre-harvest desiccant, a field experiment was conducted at the Rice Research Station, Moncompu during the wet crop season 1983. The experiment was laid out in randomised block design with three replications. The popular rice cultivar Mo 5 was used as the test variety. The recommended package of practices (Anon., 1983) were followed for raising the crop.

The treatments consisted of three concentrations of sodium chloride (5, 10 and 20 per cent), potassium chloride 5 per cent and Gramoxone 0.01 per cent. Pre-harvest application was done by spraying with a knapsack sprayer @ 500 l/ha on the 23rd day of general flowering. The crop was harvested 48 hours after the treatment application along with the unsprayed parallel control (Control I). Another set of control (Control II) remained in the field for one more week and was harvested on the 32nd day of general flowering. Immediately after harvest the sheaves were threshed manually. Threshability index was estimated as the percentage of grains obtained from five uniform beatings on the floor to the total grain obtained. The grain moisture content was estimated by desiccating in hot air oven at 105°C for 24 hours.

The data on the effects of pre-harvest desiccants on grain moisture at harvest, grain yield, threshability index and germination are presented in Table 1. There is appreciable reduction in grain moisture content due to the application of sodium chloride 20 per cent solution as compared to control I. Reduction in grain moisture content equivalent to 20 per cent sodium chloride solution application could be attained only when the crop was left to natural desiccation for one week (control II). The effectiveness of sodium chloride on reducing grain moisture content has been previously reported by several workers (Ramanujam *et al.*, 1979 and Sethuraman *et al.* 1981 b).

The effect of pre-harvest desiccants on grain yield is not significant. However, maximum grain yield was recorded by the application of sodium chloride 10 per cent solution. Increased field yield due to sodium chloride 10 and 20 per cent solutions has been reported by Sethuraman *et al.* (1981 a) and Nagarajan *et al.* (1981). Similarly, though the threshability index did not differ significantly the highest index was observed in the treatment receiving sodium chloride 10 per cent

solution. Improved threshability of paddy with pre-harvest desiccants was reported by Sethuraman *et al.* (1981a). It can be seen from Table 1 that treatments do not differ significantly with respect to seed germination. This is in conformity with the findings of Sethuraman *et al.* (1981 b).

Table 1  
Effect of desiccants on grain moisture at harvest, yield, threshability and germination in rice.

Treatments	Grain moisture at harvest (%)	Yield (t/ha)	Threshability index	Germination percentage
Sodium chloride 5%	25.90	3,092	62.7	97.7
Sodium chloride 10%	24.20	3,270	73.1	98.3
Sodium chloride 20%	23.10	3,185	62.6	98.3
Potassium chloride 5%	26.00	2,764	67.9	96.7
Gramoxone 0.01%	26.80	2,870	69.8	97.7
Control I	25.70	3,030	71.9	97.3
Control II	20.90	3,187	60.9	96.7
CD (0.01)	2.224	NS	NS	NS

സംഗ്രഹം

നെല്ലിന്റെ വിളവെടുപ്പു ത്വരിതപ്പെടുത്തുന്നതിന് അനുയോജ്യമായ രാസവസ്തുക്കളെ കുറിച്ചുള്ള ഒരു പഠനം മലങ്കമ്പു നെല്ലുഗവേഷണ കേന്ദ്രത്തിൽ നടത്തുകയുണ്ടായി. സാധാരണ വിളവെടുപ്പിന് പത്തു ദിവസം 'ffAnru' പത്തോ ഇരുപതോ ശതമാനം വിര്യമുള്ള കറിയുപ്പ് ലായനി തളിക്കുന്നതുമൂലം, വിളവിനെ ബാധിക്കാതെ തന്നെ, കൈയ്ക്ക് ഓഴ്ച മുമ്പേ നടത്താമെന്നു കാണുകയുണ്ടായി.

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