

NITROGEN USE EFFICIENCY AND GRAIN YIELD OF RICE

It is well known that only less than 50% of applied nitrogen will become available to the rice crop, particularly so under submerged conditions. The investigations carried out by several workers (Sinha, 1964; Singh, 1966; Rajab, 1970 and Bains *et al.* 1971) revealed the superiority of native nitrification inhibitors like oil cakes for increasing the efficiency of urea in rice fields. A study was undertaken to assess the relative field efficiency of four different oil cakes as nitrification inhibitors.

The experiment was conducted at the Instructional Farm and Research Station, Mannuthy, during the first and second crop seasons of 1974-75. The soil of the experimental area was sandy-loam analysing 0.06% of nitrogen, 0.0026% of P_2O_5 and 0.0021% K_2O . The treatments consisted of urea mixed with oil cakes from *Hydnocarpus wightiana* Blume (*marotti*), *Calophyllum inophyllum* L (*punna*) and from *karingotta* at 4:1 on a w/w basis and a control in which urea alone was used. The experiment was laid out in randomised block design with four replicat-ions.

The data on the yield of grain obtained from the different treatments during the first and second crop seasons are presented in Table-1.

Table - 1

Treatments	Yield of grain in kg ha	
	First crop 1974-75 variety <i>Triveni</i>	Second crop 1974-75 variety <i>Aswathy</i>
Urea	5472	4759
Urea + Neem cake	5130	5039
Urea + <i>Marotticake</i>	5250	4811
Urea + <i>Punna</i> cake	5404	4485
Urea + <i>Karingotta</i> cake	5472	4493
F Test	N S	N S
S Em + (0.05)	3.62	0.64
N S	Not significant	

It is seen from the data that none of the treatment is significant in increasing the yield during both the seasons, which indicates that admixture of oil cakes and urea could not increase the efficiency of urea. One of the possible reasons for the lack of response may be the split application of urea which ensures continuous supply of nitrogen during the critical stages of plant growth. Lack of response of oil cakes and some other organic materials was reported by Sadanandan and Sasi-

dhar (1978). The studies conducted at Pattambi also revealed the lack of response of various oil cakes other than rubber cake, in increasing the efficiency of urea (Anonymous, 1975).

സംഗ്രഹം

മണ്ണുത്തി നെൽഗവേഷണ കേന്ദ്രത്തിൽ 1974-75 ലെ വിവിധ, മുണ്ടകൻ എന്നീ വിളകളിൽ നടത്തിയ പരീക്ഷണത്തിൽ, വേപ്പ്, പുന, മരോട്ടി, കരി:ങ്ങാട്ടാ എന്നീ പിണ്ണാക്കുകൾ യുറിയയുമായി 1:4 എന്ന അനുപാതത്തിൽ കൂട്ടിച്ചേർത്തു പ്രയോഗിക്കുന്നതുമൂലം നെല്ലിന്റെ വിളവിൽ യാതൊരു വ്യത്യാസവും സംഭവിക്കുന്നില്ലെന്നു കണ്ടു.

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