

Effect of Nitrogen Management Through Various Proportions of Cakes and Urea on Wheat (*Triticum aestivum* L.)

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Among the various fertilizer nitrogen sources, urea is the most commonly used nitrogen fertilizer for wheat (*Triticum aestivum* L. emend Fiori & Paol.). Considerable quantity of nitrogen is lost through leaching, volatilization and run-off during the crop period. Thus, under such conditions, a suitable combination of organic and inorganic sources of nitrogen assumes special significance to reduce nitrogen losses from field soils. The present experiment was, therefore, conducted to study the effect of nitrogen management through oilcakes and urea on wheat.

The field experiment was conducted in the rabi season of 1995-96 at Junagadh. The soil was clayey having pH 7.8, organic carbon 0.60%, available nitrogen 228 kg/ha, available phosphorus 21 kg/ha and available potassium 130 kg/ha. The treatments comprising 5 oilcakes (castor, mustard, groundnut, cotton seed and neem

seed cakes) at 3 proportions (25, 50 and 75% N) and the check treatment (100% N through urea) were tried in a randomized block design with four replications. The wheat variety 'GW 496' was sown at 22.5 cm row spacing with a seed rate of 120 kg/ha. The crop was fertilized with 120 kg N and 60 kg P_2O_5 /ha. Nitrogen was applied through cakes and urea as per treatments in two splits i.e. at sowing and 20-25 days after sowing. Entire dose of phosphorus in form of single phosphate was given as basal application.

Results revealed that treatments comprising various proportions of cakes and urea manifested statistically equivalent influence on growth and yield attributes of wheat. Application of 50% N through cakes alongwith 50% N through urea slightly improved the growth and yield attributes viz., plant height, effective tillers/m row length, length of spike, spikelets/ spike, grains/spike, grain weight/spike and test weight as compared to application of 100% N through urea. Among the different cakes tried, castor and groundnut cakes were found slightly superior in respect of growth and yield attributes. Application of 50% N through castor cake alongwith 50% N through urea recorded the highest values of growth and yield attributes. Similar results were also reported by Patel (1991).

Combined application cakes and urea gave grain and straw yields equivalent to sole application of urea. Application of 50% N through cakes and 50% N through urea marginally increased the grain and straw yields as compared to 100% N through urea. In this regard, castor and groundnut cakes were found slightly superior to neem seed, mustard and cotton

seed cakes. Application of equal quantity of nitrogen in all the treatments might have been responsible for almost at par influence on growth yield attributes which in turn must have resulted in equivalent grain and straw yields under different treatments. The results corroborates findings of Tripathi (1982) and Dudhat *et al.* (1996).

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