

Effect of Nitrogen Management Through Cakes and Fertilizer on Growth and Yield of Mustard (*Brassica juncea* L.)

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At present the most rational and practical means to maintain soil fertility and productivity at a maximum level is periodic addition of properly processed manures in conjunction with chemical fertilizers. The present experiment was, therefore, conducted to study the effect of nitrogen management through cakes and fertilizer on growth and yield of mustard (*Brassica juncea* (L.) Czernj & Cosson).

The field experiment was carried out in the *rabi* season of 1995-96 at Junagadh. The soil was clayey having pH 7.7, organic carbon 0.68%, available nitrogen 217 kg/ha, available phosphorus 31 kg/ha and available potassium 310 kg/ha. Treatments comprising 5 oilcakes (castor, mustard, groundnut, cotton seed and neem seed cakes) at 3 proportions (25, 50 and 75% N) alongwith one check treatment (100% N through urea) were tried in a randomized block design with four replications. The crop was fertilized with 50 kg N and 50 kg P_2O_5 /ha. The different cakes and urea as

per treatments as well as entire dose of phosphorus in form of single super phosphate were applied in furrows before sowing and remaining quantity of nitrogen as per treatments was top-dressed as urea at 40 days after sowing. The mustard variety 'Gujarat Mustard-1' was sown at 45 cm row spacing with a seed rate of 3.5 kg/ha. Thinning was done at 15 days to maintain plant-to-plant distance of 10 cm.

Results revealed that various proportions of cakes and urea manifested statistically equivalent influence on growth and yield attributes of mustard viz; plant height, primary branches/plant, seeds/silique, length of silique, siliquae/plant, seed weight/plant and test weight. Treatments comprising application of 50% N through cakes alongwith 50% N through urea marginally improved the growth and yield attributes as compared to sole application of urea. Castor and groundnut cakes were found slightly superior in respect of growth and yield attributes as compared to rest of the cakes.

Combined application of cakes and urea recorded seed and stover yields equivalent to sole application of urea. Application of cakes and urea at the proportion of 50:50% N slightly increased the seed and stover yields than 100% N through urea. In this regard, castor and groundnut cakes were found slightly superior to neem seed, cotton seed and mustard cakes.

Effect of various proportions of cakes and urea on growth and yield of mustard.

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Application of 50% N through castor cake alongwith 50% N through urea recorded the highest seed and stover yield. This type of trend in growth and yield attributes ultimately

resulted in equivalent seed and stover yields under different treatments. Similar results were also reported by Tripathi (1982), Patel (1991) and Dudhat *et al.* (1996) in wheat crop.

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