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Short Communications

A Note on Effect of Spacing, Seed Rate and Nitrogen on Seed Production of Oats (*Avena sativa* L.)

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Fodder crops are usually shy seeders and hence seed supply in ample quantity has been found to be a bottleneck in the spread of fodder development programme. In view of this need based problem, it was thought necessary to study ways and means to increase seed production of an important fodder crop of Oats, using variety 'kent' and by adopting suitable agronomic practices.

This investigation was conducted on the farm of the Gujarat Agricultural University at Anand campus during the winter season of 1974-75 on sandy loam soil of alluvial origin. The initial soil fertility status indicated that the total nitrogen, available P_2O_5 and K_2O contents were 672, 61 and 309 kg/ha, respectively. The soil pH was 7·5.

The experiment was laid out in a double split-plot design with four replications. The treatments comprised combinations of three inter-row spacings (20, 40 and 60 cm) in the main plots, three seed rates (40, 60 and 80 kg/ha) in the sub-plots and four nitrogen levels (40, 80, 120 and 160 kg/ha) in the sub-sub plots. The gross and net plot sizes were $2{\cdot}4 \times 5{\cdot}0$ m² and $1{\cdot}6 \times 4{\cdot}2$ m², respectively. The source of N was urea, of which 50% was applied at sowing as per treatments in addition to 60 kg P_2O_5/ha as single superphosphate and equal dose of potash as muriate of potash. Sowing was done on November 22, 1974. In all, eight irrigations were given during the life period of the crop. The crop was harvested on Man 4, 1975.

The results revealed that seed and straw yield differences due to different row spacings and seed rates were not significant. The seed yield was maximum (1278 kg/ha) under the lowest level of 40 kg N/ha and it was at par with 80 kg N/ha (1277 kg/ha). These two treatments were significantly superior to higher levels of 120 and 160 kg N/ha which produced seed yield of 976 and

930 kg/ha, respectively. The latter two treatments were at par. In the case of straw yield, the treatments of 120 kg N/ha (12787 kg) and 40 kg N/ha (12768 kg) were at par and significantly superior to 80 and 160 kg N/ha which yielded 12,158 and 12,113 kg/ha, respectively. Such difference due to 80 and 160 kg N/ha was not significant. The maximum weight of 1000 grains (48·61 g) was recorded under 80 kg N/ha followed by 40, 160 and 120 kg N/ha (46·69, 45·68, and 44·15 g, respectively), the differences being significant at each level. The data also showed that there was increase in protein content with increase in the level of nitrogen, the variation being from 14·93 to 17·29%. The differences were significant at each level. It was thus obvious that best performance of 'Kent' oats in respect of seed yield can be achieved by drilling with a spacing of 60 cm between rows @ 40 kg seed/ha and fertilizing @ 40 kg N/ha when N status of soil is satisfactory.

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