

EFFECT OF RATE AND TIME OF N APPLICATION ON YIELD OF TWO COTTON VARIETIES

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Two field experiments were conducted to see the effect of N and P fertilizers on seed cotton yield and quality characteristics of varieties NIAB-78 and NIAB-86. Nitrogen application significantly increased the seed cotton yield of both the varieties while applied P had no effect. However, P applied with N had favourable effect on seed cotton yield. The optimum dose for both the varieties appeared to be 100 kg N ha⁻¹, although at different application timings. Variety NIAB-86 gave higher ($P < 0.05$) seed cotton yield than NIAB-78. The G.O.T. values of NIAB-78 were higher than that of NIAB-86 and reverse was true in case of staple length which was 30 and 28 mm in NIAB-86 and NIAB-78, respectively.

INTRODUCTION

Cotton is the most important cash crop of Pakistan. Unfortunately its per hectare yield in the country is very low compared to other cotton growing countries of the world (World Statistics 1990). Efforts to increase the yield are continuing through evolving new varieties and adopting better package of technology. Plant breeders of NIAB have also contributed to increased per hectare yield through evolution of high yielding and disease resistant varieties like NIAB-78 and NIAB-86 (Twenty years of NIAB, 1992). Optimum use of fertilizers is essential for obtaining the near potential yield of any variety. Experiments conducted elsewhere have shown a significant response in seed cotton yield to N application and no response to P applied alone or in combination with N (Ali *et al.*, 1970; Malik and Malik 1987), while other researchers have shown

replicates. Four plant rows of each variety were sown in a 3 x 6m² plot. At maturity, fifty bolls of each variety were collected randomly from each plot for determining ginning out turn and staple length. Seed cotton yield was recorded.

Experiment 2:

The second experiment was conducted at NIAB, Farm during 1988 to determine the optimum N dose and time of application. The soil was silty loam with NaHCO₃ P, 6.22 mg kg⁻¹; organic matter, 0.75%; total N, 0.035%, and pH, 7.8. Four levels of N, 0, 50, 100 and 150 kg ha⁻¹ were tested. Each level was split into equal parts and applied at sowing and 1st irrigation. The 100 kg N ha⁻¹ level was further repeated by applying in two splits in all possible time combination from sowing to 3rd irrigation. Phosphorus at the rate of 50 kg P₂O₅ ha⁻¹ was applied as basal dressing at sowing. The experiment was laid out in a

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Table 1. I
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Treatment

kg ha⁻¹

N F

0

40

80

120