Effect of N and P levels and biofertilizers on the growth and yield of wheat under late sown irrigated conditions

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ABSTRACT
A field experiment was conducted during the rabi season of 2002-2003 at the wheat research unit of Dr.P.D.K.V. Akola to study the effect of N and P levels and biofertilizers on the growth and yield of wheat under late sown irrigated conditions. Four NP fertilizer levels (0:0, 40:20, 60:30 and 80:40 kg NP/ha corresponding to control, 50%, 75%, and 100% RDF) in main plots and four biofertilizer treatments (control, Azotobacter, Phosphate Solubilizing bacteria (PSB) and coinoculation of Azotobacter+ PSB) in subplot were replicated four times in split plot design. The growth and yield attributes showed an increase with increase in the NP fertilizer levels. 100% RDF recorded significantly highest grain yield (32.40 q/ha) and staw yield (39.78 q/ha). Azotobacter and PSB inoculation, being at par caused significant improvement in the growth and yield attributes over control. Co-inoculation of both the biofertilizers further increased the growth and yield attributes over individual inoculation. Combined inoculation yielded maximum grain yield (26.06 q/ha) and staw yield (33.69 q/ha). Interaction effect showed that application of 60:30 kg N:P/ha (75% RDF) coupled with combined inoculation registered significantly higher grain yield (30.96 q/ha) of wheat with higher net profit, B:C ratio than those with 80:40 kg N:P/ha (100% RDF) (30q/ha) without biofertilizer inoculation. Thus 25% saving in nitrogen and phosphorus application could be possible with combined inoculation of Azotobacter+ PSB.

Key words: Wheat, Nitrogen, Phosphorus, Biofertilizer, Late sown, Irrigated conditions.