

## RESEARCH ARTICLE

# Effect of integrated nutrient management on growth, herb yield and quality of alfalfa during *Rabi* season under central dry zone of Karnataka

■ Nagappa Desai, A.P. Mallikarjuna Gowda and T.S. Sukanya

### SUMMARY

The experiment was conducted to study the effect of integrated nutrient management on growth, herb yield and quality of alfalfa (*Medicago sativa* L.) at the farm field of Krishi Vigyan Kendra, Konehalli, Tiptur, Tumkuru district under Central dry zone (Zone-4) of Karnataka state during *Rabi* seasons. The results revealed that the maximum plant height at 30 DAS (43.12 cm), first (85.63 cm), second (86.00 cm), third (92.10 cm), fourth (95.45 cm), fifth (92.30 cm), sixth (88.90 cm) and seventh harvest (86.79 cm) during *Rabi* season was recorded, when plants were supplied with 50 % RDF + 25 % N through vermicompost + *Rhizobium* + PSB + VAM. The least plant height was recorded with the application of 10 t/ha FYM + 100 % N through FYM at 30 DAS and all the harvests. The similar results were recorded the maximum number of branches and leaves per plant with application of the 50 % RDF + 25 % N through vermicompost + *Rhizobium* + PSB + VAM. The maximum fresh and dry herb yield per hectare was recorded at first (178.70 q and 26.30 q), second (213.89 q and 31.44 q), third (217.13 q and 31.94 q), fourth (218.98 q and 33.08 q), fifth (216.20 q and 31.81 q), sixth (208.33 q and 30.65 q) and seventh harvest (200.00 q and 29.40 q), respectively during *Rabi* season with the application of 50 % RDF + 25 % N through vermicompost + *Rhizobium* + PSB + VAM. Whereas, the lowest fresh and dry herb yield per hectare was recorded, when plants supplied with 10 t/ha FYM + 100 % N through FYM at all the harvests. The plants received with 50 % RDF + 25 % N through vermicompost + *Rhizobium* + PSB + VAM has resulted maximum nitrogen content of plant at first (1.15 %), second (1.14 %), third (1.15 %), fourth (1.12 %), fifth (1.09 %), sixth (1.06 %) and seventh harvest (1.05 %) during *Rabi* season, which was at par with the application of 50 % RDF + 25 % N through poultry manure + *Rhizobium* + PSB + VAM at first and third harvests. The application of 10 t/ha FYM + 100 % N through FYM recorded lowest nitrogen content of plant in at all the harvests. Therefore, 50 % RDF + 25 % N through vermicompost + *Rhizobium* + PSB + VAM may be recommended for commercial cultivation of alfalfa during *Rabi* season under central dry zone of Karnataka.

### MEMBERS OF THE RESEARCH FORUM

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