



## RESEARCH PAPER

# Effect of cutting schedules and nitrogen management on forage and seed production of oats (*Avena sativa* L.)

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**Abstract :** A field research entitled “Effect of cutting schedules and nitrogen management on forage and seed production of oats (*Avena sativa* L.)” was conducted to find out the effect of cutting schedules (uncut, cut at 50 DAS and cut at 60 DAS) and nitrogen management (120 kg N ha<sup>-1</sup>, 90 kg N ha<sup>-1</sup> + one spray of nano urea 2 ml litre<sup>-1</sup>, 90 kg N ha<sup>-1</sup> + one spray of nano urea 4 ml litre<sup>-1</sup>, 60 kg N ha<sup>-1</sup> + two sprays of nano urea 2 ml litre<sup>-1</sup> and 60 kg N ha<sup>-1</sup> + two sprays of nano urea 4 ml litre<sup>-1</sup>) on productivity of oats and find out the effect of foliar application of ‘Nano Urea’. The results revealed that significantly higher plant height, number of tiller 0.5 m<sup>-1</sup> row length and dry matter accumulation 0.5 m<sup>-1</sup> row length were observed under uncut over cut at 50 DAS and cut at 60 DAS. The results revealed that cut at 60 DAS resulted in significantly higher green fodder yield as compared to cut at 50 DAS. Yield parameters viz. number of effective tillers 0.5 m<sup>-1</sup> row length, panicle length, number of grains panicle<sup>-1</sup>, 1000 grain weight, weight of grain 0.5 m<sup>-1</sup> row length, grain, straw, biological yield and harvest index of oat was significantly higher under uncut as compared to cut at 50 DAS and 60 DAS. Grain yield increased under uncut over cut at 60 DAS by 146.8 per cent and straw yield increased under uncut over cut at 50 DAS and cut at 60 DAS by 69.1 and 182.7 per cent, respectively. Further, uncut recorded significantly higher nitrogen, phosphorus and potassium content and uptake in grain and straw as compared to cut at 50 DAS and 60 DAS. Further, number of tiller and dry matter accumulation increased with the application of 120 kg N ha<sup>-1</sup>. Significantly higher green (35.02 t ha<sup>-1</sup>) and dry (7.35 t ha<sup>-1</sup>) fodder yield was obtained with the application of 120 kg N ha<sup>-1</sup> as compared to application of 60 kg N ha<sup>-1</sup> + two sprays of nano urea 2 ml litre<sup>-1</sup> and 60 kg N ha<sup>-1</sup> + two sprays of nano urea 4 ml litre<sup>-1</sup>, however, it was at par with application of 90 kg N ha<sup>-1</sup> + one spray of nano urea 2 ml litre<sup>-1</sup> and 90 kg N ha<sup>-1</sup> + one spray of nano urea 4 ml litre<sup>-1</sup>. Yield parameters viz. number of effective tillers and 1000 grain weight increased with the application of 120 kg N ha<sup>-1</sup>. Further, grain yield increased with the application 120 kg N ha<sup>-1</sup> over 90 kg N ha<sup>-1</sup> + one spray of nano urea 2 ml litre<sup>-1</sup>, 90 kg N ha<sup>-1</sup> + one spray of nano urea 4 ml litre<sup>-1</sup>, 60 kg N ha<sup>-1</sup> + two sprays of nano urea 2 ml litre<sup>-1</sup> and 60 kg N ha<sup>-1</sup> + two sprays of nano urea 4 ml litre<sup>-1</sup> by 17.4, 14.2, 35.1 and 28.2 per cent, respectively. Straw yield increased with the application of 120 kg N ha<sup>-1</sup> over 60 kg N ha<sup>-1</sup> + two sprays of nano urea 2 ml litre<sup>-1</sup> by 15.3 per cent. Further application of 120 kg N ha<sup>-1</sup> recorded higher phosphorus and potassium content over rest of the treatments.

**Key Words :** Oats, Cutting schedules, Nitrogen management, Nano urea, Green fodder, Grain yield, Net return

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