

RESEARCH ARTICLE

Optimizing the fertilizer requirement for economic yields through response curve in sunflower genotypes

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ABSTRACT

A field experiment was conducted at College of Agriculture Rajendranagar, Hyderabad (AP) India to estimate the nutrient removal by leaves, stems, and seeds for the optimal fertilizer requirement to obtain economic yield and to estimate the response curve of nitrogen for two genotypes (Morden and KBSH-1) of sunflower with six levels of fertilizer application during the *Kharif* season in the year 2005-06. The results revealed that nitrogen removal by leaves of sunflower in case of genotype KBSH-1 was significantly higher than that of Morden in all the growth stages except at 75 days after sowing (DAS). The removal of nitrogen by sunflower leaves was not significantly influenced by different levels of fertilizer nutrients at 30 days after sowing. However, the application of 60 kg N ha⁻¹ was the outstanding treatment to absorb adequate quantity of nutrients for the production of high seed yield. Further, the two genotypes removed relatively more N through the leaves than the stem in the vegetative phase at 30 DAS. Hence, the dry weight of leaves was more than the stem at this stage. The removal of N was slightly more in the stem than in the leaf during the bud stage of the crop. Maximum quantities of nutrients was absorbed by the stem during flowering stage. The study also revealed that, response curve indicated with incremental levels of nitrogen which showed that the seed yield of Morden can be maximized by an increase in nutrient upto 125 kg ha⁻¹ and 126 kg ha⁻¹ for KBSH-1.

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