

## Determining appropriate number of forage cutting for high graded quality seed and fodder productivity of berseem (*Trifolium alexandrinum* L.) under different concentration of $KNO_3$

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### SUMMARY

An experiment was conducted during winter season of 2002-2003 and 2003-2004 at C.S. Azad University of Agriculture and Technology, Kanpur. Berseem is a multicut forage crop due to its regenerative characteristics having a negative correlation between green fodder production and seed yield over the variety "Wardan" which was cut five times. The first cutting was done at 45 days while subsequent cuttings were done at 25 days interval. Three levels of growth promoter  $KNO_3$  ( $K_1$  0,  $K_2$  2.0 and  $K_3$  2.5 kg/ha) were applied as foliar sprays at the time of flowering initiation stage. The higher level of  $KNO_3$  @ 2.5 kg/ha produced maximum green forage yield as compared to control during both the years at fourth cutting. during II<sup>nd</sup> year, highest seed yield was obtained from dose of  $KNO_3$  at second cutting stage against the control in both the experimental years.

**Key words :** Multicut forage,  $KNO_3$ , Regenerative, Correlation

**G**reen fodder of berseem is palatable and useful for the health of animals, especially milch animals. The berseem fodder on dry weight basis contains 18-21 per cent protein, 1.98% calcium, 0.64% phosphorus which are the basic requirement for the milch animals and has got 70.75% digestibility. berseem is shy in seed bearing. Whereas, seed in sufficient quantity of high quality is essentially required for raising forage grass. In general, it has been in practice that the crop is left after harvesting of maximum possible green fodder, which resulted into low seed production (3-5 q/ha). Since the berseem is multicut forage crop, it is essential to standardize the appropriate cutting after which the maximum possible good quality seed can be also produced with or without use of growth promoter or retardant which have direct effect on flowering, seed setting and healthy sink capacity.

### MATERIALS AND METHODS

The experiment was conducted during *Rabi* season of 2002-2003 and 2003-2004 at C. S. Azad University of Agriculture and technology, Kanpur. The berseem (*trifolium alexandrinum* L.) variety "Wardan" was selected on the basis of its popularity in form of green fodder. The treatments consisted of five cuttings ( $C_1$ ,  $C_2$ ,

$C_3$ ,  $C_4$  and  $C_5$ ) and three levels of growth promoter ( $KNO_3$ ). first cutting was done at 45 days, while subsequent cuttings were done after 25 days interval and after final cutting, the crop was left for seed production. the three doses of  $KNO_3$  such as  $K_1$  (0 kg/ha control),  $K_2$  (2.0 kg/ha) and  $K_3$  (2.5 kg/ha) in the form of solution were applied as foliar sprays at initiation of flowers after each cutting. The experiment was conducted in randomized block design with three replications. Each plot consisted of  $2 \times 1.5m^2$  having five rows 30 cm apart. The length of rows was 2.0 m and plant to plant distance was maintained at 8-10 cm. Agronomical practices were followed for raising good crop in both the years. observations were recorded on forage yield after each cutting and finally the harvested unprocessed seed yield. Unprocessed seed yield received directly after threshing the processing plant. The processing of these smaller seed of berseem passed through round mess size 2.4 mm and slotted mess size 1.25 mm ultimately, clean seed of uniform size was procured as quality seed and was weighted to record the processed seed yield/plot in gram and converted in quintal per hectare with multiplying factor.

### RESULTS AND DISCUSSION

Analysis of variance for first cutting (Table 1) indicated non-significant differences of  $KNO_3$  application on forage yield (Table 3) at either of its doses during both the years. Analysis of variance for second cutting (Table 1) exhibited non-significant values for all the three doses of  $KNO_3$ . The results (Table 3) showed that the forage production at second cutting was numerically higher due

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