**ABSTRACT**

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| Title of Thesis | : | Effect of Different Times and Modes of De-topping on the Productivity and Profitability of Maize (*Zea mays* L.) Under Mid Hills |
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**Abstract**

An experiment entitled, **“Effect of Different Times and Modes of De-topping on the Productivity and Profitability of Maize (*Zea mays* L*.*) Under Mid Hills”** was conducted at the Regional Agricultural Research Station, Rajouri of Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu, during the *kharif* season of 2021. The soil of the experimental site was silty clay in texture, slightly acidic pH (6.8) in reaction, medium in organic carbon (6.30 g kg-1), available phosphorus (14.6 kg ha-1) and potassium (163.9 kg ha-1) but low in available nitrogen (247.6 kg ha-1). The experiment was conducted in randomized block design with three replications. The experiment consisted of 10 treatments *viz*. Control (**T1**), de-topping up to base of the top two leaves after 10 days of tasseling (**T2**), de-topping up to base of the top four leaves after 10 days of tasseling (**T3**), de-topping up to base of the top six leaves after 10 days of tasseling (**T4**), de-topping up to base of the top two leaves after 15 days of tasseling (**T5**), de-topping up to base of the top four leaves after 15 days of tasseling (**T6**), de-topping up to base of the top six leaves after 15 days of tasseling (**T7**), de-topping up to base of the top two leaves after 20 days of tasseling (**T8**), de-topping up to base of the top four leaves after 20 days of tasseling (**T9**) and de-topping up to base of the top six leaves after 20 days of tasseling (**T10**). Maize cultivar VMH-45 was sown at a spacing of 75 cm × 20 cm. The crop was fertilized with recommended dose of nutrients (90: 60: 30 kg ha-1 N: P2O5: K2O respectively) through Urea, DAP and MOP. De-topping of maize crop was done as per the technical programme of the experiment.

The results revealed that control recorded significantly highest growth parameters *viz;* plant height, number of leaves plant-1, dry matter accumulation and leaf area index as compared to other treatments. Significantly, higher yield and yield attributes *viz;* number of cobs plant-1, length of cob, cob girth, cob weight, number of grain row cob-1, number of grains cob-1, 100 grain weight, grain yield and stover yield was also recorded with control which was found to be statistically at par with the de-topping up to base of the top two leaves after 20 days of tasseling. However, significantly higher fresh and dry weight of de-topped portion and grain equivalent yield was recorded with de-topping up to base of the top six leaves after 10 days of tasseling. Significantly higher NPK uptake by grain and stover was observed in control which was at par with the de-topping up to base of the top two leaves after 20 days of tasseling. Maximum gross returns and net returns was observed with de-topping up to base of the top four leaves after 20 days of tasseling which was closely followed by de-topping up to base of the top two leaves after 20 days of tasseling, whereas with regard to B: C ratio, highest was recorded in de-topping up to base of the top two leaves after 20 days of tasseling which was closely followed by de-topping up to base of the top four leaves after 20 days of tasseling.

Hence, on the basis of one season study, it was concluded that de-topping up to base of the top two leaves after 20 days of tasseling was found to be most economical for realizing higher yield and B: C ratio.

**Keywords:** De-topping, Tasseling, Maize, Grain equivalent yield, Forage

Signature of Major Advisor Signature of the Student