

## Integrated weed management cotton (*Gossypium hirsutum* L.) in conventional and ultra narrow row spacing system

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**Summary** The effect of cultivation system, weed control treatments, and their interaction on cotton yield and weed growth were studied as a factorial experiment in a randomised complete block design with three replications in Sabzevar in 2015–2016. Factors were cultivation system (conventional (75 cm row spacing)) and ultra narrow row (UNR, 20 cm row spacing) and five weed control treatments, e.g., hand hoeing three times, Ethalfluralin (at recommended dose), Ethalfluralin (50% recommended dose) + hoeing once, Ethalfluralin (50% recommended dose) + hand hoeing twice and non-weeded check. The results showed that UNR system had more height (15.5%), leaf area index (14.5%), the percentage of light absorbed (15.5%), yield (22.45%), lint yield (16.7%), cotton yield (25.6%), biological yield (18.5%) and

less lint weight per boll (9.02%), weed dry weight (16.5%), lint index (7.75%) than in conventional system. For all of the traits in this experiment, three times hand weeding was most useful in increasing the characteristics over other control methods which were not significant, with Ethalfluralin (50% recommended dose) + hand hoeing twice at 45 and 60 day after emergence treatment. In UNR system, reducing herbicide dose had more yield and yield components compared to conventional system. Overall results showed that planting system in UNR cultivation in the presence of weed competition, had more cotton yield compared to conventional systems.

**Keywords** Cotton, low herbicide dose, ultra narrow row, weed competition.