



## RESEARCH PAPER

# Studies on chemical weed control practices in wheat (*Triticum aestivum* L.) for higher yield and profit in Hathras district of Uttar Pradesh

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**Abstract :** Present study entitled “Studies on chemical weed control practices in wheat (*Triticum aestivum* L.) for higher yield and profit in Hathras District of Uttar Pradesh” was conducted during two consecutive *Rabi* seasons of years 2015-16 and 2016-17 at farmer’s fields in district Hathras, to find out the best suitable alternate of weed management practice in wheat crop. Front Line Demonstrations (FLDs) were conducted on an area of 16.0 ha with active participation of 40 farmers of 29 different villages with improved technologies composed HD-2967 variety and recommended package of practices. Two different weed control technologies viz., (1) Sulfosulfuron 75 WG + Metsulfuron 5 WG @30g a.i./ha at 35 DAS and (2) Clodinafop-Propargyl 15 WP @ 60 g a.i./ha (400 g/ha) +Metsulfuron methyl 20 WG, were demonstrated. The results revealed that both the treatment gave higher grain yield, gross return and net return as compared to farmers practice (Sulfosulfuron 75 WG @33.3 g/ha at 40 DAS). The maximum grain yield (42.8q/ha with HI of 40.61%) was obtained during the year 2016-17 when Clodinafop-Propargyl 15 WP @ 60 g a.i./ha (400 g/ha) +Metsulfuron methyl 20 WG was applied which was 17.58% higher than the yield of farmers practice. This was followed by treatment of Sulfosulfuron 75 WG + Metsulfuron 5 WG @30g a.i./ha at 35 DAS which produced yield of 38.1q/ha with an increment of 14.07% over farmers practice. The similar trend was also observed for Biological yield of wheat. However no definite trend was noticed for harvest index. Economic analysis of different weed control methods also revealed that both the demonstrated technologies were found effective to weed management and profitable over farmers practice. The highest net returns (Rs. 51260 ha<sup>-1</sup>) was observed for application of Clodinafop-Propargyl 15 WP @ 60 g a.i./ha (400 g/ha) +Metsulfuron methyl 20 WG treatment. The increment in net return due to weed control treatments was recorded highest (28.65%) during the year 2016-17 when Clodinafop-Propargyl 15 WP @ 60 g a.i./ha (400 g/ha) +Metsulfuron methyl 20 WG was applied which also gave the maximum increase in gross return of Rs. 6.71 per rupee additionally invested. It was concluded that Clodinafop-Propargyl 15 WP @ 60 g a.i./ha (400 g/ha) +Metsulfuron methyl 20 WG or premixed weedicide Sulfosulfuron 75 WG + Metsulfuron 5 WG @ 30 g a.i./ha at 35 DAS should be used for obtaining higher grain yield, straw yield, gross and net income with higher B: C ratio from wheat under Hathras conditions of Uttar Pradesh.

**Key Words :** Wheat, FLD, Weed control, Gross/ Net return, Cost of cultivation, Net return, B:C ratio, Sulfosulfuron, Metsulfuron, Clodinafop-propargyl

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