

RESEARCH PAPER

ADVANCE RESEARCH JOURNAL OF
C R P
IMPROVEMENT
Volume 7 | Issue 2 | December, 2016 | 207-210
..... e ISSN-2231-640X

Integration of chemical and cultural methods for weed management in wheat

DOI :
10.15740/HAS/ARJCI/7.2/207-210
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ABSTRACT : An experiment was laid out to study the effect of integrated weed management practices for weed management in wheat variety Kalyansona during *Rabi* seasons of the year 2013 – 2014 in Randomized Block Design at Central Research Station of Orissa University of Agriculture and Technology, Bhubaneswar, Odisha. The experiment comprised of twelve weed management practices as treatments *i.e.* pendimethalin @ 1.0 kg ha⁻¹ (2 DAS), metribuzin @ 0.3 kg ha⁻¹ (2 DAS), metsulfuron @ 0.02 kg ha⁻¹ (25 DAS), pendimethalin + One HW (25 DAS), pendimethalin + 2, 4-D EE @ 0.5 kg ha⁻¹ (25 DAS), metsulfuron + One HW (25 DAS), metsulfuron + 2, 4-D EE @ 0.5 kg ha⁻¹ (25 DAS), pendimethalin + metsulfuron (25 DAS), metribuzin + metsulfuron (25 DAS), 2, 4-D @ 0.5 kg ha⁻¹ (25 DAS), Two hand weeding at 25 and 45 DAS and Unweeded control. Wheat was sown at row spacing 20 cm x 5 cm on flat beds. The results showed that when pendimethalin was applied along with one hand weeding at 25 days after sowing had the highest weed control efficiency percentage (95.35%) and also the crop gave the highest grain yield *i.e.* 2784 kg ha⁻¹ followed by two hand weeding at 25 and 45 DAS (grain yield 2677 kg ha⁻¹), but in this case the weed control efficiency percentage was very low (17.44%). Uncontrolled weed growth throughout the crop growth caused a yield reduction of 29.12 to 62.14 per cent. It is concluded that pendimethalin + one hand weeding remarkably reduced the weed dry matter resulted in increase in weed control efficiency. The same treatment proved its superiority in increasing all yield attributing factors along with grain yield of wheat indicating the most effective integrated weed management practice for wheat.

KEY WORDS : Integrated methods, Herbicides, Wheat, Yield, Weed control efficiency

How to cite this paper : Patro, H. and Ray, M. (2016). Integration of chemical and cultural methods for weed management in wheat. *Adv. Res. J. Crop Improv.*, 7 (2) : 207-210, DOI : 10.15740/HAS/ARJCI/7.2/207-210.

Paper History : **Received** : 02.09.2016; **Revised** : 06.11.2016; **Accepted** : 20.11.2016