

COMPARATIVE STUDY ON WEEDS AND CROP GROWTH AS INFLUENCED BY INTEGRATED WEED MANAGEMENT AND BALANCED FERTILIZATION IN CORIANDER (*Coriandrum sativum* L.)

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ABSTRACT

A field experiment was conducted at Instructional Farm, Rajasthan College of Agriculture, Udaipur (Rajasthan), to determine the weed and crop growth dynamics, in relation to integrated weed management and balanced fertilization. Pooled analysis of two year data indicated that, all weed management practices significantly reduced the dry matter of weeds, improve the crop dry matter accumulation and seed yield of coriander as compared to control at 60, 75, 90 and at harvest. Two HW at 30 and 45 DAS resulted in maximum reduction in weed dry matter (88.50 % as compared to control at harvest) and greater crop dry matter accumulation (28.61 g/plant at harvest) and highest seed yield (15.84 q/ha) of coriander. However, at par reduction in weed dry matter and improvement in crop dry matter accumulation and seed yield were obtained by another treatment of pendimethalin 1.0 kg/ha + one hand weeding at 45 DAS. Both the treatments also remained at par in their effect on crop stand at 30 DAS and at harvest, plant height at harvest, straw yield and resulted in maximum weed control efficiency as compared to rest of practices. Balanced fertilization with 60 kg N+ 30 kg P+ 30 kg K + 30 kg S/ha also significantly improved weed dry matter at all stages but also simultaneously enhanced the crop dry matter accumulation and finally the seed yield of coriander over N+P and N+P+K application. Interactive effect of weed management and balanced fertilization was also found significant in respect of weed dry matter accumulation at 60 DAS and crop dry matter accumulation at 60, 90 DAS and at harvest of crop. Significant and negative correlation between weed dry matter and crop dry matter at 30, 45, 60, 75, 90 DAS and harvest ($r=-0.842, -0.582, -0.680, 0.676, -0.759, -0.799$, respectively) was reported whereas between the crop growth parameters and seed/straw yield it was found positive. A pre-emergence application pendimethalin 1.0 kg/ha, followed by one HW at 45 DAS and fertilization with 60 kg N + 30 kg P + 30 kg K + 30 kg S/ha would be recommended to achieve maximum weed control efficiency, higher seed and straw yield from coriander cultivation.

KEYWORDS: Coriander, Hand Weeding, Interaction, Pendimethalin, Seed Yield, Weed Control Efficiency