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Effect of weed management practices on weed dynamics and growth, yield, economics of pigeonpea under rainfed condition

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ABSTRACT : A field trial was conducted during *Kharif* season of 2013 in farmer's field in Ragudiapada village of Angul district in Odisha to study the effect of weed management practices on weed dynamics and growth, yield, economics of pigeonpea under rainfed condition. The treatments comprised of different weed management practices viz., T₁- Farmers practice of one hand weeding at 45 DAS, T₂-Pre-emergence application of pendimethalin 30 per cent 1.0 kg ha⁻¹ fb one hand weeding at 45 DAS and T₃-Unweeded control. The experimental trial was laid out in Randomized Block Design with thirteen replications. The results revealed that pre-emergence application of pendimethalin 30 per cent 1.0 kg ha⁻¹ fb one hand weeding at 45 DAS recorded maximum weed control efficiency at 90 DAS (70.12%) and at harvest (75.14%) with minimum dry weed biomass at harvest (37.41 g m⁻²) and weed density m⁻² at 120 DAS (62.23). The same treatment also produced significantly higher seed yield (18.36 q ha⁻¹), number of branches plant⁻¹ (17.77), pods branch⁻¹ (22.42), seeds pod⁻¹ (4.46), nodules plant⁻¹ (13.15), dry matter accumulation (6.54 to 175.52 g plant⁻¹), CGR(4.76 to 21.43 g m⁻² day⁻¹), gross return (Rs.58560 ha⁻¹) and B:C ratio (2.27) with additional net return of Rs.6545 ha⁻¹ as compared to farmers practice and weedy check. Thus, application of pendimethalin 1.0 kg ha⁻¹ fb one hand weeding appeared to be effective, economically viable for weed control, crop growth, higher seed yield and net profit.

KEY WORDS : Economic, Pendimethalin, Pigeonpea, WCE, Weed density, Yield

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