

Evaluation of weed management practices in *Kharif* groundnut under North Gujarat conditions

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SUMMARY

A field experiment was conducted during 2006 to study the effect of different weed control methods on weeds, yield attributes, yield, oil content and economics in *Kharif* groundnut (*Arachis hypogea* L.). There was significant reduction in weed dry weight at harvest. The weed free had the least weed dry weight. However, it was at par with TPE 0.025 mm for 45 days + one hand weeding at 20 DAS and TPE 0.025 mm for 45 days + quizalofop - p - ethyl 25 g ha⁻¹. All these treatments recorded significantly higher weed control efficiency, yield attributes, pod and haulm yields. The effect of weed management treatments on oil content was more or less equal except soil solarization treatment for 30 days, use of both herbicides viz., pendimethalin 1.0 kg ha⁻¹ and quizalofop - p - ethyl 50 g ha⁻¹ alone and weedy check. The higher net return was recorded in weed free followed by TPE 0.025 mm for 45 days + one hand weeding at 20 DAS.

Key words : Groundnut, Solarization, Weed management, Yield

The severe crop weed competition results in reduction of yield to the tune of 60-70% due to initial slow growth of groundnut (Bhan *et. al.*, 1983). Therefore, the control of weeds at proper stage of growth is considered very essential for reducing losses in production. Several measures viz., soil solarization, chemical and manual measures were adopted for controlling the weeds. Among these, soil solarization was a preventive and non-hazardous to the users as well as to environment. The present experiment was conducted to study the effect of different weed control measures in *Kharif* groundnut under Agro-climate of North Gujarat.

MATERIALS AND METHODS

A field experiment was conducted at Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar during *Kharif* 2006. The treatments included were transparent polythelene (TPE) 0.025 mm for 30 and 45 days and in combinations with one hand weeding and quizalofop - p - ethyl 25 g ha⁻¹, quizalofop - p - ethyl 50 g ha⁻¹ as a post emergence, pendimethalin 1.0 kg ha⁻¹ as a pre emergence, weed free and weedy check. The experiment was laid out in a Randomized Block Design with four replications. The soil was loamy sand

having pH 7.7, organic carbon 0.18%, available N 159.1 kg ha⁻¹, available P₂O₅ 38.9 kg ha⁻¹ and available K₂O 185.1 kg ha⁻¹.

TPE sheets in the solarized plots were spread on 30th April. TPE sheets were removed after the respective period of solarization. Groundnut cv. GG-7 was sown at a spacing of 45 cm x 15 cm. Weeds were removed in weed free plots as and when emerged. In hand weeding, they were removed at 20 DAS. Pendimethalin was sprayed two days after sowing. Quizalofop - p - ethyl was sprayed at 20 DAS. The crop was harvested on October, 18. Oil content was estimated by using Nuclear Magnetic Resonance Spectrophotometer and expressed in percentage.

RESULTS AND DISCUSSION

The results obtained from the present investigation have been discussed below under following heads:

Effect on weeds:

The major weeds in the experimental plot were *Cenchrus biflorus*, *Dactyloctenium aegyptium*, *Cynadon dactylon*, *Digera arvensis*, *Trianthema monogyna*, *Tribulus terrestris* and *Cyperus rotundus*. Among the grassy weeds; *Cynadon dactylon* was predominant. *Digera arvensis* was pre dominant among broad leaved weeds and *Cyperus rotundus* was predominant among sedges.

The dry weight of weeds was significantly reduced by all the treatments compared with weedy check (Table 1). The weed free had the least weed dry weight. However, it was at par with TPE 0.025 mm for 45 days

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