Thesis Title : A Study of weed control methods on seed yield of sesame (*Sesamum indicum* L.)

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Abstract

Three field experiments on a study of weed control methods on seed yield of sesame (*Sesamum indicum* L.) were conducted at Faculty of Agriculture, Khon Kaen University during 1987-88 to determine the efficiency of certain herbicides and a critical period of crop-weed competition and to find out a suitable method of weed control in broadcasted and row-drilled sesame.

In late rainy season 1987, the sesame cv. Roi-et was applied with alachlor at 270 and 540 g (a.i.)/rai, metolachlor at 180 and 360 g (a.i.)/rai, linuron at 90 and 180 g (a.i.)/rai and diphenamid at 400 and 800 g (a.i.)/rai as pre-emergence and haloxyfop-

methyl at 20 and 40 g (a.i.)/rai, fluazifob-butyl at 40 and 80 g (a.i.)/rai and propanil at 170 and 340 g (a.i.)/rai were used as post emergence herbicides. It was found that alachlor at 270 g (a.i.)/rai gave good weed control and gave the highest seed yield of 94.73 kg/rai, followed by handweeded which yield 89.87 kg/rai, whereas unweeded plots gave only 3.35 kg/rai. All three herbicides used after weed emerged were considerably uneffective in controlling weeds, and the sesame yield were comparable to unweeded plot.

The critical period of sesame cv. Roi-et and weed competition in early and late rainy season were occurred during 2-4 weeks after sowing and weed have more effect on sesame that planted in the late rainy season than in the early rainy season.

The third experiment was conducted to compare methods of weed control and types of seeding on seed yield to sesame cv. Roi-et and cv. Nakornsawan. In early rainy season 1988, one handweeded at 15 days after sowing gave the highest yield and was significantly difference from alachlor applied pre-emergence at 270 g (a.i.)/rai. Although alachlor tended to give higher yield than unweeded plots no significant difference was observed. Broadcasted and row-drilled sesame did not give any different on seed yield (97.90 and 99.21 kg/rai, respectively) but in unweeded plots broadcasted sesame gave higher yield than row-drilled sesame. On the other hand, in the weeded plots, row-drilled sesame tended to give more yield. The highest yield was observed in sesame cv. Roi-et and cv. Nakornsawan planted in row with one handweeding that yielded 152.34 and 106.61 kg/rai, respectively.