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Impact of different weed control methods on bark yield of Cinnamon (Cinnamomum verum Presl.)

Cinnamon (C*innamomum verum* Presl.) is one of the most important perennial spice crops grown in Sri Lanka. Although there is a potential to produce more than 1000 kg ha-1yr-1, present national average of cinnamon bark yield is about 400 kg ha-1. Poor weed control is one of the main factors that affects on yield losses in addition to the other neglected cultural practices. This study was conducted to investigate weed growth under cinnamon and their effect on bark yield and also to identify suitable methods to control weeds, during the period of 1998 to 2002 at Cinnamon Research Station, Matara. In this study, three weed control methods popular among the growers, mammoty weeding, chemical weeding (Glyphosate) and slash weeding were evaluated to find out the effect on yield of cinnamon. At the same time weed biomass was also studied. Average bark yield values for last three years of period (1999 –2001) for chemical weeding in 6 and 12 months intervals, mammoty weeding and slash weeding in 6 months intervals were 917, 758, 747 and 654 kg ha-1yr-1 respectively. Mammoty weeding and slash weeding in 12 months intervals and control gave the yield of 593, 532 and 396 kg ha-1 yr-1 respectively. Maximum yield was observed by controlling weeds in six months interval in all treatments. As a percentage, chemical weeding in 6 and 12 months interval, chemical weeding and mammoty weeding in 6 months interval increased average cinnamon bark yield for last three years of period (1999 – 2000) by 158%, 114% and 110%, respectively, in comparison to initial yield in 1998. Slash weeding in 6 months interval, mammoty weeding and slash weeding in 12 months interval and no weeding showed the yield increases only by 84%, 67%, 50% and 12%, respectively. Weed biomass after 6 months of mammoty and chemical weeding were 8636 and 9731 kg ha-1 respectively, while the same under slashing and control were 22445 and 39435 kg ha-1 respectively. When weed control was done once a year weed biomass increased and for mammoty, chemical, slashing and control treatments were 39853, 38475, 42958 and 42895 kg ha-1, respectively. No statistically significant difference could be found among these values. Weed biomass was kept under control to minimum values (below 10000 kg ha-1) in first six months at chemical weeding and manual weeding.

Experiment showed the weeding is very sensitive factor on bark yield of cinnamon and it should be done by six months interval. Although chemical weeding and mammoty weeding were the best, long term environmental and residual effect of chemicals should be studied in detail.