

Dramatic Reductions in Soil Erosion on Tea Plantations Result from Herbicide Use

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Weeds in tea plantations need to be controlled for three reasons: weeds compete with tea for water, light and nutrients and have the potential to reduce yields by 70%; weeds can increase the humidity around the bush, creating conditions favorable for diseases; and weeds can hinder harvesting the tea [1]. Tea is grown in areas with plentiful rainfall through much of the year which encourages weed growth. New tea plants are planted in the field at a spacing of 120 cm by 60 cm leaving a large area of soil surface open to full sunlight. This condition lasts for two years and is very favorable for weed growth before the tea canopy closes. Tea plants are pruned of their foliage every 3-4 years to increase productivity. This practice leaves open areas for weed growth until foliage re-growth occurs.

Historically, the most common method of weed control in tea plantations was to scrape the weeds off the surface of the soil. The practice of weeding with scrapers aggravates the erosion problem because it leaves behind a layer of loose soil which is easily washed away by rainfall [2]. Manual weeding using scrapers resulted in severe soil loss of about 30cm of top soil per hectare eroding over a century in Sri Lanka [3]. This loss translates into average soil erosion of 40mt/ha/yr [2].

Research demonstrated that losses from erosion could be reduced when herbicides are used instead of manual scraping [4]. Research in China has shown erosion reductions up to 80% with the use of herbicides instead of tillage in tea fields [5].

Herbicides have been widely used on tea plantations since the 1970s and are used to control weeds in new clearings and pruned tea fields [6].

References

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Asian tea field



Scraping weeds in tea fields



Weeds in new tea plantings



Herbicide treatment in new tea plantings