



Weed Management In High Density Orchards Under Temperate Conditions

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ABSTRACT

Weed management in high density apple orchards is a critical component for successful production of quality fruits. The primary goal of weed management is to optimize yield by minimizing the weed competition (Terence, 2017). The weeds cause heavy losses by competing with the main crop for water, nutrients and also provide potential breeding niche for various insects, pests and diseases. Weeds are a major problem in fruit orchards, costly to control, decrease yields, interfere with harvesting, pesticide sprays, irrigation of the trees by blocking the sprinklers. A variety of weed species infest apple orchards, including annuals, biennials and perennials (Derr and Chandran, 2000). High density plants require weed-free period especially during the initial establishment years in order to maximize vegetative growth and fruit production (Terence, 2017). One of the disquieting challenges in fruit production is weed management and can be managed through various management strategies like prevention, mechanical control, cultural control, biological control and chemical control. These management strategies except use of herbicides not only suppress the growth and development of weeds but also improve soil conditions, structure and soil nutrient status and impart manifold beneficial effects, like, stabilization of soil temperature, reduced water loss through evaporation, resulting more stored soil moisture (Shirgure *et al.*, 2003), improvement in growth and yield (Pande *et al.*, 2005), reduces erosion by wind or water, checks surface run-off. In the recent years, greater emphasis is also being laid on use of herbicides and growing of cover crops or intercrops for control of weeds in the orchards because it is reported to be convenient, economical, sustainable and feasible. It is therefore clear that our civilization must make whatever possible efforts while strengthening the weed management strategies to increase yield, and quality as well as increase cost of production.

KEYWORDS: *Weed management, High density, Management strategies, Herbicides.*