



Weed management in citrus orchards

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Weeds in citrus orchards are a major problem in cultivation, since weeds compete with the main tree unit for water, nutrients and also interfere with cultural practices. The competition from weeds to the main citrus tree unit is more damaging when the trees are young because these weeds slow down the tree growth and increase their susceptibility to insect and disease damage. As the tree grows older, the tree canopy shades the part of orchard floor and reduce weed growth. The weed competition with mature tree can further increase in drip or micro sprinkler irrigated orchards as tree roots are concentrated in a smaller area as compared to furrow irrigation. Their eradication is very essential either by direct destruction or by prevention of multiplication. To prevent spread of weeds irrigation canals and ditch banks should be ensured to be free of weeds or weed seeds.

Identification : The identification of weed species is necessary before starting any weed management programme. Grasses that cause problems to citrus orchards are generally perennials and reproduce by seeds/rhizomes, for example Bermuda and torpedo grass, or by vegetative methods, *i.e.*, by tubers or bulbs. Sedges are similar to grasses but have triangular stems. The weed should first be identified because control measures may differ for grasses and sedges. Both the broad leaf and monocot weeds may be annuals, biennials or perennials.

Weed control measures : *Physical control* : The method is effective for young and newly planted orchards. These methods include hoeing, mechanical cultivation, mowing, slashing and burning. Mechanical cultivation is convenient in inter row area. This method may harm feeding roots and foliage, floral parts and fruits in grown up orchards. Hand hoeing is effective but labour demanding.

Chemical control : This management of weeds through

herbicides is a cheaper method. This method is most effective in grown up orchards. However, these herbicides should be avoided during bearing stage. The basins of the fully grown trees are not easily accessible to mechanical cultivation as this may harm the feeder roots and lower branches. The application of proper herbicides is therefore recommended for management of weeds in such fully grown orchards.

The Spray of glyphosate 41 SL @ 1.6 litres per acre as post emergence spray during the second fortnight of March followed by glyphosate 41 SL or gramaxone 24 WSC @ 1.2 litre per acre during second fortnight of July in 200 litres of water is effective for weed management in citrus orchards.



Safe application of herbicide: The spray of glyphosate is done as a post emergent herbicide and it is done soon after the weeds emerge out of the soil. Contact herbicide, gramaxone kills only those parts of the plant that are actually sprayed so making a

good coverage and wetting of the entire plant is essential. Whereas, systematic herbicide, glyphosate move into the parts and kill the weeds. Complete coverage with this type of herbicides is not necessary. It should be ensured that when the herbicide is being sprayed there should be sufficient moisture in the soil. Care should taken to spray only the recommended dose in order to avoid any damage to the orchard unit. The spray pump should be washed thoroughly with washing soda after the completion of spray. In order to avoid splashing on main tree unit, the weedicide should not be sprayed on windy days. The most important factor is that proper sanitation should be followed soon after the completion of such sprays. It is further added that flat fan or flood jet nozzles should be used for spray of herbicides and the spray hood should also be used.