



EFFECT OF WEEDICIDE IN MINIMIZATION OF WEED MENANCE IN NAGPUR MANADARIN ORCHARD

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ABSTRACT: During *Kharif* season weed poses serious threats in mandarin orchards and sometimes the infestation of weed flora is so high that it creates great challenge in maintaining the plant growing and surviving properly. To counter weed problem, weedicides have proven its worth. Labour availability getting problematic day by day, option of weed control rests with the view of weedicide with such an idea an experiment was conducted with a view to assess the efficacy of weedicide in countering weed growth in newly grown mandarin orchard. The orchard was having heavy infestation of *Echinocola cholena*, *Celosia sp*, *Cassia tora*, *Comelina communis*, *C. benghalensis*, *Abelmoschus muschatus*, *Euphorbia xeniculata*, *Parthenium hysterophorus*, etc. From the experiment it appeared that Isoproturon 75% WP @ 2% was found most efficacious out of 2, 4-D, Oxyflourfen, Glyphosate and Imazethapyr used to control weeds in mandarin orchard.

Keywords: Mandarin orchard, weed flora, weedicide.

Flora which grows on undesirable place is termed as weed. It can also be defined as unwanted plant in the field (Singh, 5). Weeds are ubiquitous and reduce the crop yields and indirectly they elevate cost of farm production through energy spent in controlling them (Prasad and Kumar, 4). Weed interferes with agriculture operations. It competes with main crop for space, light, nutrients, moisture and more so harbours pests and diseases (Singh, 5). It is truly said agriculture is a controversy with weeds. The mandarin orchards get infested with monocot and dicot weeds especially during *Kharif* season which competes with the main crop for water, nutrient and space. The orchard was having heavy infestation of *Echinocola cholena*, *Celosia sp*, *Cassia tora*, *Comelina communis*, *C. benghalensis*, *Euphorbia xeniculata*, *Parthenium hysterophones* etc. In monsoon season incessant rainfall may make physical weeding infeasible. Weedicides can be used to ensure freedom to crops from weeds under such a condition. Cultivation has been the major method of weed control in mandarin orchard but it has many drawbacks as it damages feeder roots. Frequent tillage destroys the structure of the surface soil, thus lowering the water holding capacity and permeability of the soil too (Bal, 1). Due to these

limitations, use of chemical weedicides for controlling weeds in citrus orchard is gaining importance all over the world. Use of chemical weedicides is not only advantageous to the growers but also economical (Bose and Mitra, 2). Keeping these things in view, the present investigation was carried out so as to find out effective weed control in mandarin orchard.

The present experiment was conducted during rainy season of 2010 at the Nagpur Mandarin (*Citrus reticulata* Blanco) orchard at the College of Horticulture and Forestry (MPUAT), Jhalrapatan. The treatments (Table 1) commenced of 1% 2, 4-D, 38 EC; 2% 2, 4-D 38 EC + 1 % Oxyflourfen 23.5 EC + 1 % Glyphosate 71 % SG + 2% Glyphosate 71 % SG + 1 % Isoproturon 75% WP + 2% Isoproturon 75% WP + 1 % Imazethapyr 10% SL + 2% Imazethapyr 10% SL. The observation on number of weeds per 10 cm² area after spraying/efficacy of weedicide in countering weed growth in newly grown Mandarin orchard were recorded during rainy season.

From the experiment it appeared that Isoproturon 75% WP @ 2% was most effective out of 2, 4-D, oxyflourfen, Glyphosate and Imazethapyr (Concentration 1 %, 2%) used to control weeds in mandarin orchard (Table 2). Under

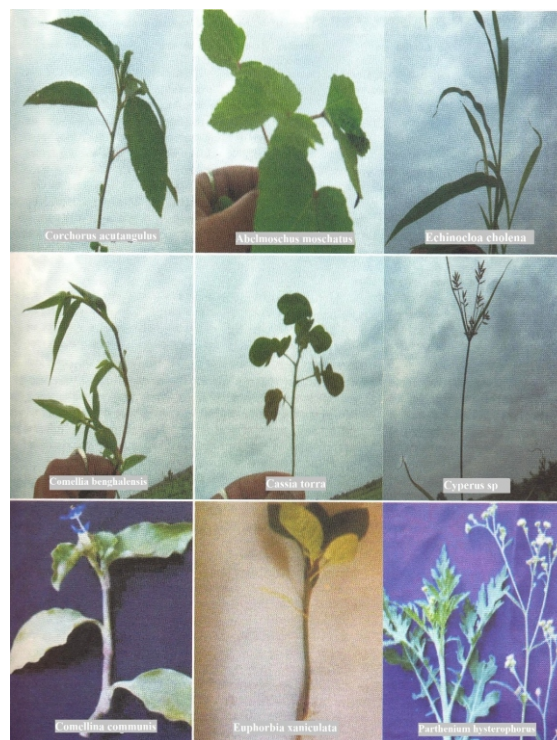
Table 1: Detail about concentration of weedicide used for spray.

Chemical Name	Commercial Formulation	Trade Name
2,4-D	38 % EC	Kilharb
Oxyflourfen	23.5 % EC	Life Gold
Glyphosate	71% SG	Decar Excel Mera
Isoproturon	75% WP	Wonder
Imazethapyr	10%, SL	Pursuit

Table 2: Effect of weedicides on control of weed.

Treatments	No. of weeds /10 cm ² before spraying	No. of weeds/10 cm ² after spraying	Marking
1% 2,4-D	48	20	2.0
2% 2, 4 -D	50	18	2.5
1 % Oxytlourfen	47	12	5.0
1% Glyphosate	46	1	8.0
2% Glyphosate	48	1	7.0
1 % Isoproturon	45	4	6.0
2% Isoproturon	48	0	9.0
1 % 1m azethapyr	50	18	4.0
2% Imazethapyr	47	4	3.0
CD	07.58	3.50	3.12

Isoproturon, no weed population was noted after spray. Irrespective of kind of weed flora, the weed population in the orchard varied from 45-50 /10 cm² before spraying. It was noted to 0- 20 11/10 cm² after spraying over other weedicides might be due to its better absorption and translocation and also due to susceptibility of weed flora to it. The affectivity a herbicides accounted to absorption trans locates and selectivity has been used (Panda, 3).

**Plate 1 :** Common Kharif weed flora in mandarin

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