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Investigation of a New Post Emergence Herbicide,Diquat Dipromide 200 g/l Against to Weeds in Peach Orchards in Black Sea Region

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Abstract: In this study, Diquat 200 g/l herbicide was tested against to weeds causing damages in peach orchards of Samsun province in the Black Sea Region in 2017. The experiment was carried out in 9 blocks (6 doses of target herbicide+2 doses of reference herbicide+control) with 4 replicates in 2mx25m=50 m2 parcels according to randomized blocks trial design. Herbicide effects in formed groups according to variance analysis with Tukey test (5%) in the JMP program were found to be different and significant, statistically.Weed density in peach gardens in Samsun region; shepard's purse(Capsella bursa-pastoris), bluegrass (Poa annua), sow thistle (Sonchus oleraceus), hooked bristlegrass (Stellaria media), brome grasses (Bromus spp.), Henbitdeadnettle (Lamium amplexicaule), field marigold(Calendula arvensis) and pimpernel (Anagallis arvensis) was evaluated as being very intensive because it is more than 10 in m2. In Post-emergence in peach gardens, Diquat dipromide (200 g/l)active ingredientherbicide was applied at the doses of 300, 400, 500, 600 and 1200 ml/da while Roundup Star Glyphosate Potassium Salt was applied at the doses of 300ml/da, respectively against to post-emergence weeds in peach orchards. Diquat dipromide (200 g/l)application at the dose of 300, 400, 500 ml/da was found ineffective against to both broad and narrow leaf weeds. At doses of only 600 and 1200 ml/da, the killing efficacy of herbicide was found at 90-100% both narrow and broad leaf weeds . For this reason, Diquat dipromide (200 g/l) was recommended as herbicide after discharge at a dose of 600 ml/da, which was found to be effective at 91.71% for eight weeds in the garden. Phytotoxic effect on peach trees was not observed at the dose of diquat dipromide 1200 ml/da.

Keywords: Peach, Weeds, Density, Post-emergence herbicide, Diquat dipromide

Introduction

Recent investigations have shown that weed competition can greatly reduce the growth, cropping and fruit quality of both young and mature fruit trees. A weed control programme to eliminate most or all weeds from fruit orchards is, therefore, important, particularly in high density plantings where high and regular fruit production and early capital return are so important.

Peach (Prunus persica L. Batsch) is a hard-seeded fruit species that can adapt to temperate and subtropical climate areas. The peach culture is based on 4000 years ago and is thought to be the motherland of East Asia and China. Peach [Prunus persica (L.) Batsch] is an important fruit crop cultivated on 1.54 million ha with an annual production of 20.27 million tonnes in the world (Faostat 2010). China is in the 1st place with 37.16% of peach production in the world. This is followed by EU countries with 26.20%. If Turkey is located in 10th place with 3.11% of production. According to TUIK data is obtained,in Turkey 642.720 tons of products per year from 16.300 million peach trees in Turkey. Peaches are mostly produced in the Marmara, Aegean, Black Sea and Mediterranean regions (Anonymous 2017a).

In different region of Turkey, The density is important of Amaranthus retroflexus L.,Anagallis arvensis L., Anthemis tinctoria L., Artemisia vulgaris L., Calendula arvensis, Capsella-bursa pastoris (L.) Medik, Carduus

spp., Cerastium glomeratum Thuill., Chenopodium album L., Daucus carota L., Erodium spp., Euphorbia spp., Fumaria spp., Galium tricornutum Dandy., Geranium spp., Heiotropium europaeum L., Hibiscus trionum L., Lactuca serriola L., Malva spp., Matricaria spp., Medicago spp., Mentha arvensis L., Mercurialis annua L., Muscari spp., Papaver rhoeas L., Plantago spp., Portulaca oleracea L., Raphanus raphanistrum L., Ranunculus spp., Rumex spp., Scabiosa spp., Senecio vernalis Waldst. and Kids.,Senecio vulgaris L., Silene colorata Poir., Sinapis arvensis L., Solanum nigrum L., Sonchus spp., Stellaria media (L.) Vill., Tribulus terrestris L., Trifolium spp., Urtica urens L., Verbena officinalis L., Veronica spp., Lamium orientale, Alopecurus myosuroides Huds., Avena spp., Bromus spp., Digitaria sanguinalis (L.) Scop., Echinochloa spp., Hordeum spp., Lolium spp., Phalaris spp., Poa spp., Setaria verticiliata (L.) P. Beauv Setaria viridis (L.) P. Beauv, Setaria glauca, Acroptilon repens (L.) DC. , Cirsium arvense (L.) Scop., Convolvulus arvensis L., Elymus repens, Cynodon dactylon, Cyperus rotundus L. Phragmites australis and Sorghum halepense (Anonymous 2011, 2017b). In peach garden in India, Urochloa maxima (Jacq.) R. Webster, Cynodon dactylon (L.) Pers.,Cyperus rotundus L., Eleusine indica (L) Gaertn., Commelina benghalensis L., Chenopodium album L., and Parthenium hysterophorus L. were the important weeds at the experimental site in the peach orchard during the investigations (Thakur et al. 2012). Among the herbicides, Diuron fb Glyphosate with the highest WCE (=weed control efficency) (98.3%) did not differ significantly from Atrazine fb Glyphosate at 12 WAT (=weeks after treatment) in 2009. This was followed by Pendimethalin fb Glyphosate (96.0%), which did not differ significantly from Pendimethalin fb Paraquat or Atrazine fb Paraquat. Glyphosate appeared to be a better postemergence herbicide than Paraquat in terms of better WCE when used after Diuron and Atrazine. However, there was no significant difference between the two post-emergence herbicides when used after Pendimethalin. Diuron fb Glyphosate and Atrazine fb Glyphosate resulted in 100% WCE at 12 WAT in 2010, and it did not differ significantly from all the herbicide treatments, black polythene mulch, and straw mulch (8 cm). Pendimethalin and Atrazine reduced the weed biomass of bermuda grass compared with the weedy control at 6 WAT during both years but could not eradicate the weed (Tworkoski and Glenn 2001, Thakur et al. 2012, Hembree 2016). Richard (1998) has demonstrated that atrazine was not at all effective while Pendimethalin was less effective in controlling bermuda grass. Pendimethalin and Diuron treatments also failed to completely control benghal day flower, which was completely controlled by black polythene mulch and straw mulch at 6 WAT. Webster et al. (2006) also reported the poor efficacy of Diuron against tropical spiderwort (benghal dayflower). They found that Diuron at 1.68 kg/ha21 provided marginal control (73%) of tropical spiderwort at 6 WAT and the weed control percentage reduced further (36%) at lower Diuron rates. Atrazine also showed poor control of benghal dayflower at 6 WAT (MacRae et al. 2007).

Herbicidal activity was conducted at the request of company of herbicide with effective substance "Diquat dipromide 200 g/l" against the weeds which are problem in peach gardens.

Materıal and Method

The trial was established in Samsun (Carsamba- Köklük village) in the garden of Glohaven apricot variety at the age of 12. The planting gaps are 7x7 m in the garden where the experiment was carried out. It has been stated by the farmer in March to use Ammonium sulphate fertilizer per 3 kg/tree. Soil structure is loamy. Weeds which are found in dense area (density>10 in m2); Capsella bursa-pastoris, Poa annua, Sonchus oleraceus, Bromus spp., Lamium amplexicaule, Calendula arvensis and Anagallis arvensis. Ulug et al. (1993) was used in the identification of Turkish and scientific name in the identification of this weed.
Herbicides used in the trial and information about them are shown in Table 1.

Table 1. Information about the herbicides used in the herbicides test against weeds which are a problem in peachorchards in Samsun

Trade Name	Effective substance Name and%	Form.	Company	Using Dosage (Da) Active Substance(g)	Preparations (g)
EPİTAP SL	**EPİTAP**	SL	ETMA	60	300
"	"	"	"	80	400
"	"	"	"	100	500
"	"	"	"	120	600
"	"	"	"	140	700
"	"	"	"	160	800
****EPİTAP** SL	"	"	"	320	1600
*Roundop Star	Glyphosate Potasyum salt 441 g/l	SL	Monsanto	132,3	300
*Roundop Star	Glyphosate Potasyum salt 441 g/l	SL	Monsanto	264,6	600

** Selectivity (phytotoxicity) dosage
* Comparison Chemical

The experiment was carried out in 7 blocks (5 doses of trial herbicide+2 doses of control drug+control) and 4 replicates in 3x12=36m^2 parcels according to randomized blocks trial design. Left was 1 m between the blocks, 1 m between the parcel is left as safety lane. Herbicide application was made on 17.09.2017, weeds were grown in 6-10 leaf period, fruit vegetable sweetening period. The medication was applied at a pressure of 3 atmospheres with a Matabi fixed pressure backsprayer. The spraying tool was fitted with a 2m work width, 6 Tee-jette nipple stimulation, 2m long boom. The calibration was made with 1.08 liters of land and 30 liters of water. The air was open and the temperature was measured at 22^oC at the time of spraying.

Evaluation Time and Number

Before the experiment is established, weed species, development cycles and densities (numbers in m^2) were recorded (17.09.2017),
First evaluation: 7 days after herbicide application (24.09.2017),
Second evaluation: 21 days after herbicide application(08.10.2017):This count is based on evaluation of efficacy of medicines, and Table 2 in the results section is arranged according to this evaluation.

Third evaluation: 52 days after herbicide application(12.11.2017),
Fourth evaluation: 182 days after herbicide application was made evaluation (18.03.2017)

The phytotoxicity of the herbicides and the herbicidal effects of the herbicide were evaluated based on the observation and the percentages of the drugs were determined. In the control parcels, the weed in the square meter was recorded as number. By using variance analysis in the JMP program, groups of drugs were formed according to the Tukey (5%) test. Herbicide used in the trial; It has been observed carefully whether the phytotoxic effects on the culture plant have positive or negative effects on other pests, diseases and weeds and other organisms in the test area.

Results

Percentage effects of herbicides determined in the trial made against the weeds in peach orchards in Samsun (Carsamba-Köklük village) in 2017 are given in Table 2.

As can be seen from the examination of Table 2. Diquat dipromide 200 g/l against *Capsella bursa-pastoris, Poa annua, Sonchus oleraceus, Stellaria media, Bromus spp., Lamium amplexicaule, Calendula arvensis* and *Anagallis arvensis.* The percentages on average were: 52.50, 30.00, 25.00, 22.50, 38.75, 40.00, 38.75 and 42.50 at 200 ml/da dose respectively; 77.50, 52.50, 52.50, 53.75, 57.50, 56.25, 61.25 and 61.25 at 300 ml/da dose; 93.75, 75.00, 76.25, 82.50, 81.25, 75.00, 80.00 and 78.75 at 400 ml/da dose; 95.00, 92.50, 91.25, 91.25, 90.00, 91.25, 90.00 and 92.50 at 600 ml/da dose: 100.00, 100.00, 100.00, 100.00, 100.00, 100.00, 100.00 and 100.00 at 1200 ml/da dose; Roundop Star used as a comparator in the dose of average dose per dose of 300 ml/d: 91.25, 92.50, 91.25, 91.25, 92.50, 91.25, 91.25 and 93.75 respectively. According to the statistical analysis, variance analysis was applied to the statistical JMP program, the groups according to the Tukey (5%) test are shown below (Table 2, 3).

According to the statistical analysis, variance analysis was applied to the statistical JMP program, the groups according to the Tukey (5%) test are shown below (Table 2,3).

Table 2. The effects of Misille 20 SL herbicide on the weed species in Peach orchards in Samsun

Herbicides	Doses (ml/da)	*Amaranthus* spp.	*Portulaca oleracea*	*Poa annua*	*Capsella bursa-pastoris*	*Anagallis arvensis*	*Setaria verticillata*	*Seteria viridis*	*Urtica urens*	*Solanum nigrum*	*Malva sylvestris*
Misille 20 SL	300	d	c	c	c	c	d	c	f	d	f
Misille 20 SL	400	cd	b	b	b	b	c	c	e	d	ef
*Roundop Star	300	cd	b	b	b	b	b	b	c	bc	c
Misille 20 SL	500	cb	b	a	b	a	b	b	d	c	e
Misille 20 SL	600	ab	a	a	a	a	a	a	cd	bc	d
Misille 20 SL	700	a	a	a	a	a	a	a	bc	ab	c
Misille 20 SL	800	a	a	a	a	a	a	a	ab	a	b
*Roundop Star	600	a	a	a	a	a	a	a	a	a	b
**Misille 20 SL	1600	a	a	a	a	a	a	a	a	a	a

** Phytotoxicity Dose * Comparison chemical

The herbicide used in the experiment showed a phytotoxic effect at 1600 ml/da on leaves of apricot plants.

Table 3. The effect of Misille 20 SL herbicide on the herbicide against weeds which is a problem in peach orchards in and phytotoxicity to culture plants.

			% effect to weeds										
Herbicides	Recurrent	Phytotoxicity	*Amaranthus* spp.	*Portulaca oleracea*	*Poa annua*	*Capsella bursa-pastoris*	*Anagallis arvensis*	*Setaria verticillata*	*Seteria viridis*	*Urtica urens*	*Solanum nigrum*	*Malva Sylvestris*	*Conyza canadensis*
Misille 20 SL (300 ml/da)	1	No	85	80	85	75	80	60	75	30	40	20	10
	2		80	70	85	80	85	55	65	40	45	30	10
	3		75	80	80	80	85	65	65	30	40	20	10
	4		85	80	85	70	80	60	60	40	30	20	10
	Average		**81,25**	**77,50**	**83,75**	**76,25**	**82,50**	**60,00**	**66,25**	**35,00**	**38,75**	**22,50**	**10,00**
Misille 20 SL (400 ml/da)	1	No	95	95	95	90	90	70	80	65	65	30	10
	2		90	95	95	90	95	80	75	55	60	40	20
	3		90	90	95	90	95	75	75	60	55	30	10
	4		90	90	90	90	95	85	80	55	55	30	10
	Average		**91,25**	**92,50**	**93,75**	**90,00**	**93,75**	**77,50**	**77,50**	**58,75**	**58,75**	**32,50**	**12,50**
Misille 20 SL (500 ml/da)	1	No	95	95	95	90	100	90	90	75	85	40	30
	2		95	95	100	95	100	90	95	80	85	50	20
	3		100	95	100	95	95	95	95	80	80	40	30
	4		95	95	100	95	100	90	90	85	80	50	20
	Average		**96,25**	**95,00**	**98,75**	**93,75**	**98,75**	**91,25**	**92,50**	**80,00**	**82,50**	**45,00**	**25,00**
Misille 20 SL (600 ml/da)	1	No	100	100	100	100	100	100	100	90	90	70	40
	2		95	95	100	95	100	95	95	90	90	65	45
	3		100	100	100	95	100	100	95	90	95	60	40
	4		100	100	100	100	100	95	100	90	95	65	30
	Average		**98,75**	**98,75**	**100,00**	**97,50**	**100,00**	**97,50**	**97,50**	**90,00**	**92,50**	**65,00**	**38,75**
20 SL (700	1	Yok	100	100	100	100	100	100	100	95	95	80	50
	2		100	100	100	100	100	100	100	90	95	80	60
	3		100	100	100	100	100	100	100	95	100	85	55

	4		100	100	100	100	100	100	100	95	100	80	50
	Average		**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**93,75**	**97,50**	**81,25**	**53,75**
Misille 20 SL (800 ml/da)	1	No	100	100	100	100	100	100	100	95	100	90	80
	2		100	100	100	100	100	100	100	100	95	90	75
	3		100	100	100	100	100	100	100	100	100	90	70
	4		100	100	100	100	100	100	100	95	100	90	80
	Average		**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**97,50**	**98,75**	**90,00**	**76,25**
** Misille 20 SL (1600 ml/da)	1	No	100	100	100	100	100	100	100	100	100	100	95
	2		100	100	100	100	100	100	100	100	100	100	95
	3		100	100	100	100	100	100	100	100	100	100	100
	4		100	100	100	100	100	100	100	100	100	100	100
	Average		**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**97,50**
* Roundup Star (300 ml/da)	1	No	90	90	95	90	90	90	90	90	95	80	70
	2		95	95	95	90	95	95	90	95	95	70	80
	3		90	90	95	90	90	90	90	90	90	85	70
	4		90	95	95	90	95	90	95	90	90	85	75
	Average		**91,25**	**92,50**	**95,00**	**90,00**	**92,50**	**91,25**	**91,25**	**91,25**	**92,50**	**80,00**	**73,75**
* Roundup Star (600 ml/da)	1	No	100	100	100	100	100	100	100	100	100	90	90
	2		100	100	100	100	100	100	100	100	100	90	90
	3		100	100	100	100	100	100	100	100	100	95	90
	4		100	100	100	100	100	100	100	100	100	90	90
	Average		**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**	**91,25**	**90,00**
CONTROL	1	No	5	11	7	4	7	9	7	4	4	2	3
	2		4	15	9	5	6	12	4	5	3	4	2
	3		6	13	12	8	14	15	4	7	5	2	3
	4		3	10	10	5	13	9	6	8	2	2	2
	Average		**4,50**	**12,25**	**9,50**	**5,50**	**10,00**	**11,25**	**5,25**	**6,00**	**3,50**	**2,50**	**2,50**

** Phytotoxicity Dose * Comparison chemical

The numbers in the control refer to the weed of the weed in m²

Discussion

Samsun region in peach orchards; *Capsella bursa-pastoris, Poa annua, Sonchus oleraceus, Stellaria media, Bromus* spp., *Lamium amplexicaule, Calendula arvensis* and *Anagallis arvensis* were found to be intense.In peach orchards in different region of Turkey, The density is important of *A. retroflexus* L.,*A. arvensis* L., *A. tinctoria* L., *A. vulgaris* L., *C. arvensis, C. pastoris* (L.) Medik,*Carduus* spp., *C. glomeratum* Thuill., *C. album* L., *D. carota* L., *Erodium* spp., *Euphorbia* spp., *Fumaria* spp., *G. tricornutum* Dandy., *Geranium* spp., *H. europaeum* L., *H. trionum* L., *L. serriola* L., *Malva* spp., *Matricaria* spp., *Medicago* spp., *Mentha arvensis* L., *Mercurialis annua* L., *Muscari* spp., *Papaver rhoeas* L., *Plantago* spp., *P. oleracea* L., *Raphanus raphanistrum* L., *Ranunculus* spp., *Rumex* spp., *Scabiosa* spp., *Senecio vernalis* Waldst. and Kids.,*Senecio vulgaris* L., *Silene colorata* Poir., *Sinapis arvensis* L., *Solanum nigrum* L., *Sonchus* spp., *Stellaria media* (L.) Vill., *Tribulus terrestris* L., *Trifolium* spp., *Urtica urens* L., *Verbena officinalis* L., *Veronica* spp., *Lamium orientale, Alopecurus myosuroides* Huds., *Avena* spp., *Bromus* spp., *Digitaria sanguinalis* (L.) Scop., *Echinochloa* spp., *Hordeum* spp., *Lolium* spp., *Phalaris* spp., *Poa* spp., *Setaria verticiliata* (L.) P. Beauv *S. viridis* (L.) P. Beauv, *S. glauca, Acroptilon repens* (L.) DC., *Cirsium arvense* (L.) Scop., *C. arvensis* L., *E. repens, C. dactylon, Cyperus rotundus* L. *Phragmites australis* and *Sorghum halepense* (Anonymous 2017). In terms of weed species and density, Our findings the same Anonymous (2017) in Turkey.In peach garden in India, *Urochloa maxima* (Jacq.) R. Webster, *C. dactylon* (L.) Pers.,*C. rotundus* L., *Eleusine indica* (L) Gaertn., *Commelina benghalensis* L., *C. album* L., and *Parthenium hysterophorus* L. were the important weeds at the experimental site in the peach orchard during the investigations (Majek et al. 1993, Thakur et al. 2012).

Three pre-emergence herbicides, oxyflurofen, oxadiazon 0.75, 1.0, 1.25 litre (a.i.) ha(-1) and metolachlor1.0, 1.5 and 2.0 litre (a.i.) ha(-1) were applied twice, in March and October (Chikoye et al. 2005.) The orchard was found to be manifested with 7 monocot and 23 dicots prominent weed species. All the treatments significantly reduced the weed population, dry weight of weed and nutrient depletion by weeds as compared to control (unweeded). In this respect, pre-emergence herbicide oxyflurofen was found to be the most effective treatment for control of dicot weeds. Application of metolachlor and controlled both monocot and dicot weeds. The various weed control treatments had a non-significant effect on fruit yield, total soluble solids and acidity. The highest

fruit weight was obtained with oxyflurofen followed by oxadiazon and oxyflurofen. However, metolachlor proved to be most effective and economical treatment (Chatha and Chanana 2007). In the peach horticultue in North Carolina Parker and Meyer (1996) determined that peach tree growth was gerater when grown nimblewill grass *Muhlenbergia schreberi, Eremochloa ophiuroides, Paspalum notatum,* in the Pacific Northwest per annual grass (Granatstein 2002, Vrbničanin et al. 2010). In the Peach orchard of India; *C. dactylon, C. rotundus, Bidens pilosa, Tridax procumbens, Acanthospermum hispidum* and *Lagasca mollis, Polygon plebejum, Euphorbia geniculata, Amaranthus viridis, P. oleracea, Oxalis* spp., *Mullugo pentaphylla, Digitaria marginata, Eleusine indica,* and *S. glauca* were found improtant density (Sing and Rana 2016). In terms of weed species and density in the world, our findings seen partial same with other research.

The efficacy of the herbicide in the world and Turkey has found different results when examined. Because there are big differences in the world countries in terms of weed species, regional climate and soil characteristics. In the peach horticulture in California, There were several hundred weeds per square meter in the unfumigated area, consisting primarily of *Capsella bursa-pastoris* L.,*S. arvensis* L., and *Medicago hispida* Gaertn., *S. media*, and *M. neglecta* Wallr. was found dense. An interrow tillage operation in early March removed most of the weeds between the herbicide-treated bands in the fumigated blocks but did little to relieve weed competition within the row in the unfumigated area. On March 15, 2007, all Preherbicide treatments, except sulfentrazone, substantially reduced total weeds in the tree rows compared with the no-herbicide control. Control with the Post-herbicide treatments was poor, but those treatments may not have reached full impact having been applied only 2 wk before the weed counts. Later observations suggested that POST-D flumioxazin and rimsulfuron also suppressed many of the weeds present (Hanson and Schneider 2008, Dayan et al. 2011). Gramoxone at 500 ppm, mixture or 2,4,5 -T at 100 ppm and Gramoxoneat 500 ppm controlled the shrubby weeds of *Rosa moschata, Rubus* spp. and *Berberis* spp. effectively. Weed control in peach orchards with the combination of dalaponat 10 kg/ha nd ,4-D at 1.0 kg/ha when applied in two split doses. Weed control with terbacilat 3.0 and 5.0 kg/ha. *Commelina nudifera, Ageratum conyzoides* and *Euphorbia hirtawere* controlled welly 5.0 kg/ha Simazine and 3-5 kg/ha Atrazine (Abouziena et al. 2008, Sing and Rana 2016).

Conclusion

C. bursa-pastoris, P. annua, S. oleraceus, S. media, Bromus spp., *L. amplexicaule, C. arvensis* and *A. arvensis*in the experiment of the weeds in the peach gardens in Samsun (Carsamba-Köklük village)), at rates of 200 ml/da, 300 ml/da, 400 ml/da and 600 ml/da and 1200 ml/da, respectively, 200 ml/da: 52.50, 30.00, 25.00, 22.50, 38.75, 40.00, 38.75 and 42.50; 300 ml/da: 77.50, 52.50, 52.50, 53.75, 57.50, 56.25, 61.25 and 61.25; 400 ml/da: 93.75, 75.00, 76.25, 82.50, 81.25, 75.00, 80.00 and 78.75; 600 ml/da: 95.00, 92.50, 91.25, 91.25, 90.00, 91.25, 90.00 and 92.50; 1200 ml/da: 100.00, 100.00, 100.00, 100.00, 100.00, 100.00, 100.00 and 100.00, Roundup Star, used as a comparator, was found to be effective on average at average rates of 300 ml/d: 91.25, 92.50, 91.25, 91.25, 92.50, 91.25, 91.25 and 93.75 respectively.

C. bursa-pastoris, P. annua, S. oleraceus, S. media, Bromus spp.,*L. amplexicaule, C. arvensis* and *A. arvensis*, which are in the 200, 300, and 400 ml/dose trial area of the EPITAP drug, they can not be used. However, it was found to be effective more than 90% at the dose at 600 ml/dose and 100% at 1200 ml/dose. Whereas, Roundop Star used as a control herbicide was 91.87 % at 300 l/dose effective against weeds in peach garden. No phytotoxic effects were observed in the peach gardens of all doses, including the dose of 1200 ml/da, which is comparable to the phytotoxicity of the trial herbicide used in the trial.

Statistically, the EPITAPH was included in the same group as the statistically significant dose-dependent dose at 600ml/da of the comparative drug Roundup Star at 300 ml/da.

As a result of these evaluations; EPITAP which at 600 ml/da dozen effective on *P. annua, S. oleraceus, S. media, Bromus* spp.,*L. amplexicaule, C. arvensis, A. arvensis* and *C. bursa-pastoris* which is a problem in peach gardens that it can be used after these weed emergense.EPITAP can be recommended as post-emergence herbicide after emergence due to the effect it shows in in the peach orchards.

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