

PACKAGE OF PRACTICES (WEED CONTROL IN CROPS) FOR *Kharif & Rabi*- 2014-15

The following are the Weed Control recommendations in important Kharif & rabi crops, based on the research work done so far at the Integrated Weed Management Unit, Regional Agricultural Research Station, Lam.

1. Rice:

A. Upland or semi dry rice:

i) Pre emergence (with in 2 days)

Spray pendimethalin at 2.5 L ha⁻¹ immediately after sowing or with in 2 days

ii) Post emergence

15-20 Days after sowing

Post emergence spray of bispyribac sodium at 200ml /ha at 15 days after sowing will effectively control grasses and broad leaf weeds. without any phytotoxicity to rice.

20-30 Days after sowing (when dicot weeds are problematic)

Spray 2,4-D sodium salt 80% WP at 0.75 to 1.0 kg ha⁻¹ in 500 liters of water using hand compression sprayer.20-30 days after sowing.

Integration of preemergence herbicide with one hand weeding at 30-35 DAS is best

B. Transplanted Rice:

i) Rice nursery:

Spray pretilachlor at 1.0 L ha⁻¹ either with in three days after sowing as pre-emergence spray or on seventh day after sowing as early post emergence will effectively control Echinochloa and other annual monocot and dicot weeds in rice nurseries

(or)

Post emergence spray of cyhalofop butyl at 1.0 L/ha at 14 days after sowing will effectively control Echinochloa spp. without any phytotoxicity to rice.

(or)

Post emergence spray of bispyribac sodium at 200ml /ha at 15 days after sowing will effectively control grasses and broad leaf weeds without any phytotoxicity to rice.

ii) Transplanted rice:

With in 3 to 5 days after planting

Apply 2,4-D ethyl ester granules 10 kg ha⁻¹ + butachlor granules 10 kg ha⁻¹ as sand mix application.

(or)

Apply butachlor at 3 to 5 L ha⁻¹ as sand mix application

(or)

Apply anilophos at 1.33 to 1.67 l ha⁻¹ as sand mix application

(or)

Apply 2, 4-D ethyl ester granules 10 kg ha⁻¹ + anilophos 0.70 l ha⁻¹ as sand mix application

(or)

Apply 2, 4-D ethyl ester granules at 10 kg ha⁻¹ + butachlor 2.5 l ha⁻¹ as sand mix application

(or)

Oxadiargyl 80%WP 125 g ha⁻¹ in 1 litre of water as sand mix application

(or)

Apply oxadiargyl 80%WP 94 g ha⁻¹ +2,4-D ethyl ester granules 10 kg ha⁻¹as sandmix application

iii) Post emergence application (15-20 DAS)

If grassy weeds are problematic

Drain the water and spray Cyhalofop butyl @ 1.0 l /ha

(or)

If grasses and broad leaf weeds are problematic, Spray bispyribac sodium 200 ml/ha in 500 liters of water Apply water 2 days after spraying

25-30 days after planting (when dicot weeds are problematic)

Spray 2,4-D sodium salt 80% WP at 0.75 to 1.0 kg/ ha in 500 liters of water using hand compression sprayer at 20-30 days after planting.

(if crop shows yellowing symptoms, top dress with recommended Nitrogen fertilizer)

(or)

Spray ethoxysulfuron 125 g ha⁻¹ in 500 liters of water after draining water from the field at 20-30 days after planting.

2. MAIZE: (upland) / Rice fallow Maize

Spray atrazine at 2.5 to 3.5 Kg/ ha immediately or within three days after sowing

(or)

Spray Alachlor at 3.75 to 5.0 L /ha immediately or within three days after sowing

If broad leaf weeds are problematic, Spray 2,4-D sodium salt 80% WP at 1.0 kg ha⁻¹ in 500 liters of water using hand compression sprayer at 20-30 days after sowing.

3. SORGHUM:

Spray atrazine at 2.0 Kg ha⁻¹ immediately or within three days after sowing sorghum

If broad leaf weeds are problematic, Spray 2,4-D sodium salt 80% WP at 1.0 kg ha⁻¹ in 500 liters of water using hand compression sprayer at 20-30 days after sowing.

4. RAGI:

Spray pendimethalin at 2.5 L ha⁻¹ one week after transplanting ragi seedlings

(or)

Spray anilophos at 1.75 L ha⁻¹ one week after transplanting ragi

(or)

Spray 2,4-D ethyl ester at 1.5 to 2.0 l ha⁻¹ one week after transplanting ragi seedlings

5 i) PULSES- UP LAND:

Spray pendimethalin at 2.5 to 3.75 L ha⁻¹ immediately after sowing or the next day

(or)

If grassy weeds are problematic post emergence spray of fenoxaprop ethyl 9% EC at 625ml/ha

(or)

quizalofop ethyl 5% EC at 1L/ha at 20 days after sowing

(or)

For control of grasses and broad leaf weeds post emergence spray of imazethapyr @ 500 ml per ha at 15-20 days after sowing. Crop growth will be stunted for a week and recover later.

ii) Rice fallow Blackgram

For the control of Echinochloa spp, and broad leaf weeds apply benthocarb at 2.5 to 5.0 L/ha immediately after removal of paddy sheaves as sand mix application followed by spraying of water up to 1000-L/ ha depending upon the soil moisture condition.

(or)

For control of Echinochloa spp. spray fenoxaprop ethyl @ 625 ml/ha (or) propaquizafop ethyl @ 625 ml/ha (or) quizalofop ethyl at 1.0 L /ha as post emergence spray at 15-20 days after sowing.

(or)

For control of grasses and broad leaf weeds post emergence spray of imazethapyr @ 500 ml per ha at 15-20 days after sowing.

For the control of Cuscuta post emergence application of pendimethalin at 2.0 to 3.75 L/ha immediately after removal of paddy sheaves as sand mix application followed by spraying of water up to 1000 L/ha depending upon the available soil moisture on the soil surface

For the control of Vicia sativa, post-emergence application of butachlor at 4.0 L/ha or pendimethalin at 3.3 L/ha immediately after removal of paddy sheaves as sand mix application followed by spraying of water up to 1000 L. ha-1 depending upon the available soil moisture

6. GROUND NUT :

Spray pendimethalin at 2.5 to 3.75 L ha-1 immediately or with in three days after sowing.

(or)

Spray alachlor at 3.75 to 5.0 L ha-1 immediately or with in three days after sowing

(or)

Spray butachlor at 3.75 to 5.0 l ha-1 immediately or within three days after sowing

7. GINGELLY :

Spray pendimethalin at 2.5 L ha-1 immediately or within 3 days after sowing

(or)

For control of Echinochloa spp. and other grasses spray fenoxaprop ethyl @ 625 ml/ha (or) Quizalofop ethyl at 1.0 L /ha as post emergence spray at 20-25 days after sowing

8. SOYBEAN :

Spray pendimethalin at 2.5 to 3.75 l /ha immediately or within 3 days after sowing

(or)

Spray alachlor at 3.75 to 5.0 L/ha immediately after sowing

(or)

Spray imazethapyr at 625 ml/ha at 20-25 days after sowing

9. COTTON :

Spray pendimethalin at 2.5 to 3.75 l/ ha immediately or within 3 days after sowing

(or)

Spray quizalofop ethyl 1 L/ha + pyriithiobac 625 ml/ha as tank mixture at 20-25 days after sowing if inter-cultivation is not possible incessant rains

10. CHILLIES :

Spray pendimethalin at 2.5 l /ha immediately or within 3 days after sowing in case of direct sown chillies and 2.5 to 3.75 l /ha before planting incase of transplanted chillies

(or)

For control of grassy weeds spray quizalofop ethyl 1 L/ha at 20-25 days after sowing/planting if inter-cultivation is not possible incessant rains

11. SUGARCANE:

Spray atrazine at 3.3 to 5.0 Kg/ha (or) oxyflourfen 250 g/ha (or) Metribuzin 1.5 kg/ha (or) Alachlor 2.5 kg/ha in 500 L of water immediately or within three days after planting sugarcane sets . In case, if farmer is unable to apply pre emergence herbicide, weeds will come up by 7th to 10th day in such case to control weeds, spot application of paraquat 24% SL 5 ml/L of water will control emerged weeds without any much problem to planted sets in the soil. The post emergence application of herbicides are always better to apply as directed sprays even though the herbicide possess selectivity crop. Directed spray of 2,4-D sodium salt at 2.0 kg/ha +paraquat 2.5l/ha two times, first spray at 4 to 6 weeks after planting and second spray at 20 to 30 days after first spray between the rows .

At maturity stage, if twining weeds like Ipomoea, Convolvulus etc are problematic then spray 2,4-D Na salt 1.6 kg/ha (or) 2,4-D amine salt 0.58 kg/ha as post emergence directed spray.

12. PERENNIAL WEEDS IN ORCHARDS:

Perennial weeds like Cyperus rotundus, Cynodon dactylon etc. in orchards can be controlled effectively by spraying glyphosate at 2.5 to 5.0 L ha⁻¹ dissolved in 500 liters of water. Falling of the spray fluid on young fruit plant foliage should be avoided Second spray is required when there is regrowth of weeds

Note :

In case of glyphosate, the efficacy depends upon the stage of the weed (should be in active vegetative stage), age and duration of infestation (older and longer duration of infestations may required several repeated sprays on active vegetative growth), soil moisture and type of weed and nature of foliage (surface morphology/ herbicide retention and absorption). Application of glyphosate with 1% ammonium sulphate solution will enhance up take and translocation by weeds. In wide spread infestations, it is better to plough the area first induce the regrowth of the weeds and then spray glyphosate on the active growth stage.

(or)

If annual grasses and dicot weeds are prevalent the herbicide paraquat at 2.5 to 3.75 l /ha dissolved in 500 l /ha of water can be sprayed. Falling of spray fluid on fruit trees should be avoided.

ANNEXURE

Common name, trade name, and active ingredient of the herbicides included in the recommendations.

| S.No. | Herbicide | | Percent active ingredient |
|-------|----------------------------|---|---------------------------|
| | Common Name | Trade Name | |
| 1 | Alachlor | Lasso, Alatop | 50%EC |
| 2 | Anilofos | Aniloguard, Arozin, weedonil, Anildhan | 30 %EC |
| 3 | Atrazine | Atrataf, Solaro, Milzin, Surya,Atratop,Atrafil,Ultrakem | 50 % WP |
| 4 | Butachlor EC | Butachlor, Trapp, Teer, Machete. | 50 %EC |
| 5 | Butachlor | Butachlor (G) | 5 % Granules |
| 6 | Glyphosate (IPA salt) | Glycel, Weed off, Noweed, Glyphos,Brake, Round up, Clean up, Rulout | 41%SL |
| 7 | Glyphosate (Ammonium salt) | Excelmera, Glyfos dekor, Allkill | 71%SG |
| 8 | Paraquat | Gramoxone, Uniquat, Paralac | 24% EC |
| 9 | Pendimethalin | Stomp, Pendiguard, Pendiherb, Pendistar, Tatapanida, Bond | 30%EC |
| 10 | 2,4-D EE | Agrodone conc. 48, Herbonil | 36% EC |
| 11 | 2,4-D EE | Agrodex and Knock weed granules | 4% Granules |
| 12 | 2,4-D Na salt | Fernoxone, Weed mar, Salix | 80% WP |
| 13 | Oxadiargyl | Topstar, Oximain | 80 % WP |
| 14 | Oxyfluorfen | Goal, Oxygold, Galigan, Kroll | 23.5%EC |
| 15 | Pretilachlor | Rifit, Erazze, Preet, Pretiherb | 50%EC |
| 16 | Fenoxaprop ethyl | Whip super, Fenixasil, Dell power | 9%EC |
| 17 | Cyhalofop butyl | Clincher, Wrap up | 10%EC |
| 18 | Quizalofop ethyl | Targa super | 5%EC |
| 19 | Metribuzin | Tatametri, Sencor, Tribute, Metriagon | 70% WP |
| 20 | Pyrazosulfuron ethyl | Saathi | 10% WP |
| 21 | Butachlor + 2,4-D EE | Anuchlor + knockweed Butachlor+2,4-D EE | 5%+4%G |
| 22 | Imazethapyr | Pursuit, Lagam, Dinamaz, Perfect, Weedlock | 10 % EC |
| 23 | Bispyribac sodium | Nominee gold, Tarak, Edora | 10%EC |
| 24 | Pyriothiobac | Theme, Hitweed, Rife | 10%SL |
| 25 | 2,4-D amine salt | Weedmar super, Dura | 58%EC |
| 26 | Ethoxysulfuron | Sunrice | 15% WDG |
| 27 | Propaquizafop | Society, Agil, Opal | 10 % EC |
| 28 | Cyhalofopbutyl | Clincher , Wrap up, Dentil | 10% EC |