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## Skeleton weed in Western Australia Control Program 2021/22

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Department of  
Primary Industries and  
Regional Development



Grains, Seeds and Hay  
Industry Funding Scheme

# Skeleton weed in Western Australia

## Control Program 2021/22



Early detection is  
the best prevention

Copies of this document are available  
in alternative formats upon request.

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**To maintain the most up-to-date information for landholders, this section of the Skeleton Weed Management Guide is reviewed annually.**



This small plant, only 4.3cm high contains  
14 buds, 1 flower and 1 seed head

# Program changes for 2021/22

## Winter Spraying Program

The Program now includes:

- Recommendations for control in legume based annual pastures.
- Provision of clopyralid (Lontrel™) herbicide to eligible landholders, to undertake their own spraying of paddocks that are greater than 10% infested (by area), and known as heavily infested paddocks, has been retained (introduced in 2019/20).

## Summer Search Assistance Scheme

The Program now includes:

- **Code 1** paddocks are eligible for search assistance, including paddocks treated with clopyralid during the 2021 growing season.
- **Code 2** paddocks re-infestations, where plants are found and are therefore “re-infested paddocks” this season will still be eligible for search assistance (introduced in 2019/20).
- **Code 3** paddock searching will still be eligible for search assistance (introduced in 2018/19).

## Limiting paddock search areas

- Where possible, project staff look to limit new paddock search areas to a maximum of 100ha.
- Where paddocks are worked up and down using knife points (or other minimum till) a 100m buffer from the infested area can be applied to delimit the paddock search area.
- In determining the “paddock search area”, program staff will consider:
  - Paddock topography – creek lines and other natural boundaries.
  - How the paddock is worked and the location of the actual infested area.

## Search Assistance Rate

- The rates for search assistance remain the same. Eligibility for search assistance is outlined in Table 1 on the following page.



**Table 1:** Skeleton weed paddock codes and search assistance eligibility

<b>Paddock code</b> <b>Status description</b>	<b>Search assistance</b>	<b>Comments</b>
<b>Code 1</b>		
<b>Currently infested paddock</b> Plants found last search season 2020/21 <b>Newly infested paddock</b> Plants found this search season 2021/22 <b>Re-infested paddock</b> Code 2 paddock where plants are found this search season 2021/22	Eligible to Grains IFS contributors	Search assistance is available for landholder or contract searching
<b>Code 2</b>		
<b>First clear search</b> No plants found last search season 2020/21		Code 2 paddocks progress to Code 3 after a clear search
<b>Code 3</b>		
<b>Second consecutive clear search</b> No plants found last two search seasons 2019/20 and 2020/21	Eligible to Grains IFS contributors	Search assistance is available for landholder or contract searching
<b>Code 4</b>		
<b>Third consecutive clear search</b> Paddock can be released from 'Infested List'		Release is pending audit of search by DPIRD or LAG staff
<b>Code 5</b>		
<b>Surveillance search</b> No plants found		Surveillance search of suspected paddocks

**Table 2:** Skeleton weed winter treatment assistance eligibility

Type	Description	Winter treatment assistance	Comments
<b>Infested squares</b>	Mapped (dGPS) areas within the paddock that are currently infested with skeleton weed.	Eligible* chemical supply and application.	Landholders wanting to undertake their own spraying application of infested squares, will be provided with chemical.
<b>Heavily infested paddocks</b>	Defined paddocks that are more than 10% infested across the paddock area.	Eligible** chemical supply (only).	Landholders are required to apply the chemical supplied as directed by program staff.

\* Picloram based products only

\*\* Clopyralid based products only





# Summer control of skeleton weed

Summer control is aimed at controlling the above-ground part of the plant to prevent viable seed set. There are several options for controlling skeleton weed during the summer months. For a list of available trade names and concentrations of active constituents, refer to the Appendices (Table 1).

## Small infestations

- Tordon™ Granules can be used for single plants and small infestations, at a rate of 20 to 45g/m<sup>2</sup>. Sprinkle granules over plants and over the ground in a 1m buffer around each plant. Then cut and remove all stems to prevent seed production while the chemical takes effect.
- Spot spray with a mixture of 1L of Glyphosate450 plus 1L of FallowBoss™ TORDON™ (or 2,4-D/picloram mix) plus 250ml of Pulse™ (or equivalent) in 100L of water and spray the plants plus a 1m buffer area until just wet. Other formulations of glyphosate are available and if used the rates should be adjusted accordingly.
- Where small numbers of plants are seeding, cut and bag stems before spraying. Burn all cuttings.

## Large infestations

- Boom spray the whole paddock if infestations are widely scattered, to control possible missed plants.
- Treat large areas of **flowering and seeding plants** (where cutting and bagging is impractical) with SpraySeed250 at a rate of 1–2L/ha (minimum recommendation). This treatment will act quickly and prevent further flowering and seeding for several weeks. The addition of Diuron900 will improve control and lengthen the period between retreatments. Rates of 1L/ha of SpraySeed250 + 250g/ha of Diuron900 have generally provided good control in trials when applied in summer. Cereals, grain legumes (e.g. lupins, peas, faba beans) and canola can be planted in autumn and legume-based pastures (e.g. clover, medic, serradella) will establish with the opening rains.
- On paddocks to be planted to cereals follow up with a spray of 1.5–2.25L/ha of Glyphosate450 plus 700ml/ha of FallowBoss™ TORDON™ a week before planting and 1L/ha of MCPA/picloram mix when the crop is from tillering to early jointing.
- Monitor infested sites regularly, approximately every two to three weeks throughout summer and autumn and after rain events.

## Treatment of pre-flowering skeleton weed

- For legume-based pastures (e.g. clover, medic, serradella) and paddocks to be planted to legumes (e.g. lupins, peas, beans), apply a mixture of 1-2L/ha of Glyphosate450 plus 0.5–1L/ha of 2,4-D ester680.
- For paddocks to be planted to cereals apply 2L/ha of 2,4-D/picloram mix with 1L/ha of Glyphosate450. **This is expensive but should control the skeleton weed for the entire summer, removing the need to maintain close surveillance.**
- Research has shown that the SpraySeed250 treatment will give about 5 weeks suppression of viable seed formation; Glyphosate450 + 2,4-D ester680 about 8 weeks; and the 2,4-D/picloram mix + Glyphosate450 will prevent viable seed formation for longer than 14 weeks (see Table 3 below).

**Table 3:** Cumulative viable seed production per plant

Treatment rate L/ha	Days after treatment					% Reduction
	35	56	68	83	99	
<b>SpraySeed250 + wetting agent (0.25%)</b>  <b>2.0</b>	0	76	311	330	338	69.4
<b>Glyphosate + 2,4-D ester (80%) + DC Trate oil (2%)</b>  <b>1.5 + 0.5–0.7</b>	0	0	2	33	44	96
<b>Tordon™ 75D + glyphosate + wetting agent (0.25%)</b>  <b>1.5 + 0.5</b>	0	0	0	0	0	100
<b>Unsprayed</b>	94	637	752	833	1108	0

Tordon 75-D is no longer available. There are many other products with a similar mix of 2,4-D + picloram. FallowBoss™ TORDON™ can also be used which is a mix of 2,4-D + picloram + aminopyralid.

## Other summer control requirements

Ask for guidance if unsure of your obligations and always observe relevant safety precautions.

- **Pay attention to biosecurity on leaving infested areas – clean vehicles down thoroughly to reduce risk of seed spread. This will also prevent landholders tracking the weed back to their farm paddocks.**
- Known infested areas must be searched using the **Full Search** protocol.
- **Search adjoining** 'suspect' areas where possible, including road verges 300m either side of roadside infestations.
- **Record GPS** coordinates where possible.
- **Cut and bag** flowering/seeding plants where appropriate.
- **Extend squares** (or be prepared to) if plants emerge outside marked areas as the 10m buffer must be maintained at all times.
- **Notify DPIRD/LAG** staff of any additional plants, extended or new squares found throughout summer and autumn. This will assist with the coordination of the Winter Spray Program.
- **Check sites regularly** over summer and autumn as plants may emerge or become more evident post-search or may regenerate after treatment.
- **Record all search/treatment** details on the **Infested property paddock record** issued to you when you first reported skeleton weed.

**Random audit inspections will be undertaken by authorised DPIRD/LAG staff.**

## Helpful tips for infested broadacre landholders

- Regularly monitor all infested sites throughout summer and autumn, particularly after rain, and be prepared to extend squares if plants emerge outside marked areas.
- If you have an infestation on a property boundary, assist your neighbours with surveillance searching on adjacent paddocks within their boundary.
- Carry flagging tape in all vehicles, including headers, to mark plants.
- Adding 200ml/ha of Picloram240 or 700ml/ha of Picloram/2,4-D mix or 500ml/ha of Picloram/triclopyr mix to the summer spray mix improves residual control.

Ensure all staff and family members on your business/property know how to identify skeleton weed.

- Aim to harvest infested paddocks **before mid December** to avoid harvesting through seeding plants.
- Grain from infested paddocks harvested **after mid December** should not be sold for seed.
- Remove all produce (for example hay) as soon as practicable before searching.
- Thoroughly clean down all equipment (including seeding and harvesting machinery) that has been driven/worked through any infested paddock prior to exiting the paddock, using water or air.

Do not remove/dismiss plants you're unsure of – treat any spindly green plant with suspicion.

- Get into the habit of checking all paddocks prior to moving stock into them.
- Remove stock four weeks prior to searching paddocks and re-stock post-search (to prevent missed plants seeding) with (preferably) non-saleable stock – sheep grazed on infested paddocks during the summer must be sold bare-shorn unless sold for slaughter.
- Kangaroos and rabbits graze on skeleton weed, making it difficult to find even if stock have been removed.

# Winter treatment of skeleton weed

## Treatment of “marked out squares”

**Chemical treatments of infested squares during the winter months aims to eradicate plants using herbicide products containing picloram mixtures. The active constituent picloram works best when soil moisture levels are high.**

- It is the landholders' responsibility to ensure infestations are adequately marked and maintained prior to the Winter Spray Program.
- It is recommended landholders **do not seed through infested squares** found during summer, as cultivation may spread live root fragments.
- However, as part the ongoing program adaptations to changing farming practices, **landholders can work through infested areas “squares” when cropping paddocks in first year – under certain conditions:**
  - This will only apply to paddocks that are not ‘Heavily Infested (Lontrel) paddocks’, but where there are multiple “squares” across the paddock (Search Area).
  - Landholders will need to consult with DPIRD or LAG staff before working through the “squares” – **as not working through the “squares” may still be the best option for their situation.**
  - Landholders need to be fully aware that the eradication protocols for “Winter Treatment” will apply and that the infested areas (that have been seeded through) will be treated for eradication in winter with (up to) 7L/ha of picloram based herbicide that may kill crop.
  - Where there is only one, or a small number of “squares” in the paddock – it is still preferable **not to work through these in the first year.**

- **Winter spraying of marked squares** is completed by the landholder, a registered contractor or DPIRD/LAG staff at no direct cost to the landholder.
- The landholder, or a nominated representative, is required to accompany the operator during spraying of infested sites.
- Treat using 7L/ha of herbicides containing picloram (see Appendices Table 1 for trade names). Apply in a minimum volume of 50L water/ha.
- All seeding equipment must be thoroughly cleaned down prior to exiting any infested paddock.
- Landholders who undertake their own winter spraying must ensure it is completed properly to be eligible for search assistance the following summer.
- Winter spray audits will be carried out on infested properties by DPIRD or LAG staff.

Don't forget to notify your local DPIRD or LAG office if you find more plants before winter spraying. Sites that are not officially recorded will not be eligible for winter treatment.





## Treatment of “heavily infested paddocks”

A paddock with more than 10% of infested area will require a “whole paddock treatment”. The decision to apply a whole paddock treatment is made by a DPIRD or LAG officer in conjunction with the landholder.

- **Winter spraying of heavily infested paddocks** (previously referred to as “Lontrel paddocks”) have traditionally been the responsibility of the landholder to spray in winter.
- Sow the entire paddock or paddock section (whichever applies) with a cereal crop. The use of SpraySeed250 as a knockdown treatment is preferred as glyphosate has a retarding effect on skeleton weed growth and the regrowth may not be present at the time the post-emergent spraying is carried out.
- Ensure you clean your seeding equipment prior to moving onto the next paddock or paddock section. If possible, seeding skeleton weed infested paddocks last will minimise the spread of skeleton weed root fragments.
- Treat the crop post-emergence with Lontrel750 and a MCPA/picloram mix at the minimum rate of 200g/ha and 1L/ha respectively (see Appendices Table 3).

Only chemical is provided for whole paddock treatment by the Skeleton Weed Program.



## Treatment options for erosion-prone soils

The use of MCPA/picloram mixes over large areas to treat skeleton weed may leave light sandy soils exposed to erosion. Use of the following recommendations must be done only after consultation with DPIRD officers.

### Recommendation 1: Erosion-prone soils in cropping rotation

#### Non-crop phase

- Treat the infested area/squares with herbicides such as clopyralid, clopyralid + MCPA or clopyralid + 2,4-D amine or ester at the maximum label rates for the situation. Using clopyralid alone will allow grasses and brassica weeds such as radish and turnips to grow and provide protection against erosion.
- For small infestations, cut and bag stems and burn all cuttings.
- Spray the plant, plus a 1m radius buffer with 1L/ha of 2,4-D/picloram mix plus 250ml of Pulse or equivalent in 100L water.
- OR apply 60-135g of Tordon™ Granules in a 1m radius around where plants were located.

#### In-crop treatment

- Using clopyralid, clopyralid + MCPA or clopyralid + 2,4-D and summer spraying will reduce the risk of plants producing seed.



## Recommendation 2: Preserving pasture in a non-cropping situation

- Manage grazing to allow skeleton weed rosettes to run up prior to inspection to make them easier to detect.
- Assess the extent of the infestation.
- In grass based pastures with low legume and capeweed cover, treat the pasture with clopyralid + MCPA or clopyralid + 2,4-D amine. This treatment will not affect the grasses, thereby reducing the potential for baring the soil and causing soil erosion.
- Areas west of Gingin to north of Moora, with permanent pastures and considerable amounts of tagasaste growing, should avoid products containing picloram. These products will affect pasture and kill adjacent rows of tagasaste.
- Any spring treatments of clopyralid + MCPA or 2,4-D or spring/summer treatments of glyphosate + 2,4-D ester should be applied between the rows only, while avoiding any contact with the foliage of the tagasaste. This treatment is best applied in late spring after the annual legumes have flowered and set seed.
- Where the infestation is growing amongst the rows, it may be necessary to spot treat with one of the picloram products and accept that this will kill any adjacent tagasaste plants. The same applies for small infestations growing in amongst horticulture crops or forestry.
- Treat the main area of infestation with glyphosate + clopyralid after annual pasture has seeded and dried off.
- For small infestations cut and bag stems before treating with 2,4-D/picloram mix, FallowBoss™ TORDON™ or Tordon™ Granules in a 1m radius around plants.
- Burn all cuttings.
- Repeat annual treatment applications at or near flowering of skeleton weed, until infestation numbers are reduced sufficiently to allow all remaining plants to be treated using spot applications of the more residual products containing picloram.

# Skeleton weed in urban properties

The Grains, Seeds and Hay Industry Funding Scheme does not provide search assistance or winter treatment to urban landholdings. As the manager/owner (person responsible for land infested with skeleton weed) you are obliged to search for, and eradicate at your own expense, all skeleton weed found on your property.

- Prevent the active movement of seed and root fragments from your property - ensure that the risk of contaminated soil, produce and equipment moving off the property is minimised.
- Prevent the setting of viable seeds in known infested locations - adjoining 'suspect' areas should be searched where possible, including road verges 300m either side of roadside infestations.
- Treat all plants as per recommendations.
- Submit a completed **Skeleton Weed Record Sheet** and **business site plan** indicating locations of infestations to DPIRD by **1 April** each year, along with your **Statutory Declaration**.
- DPIRD will conduct audits of infested properties to ensure infestations are being effectively treated.
- **DPIRD can undertake surveillance and treatment on your behalf, on a fee-for-service basis.**

All skeleton weed must be reported to DPIRD within 48 hours and treated to prevent seed set.





## Eradication treatments in urban areas

**Urban landholders/managers are required to meet search and treatment protocols similar to broadacre landholders. Ask for guidance if unsure of your obligations and always observe relevant safety precautions.**

### Summer herbicide application:

- Prevents further growth of skeleton weed plants as well as seed setting, but is unlikely to kill well established, robust plants.

### Winter herbicide application:

- Will more likely kill mature plants, as the rain and higher levels of soil moisture allow herbicides to permeate deep into the root zone of the weed. The type of winter treatment used will depend on your specific circumstances.
- Infestations in or adjacent to sensitive areas like roads, public recreation spaces and market gardens are given special consideration and decisions on treatment in these instances will be made in conjunction with the landholder/manager.
- **DPIRD recommends the use of Tordon™ Granules in the Perth metropolitan area.**
- All winter treatments administered by landholders/managers must be recorded on the Skeleton Weed Record Sheet, and that record provided to DPIRD on request.
- Where there is evidence of non-compliance with the protocols, all costs associated with winter treatment will be recovered from the landholder/manager.



Infested sites must not be disturbed, cultivated, or worked through in any way

# Appendices

**Table 1.** Trade names of products used for skeleton weed control

Trade Name Examples	Active Ingredient
<ul style="list-style-type: none"> <li>• FALLOWBOSS TORDON™</li> </ul>	2,4-D (300 g/L) + aminopyralid (7.5g/L) + picloram (75g/L)
<ul style="list-style-type: none"> <li>• TORDON GRANULES-WEED &amp; BRUSH HERBICIDE</li> </ul>	Picloram (20g/kg)
<b>2,4-D/picloram mix</b> <ul style="list-style-type: none"> <li>• 4FARMERS 2,4-D PLUS PICLORAM HERBICIDE™</li> <li>• CONQUEST DEPIC 75-D HERBICIDE™</li> <li>• ENFORCER 75-D HERBICIDE™</li> <li>• IMTRADE COMMANDER 75-D HERBICIDE™</li> <li>• KENSO AGCARE BUCKO 75-D HERBICIDE™</li> <li>• TORDON 75-D HERBICIDE™</li> <li>• TROOPER 75-D HERBICIDE™</li> </ul>	2,4-D (300 g/L) + picloram (75g/L)  <b>NB.</b> There are about 22 products registered for this category.
<b>MCPA/picloram mix</b> <ul style="list-style-type: none"> <li>• 4FARMERS MCPA/PICLORAM CEREAL HERBICIDE™</li> <li>• CONQUEST BUCKWHEAT CEREAL HERBICIDE™</li> <li>• ENFORCER 242 CEREAL HERBICIDE™</li> <li>• ENFORCER 242 HERBICIDE™</li> <li>• IMTRADE COMMANDER CEREAL HERBICIDE™</li> <li>• KENSO AGCARE BUCKO 242 HERBICIDE™</li> <li>• TROOPER 242 HERBICIDE™</li> </ul>	MCPA (420g/L) + picloram (26g/L)  <b>NB.</b> There are about 28 products registered for this category.
<b>Picloram/triclopyr mix</b> <ul style="list-style-type: none"> <li>• 4FARMERS TRI-PICK HERBICIDE™</li> <li>• CONQUEROR HERBICIDE™</li> <li>• CONQUEST HATCHET HERBICIDE™</li> <li>• FIGHTBACK HERBICIDE™</li> <li>• GRAZON DS HERBICIDE™</li> <li>• IMTRADE PICKER HERBICIDE™</li> <li>• KENSO AGCARE KEN-ZON HERBICIDE™</li> </ul>	Picloram (100g/L) + triclopyr (200g/L)  <b>NB.</b> There are about 34 products registered for this category
<b>Clopyralid300</b> <ul style="list-style-type: none"> <li>• 4FARMERS CLOPYRALID 300 SELECTIVE HERBICIDE™</li> <li>• ARCHER HERBICIDE™</li> <li>• CONQUEST CORSAIR HERBICIDE™</li> <li>• IMTRADE RALLY 300 SL HERBICIDE™</li> <li>• KENSO AGCARE KEN-TREL 300 HERBICIDE™</li> <li>• LONTREL HERBICIDE™</li> <li>• VICTORY HERBICIDE™</li> </ul>	Clopyralid (300g/L)  <b>NB.</b> There are about 40 products registered for this category



Trade Name Examples	Active Ingredient
<b>Clopyralid750</b> <ul style="list-style-type: none"> <li>• 4FARMERS CLOPYRALID 750 SG HERBICIDE™</li> <li>• CONQUEST CORSAIR DRY 750 SG HERBICIDE™</li> <li>• IMTRADE RALLY 750 SG HERBICIDE™</li> <li>• KENSO AGCARE KEN-TREL 750 SG HERBICIDE™</li> <li>• LONTREL 750 SG HERBICIDE™</li> <li>• LONTREL FORESTRY HERBICIDE™</li> <li>• NUFARM ARCHER 750 DUAL SALT LIQUID HERBICIDE™</li> <li>• VICTORY 750 SG HERBICIDE™</li> <li>• VICTORY IVM HERBICIDE™</li> </ul>	Clopyralid (750g/kg)  <b>NB.</b> There are about 42 products registered for this category
<b>Picloram240</b> <ul style="list-style-type: none"> <li>• FARMALINX STUKA FLEXI HERBICIDE</li> <li>• MACSPRED PICLORAM HERBICIDE</li> <li>• PICOFLEX HERBICIDE</li> </ul>	Picloram (240g/L)  <b>NB.</b> There are about 3 products registered for this category
<b>Brodal500</b> <ul style="list-style-type: none"> <li>• 4FARMERS DIFLUFENICAN 500 SELECTIVE HERBICIDE™</li> <li>• ADAMA BONANZA ELITE HERBICIDE™</li> <li>• BONANZA ELITE HERBICIDE™</li> <li>• BRODAL OPTIONS SELECTIVE HERBICIDE™</li> <li>• CONQUEST DEFCON 500 SC SELECTIVE HERBICIDE™</li> <li>• DIFEN OPTIONS SELECTIVE HERBICIDE™</li> </ul>	Diflufenican (500g/L)  <b>NB.</b> There are about 41 products registered for this category
<b>Diuron900</b> <ul style="list-style-type: none"> <li>• 4FARMERS DIURON 900 DF HERBICIDE</li> <li>• ADAMA DIURON 900 WDG HERBICIDE</li> <li>• CONQUEST DIURON 900 WG HERBICIDE</li> <li>• DIUREX WG HERBICIDE</li> <li>• IMTRADE DIURON 900 WG HERBICIDE</li> <li>• KENSO AGCARE DIURON 900 WG HERBICIDE</li> </ul>	Diuron (900g/kg)  <b>NB.</b> There are about 40 products registered for this category

Trade Name Examples	Active Ingredient
<b>2,4-D ester680</b> <ul style="list-style-type: none"> <li>• 4FARMERS 2,4-D LV ESTER 680 SELECTIVE HERBICIDE</li> <li>• ADAMA 2,4-D LV ESTER 680 HERBICIDE</li> <li>• CONQUEST LV ESTER 680 HERBICIDE</li> <li>• ESTERON LV HERBICIDE</li> <li>• IMTRADE LV ESTER 680 HERBICIDE</li> <li>• KENSO AGCARE KEN-ESTER LV 680 SELECTIVE HERBICIDE</li> <li>• NUFARM ESTERCIDE XTRA 680 HERBICIDE</li> </ul>	2,4-D LV ester (680g/L)  <b>NB.</b> There are about 44 products registered for this category
<b>2,4-D amine625</b> <ul style="list-style-type: none"> <li>• 4FARMERS 2,4-D AMINE 625 SELECTIVE HERBICIDE</li> <li>• ADAMA 2,4-D AMINE 625 HERBICIDE</li> <li>• BATON LOW HERBICIDE</li> <li>• CHEMAG SMASH 625 LOW SELECTIVE HERBICIDE</li> <li>• CONQUEST AMINE 625 SELECTIVE HERBICIDE</li> <li>• CONQUEST AMINE 700 DUAL SALT SELECTIVE HERBICIDE</li> <li>• IMTRADE SMASH 625 SELECTIVE HERBICIDE</li> <li>• KENSO AGCARE KEN-AMINE 625 SELECTIVE HERBICIDE</li> <li>• NUFARM AMICIDE ADVANCE 700 SELECTIVE HERBICIDE</li> <li>• NUFARM AMINE 625 SELECTIVE HERBICIDE</li> <li>• ZEPHYR 625 2,4-D LOW ODOUR HERBICIDE</li> <li>• ZULU XT HERBICIDE</li> </ul>	2,4-D Amine (625-700g/L)  <b>NB.</b> There are about 80 products registered for this category
<b>MCPA amine750</b> <ul style="list-style-type: none"> <li>• 4FARMERS MCPA 750 SELECTIVE HERBICIDE</li> <li>• ADAMA MCPA 750 HERBICIDE</li> <li>• ADAMA MCPA 750 SL HERBICIDE</li> <li>• CANVAS 750 SELECTIVE HERBICIDE</li> <li>• CONQUEST MCPA 750 SELECTIVE HERBICIDE</li> <li>• IMTRADE MCPA 750 SELECTIVE HERBICIDE</li> <li>• KENSO AGCARE MCPA 750 SELECTIVE HERBICIDE</li> <li>• NUFARM AGRITONE 750 SELECTIVE HERBICIDE</li> <li>• THISTLE-KILLEM 750 SELECTIVE HERBICIDE</li> </ul>	MCPA amine (750g/L)  <b>NB.</b> There are about 60 products registered for this category

Trade Name Examples	Active Ingredient
<b>Diflufenican/MCPA</b> <ul style="list-style-type: none"> <li>• 4FARMERS LV MCPA/DIFLUFENICAN SELECTIVE HERBICIDE</li> <li>• CONQUEST RADICATE SELECTIVE HERBICIDE</li> <li>• IMTRADE LIONEX SELECTIVE HERBICIDE</li> <li>• KENSO AGCARE TEXUS SELECTIVE HERBICIDE</li> <li>• LEGACY MA HERBICIDE</li> <li>• LEGACY MA-X HERBICIDE</li> <li>• NUFARM NUGREX SELECTIVE HERBICIDE</li> <li>• TIGREX SELECTIVE HERBICIDE</li> <li>• T-REX SELECTIVE HERBICIDE</li> </ul>	Diflufenican (25g/L) + MCPA (250g/L)  <b>NB.</b> There are about 39 products registered for this category
<b>Metsulfuron600</b> <ul style="list-style-type: none"> <li>• 4FARMERS METSULFURON-METHYL 600 WG SELECTIVE HERBICIDE</li> <li>• CONQUEST METSULFURON 600 WG HERBICIDE</li> <li>• IMTRADE METSULFURON 600 WG HERBICIDE</li> <li>• KENSO AGCARE KEN-MET 600 WG HERBICIDE</li> <li>• LYNX WG HERBICIDE</li> <li>• NUFARM ASSOCIATE HERBICIDE</li> </ul>	Metsulfuron (600g/kg)  <b>NB.</b> There are about 55 products registered for this category
<b>SpraySeed250</b> <ul style="list-style-type: none"> <li>• 4FARMERS BROWN OUT 250 HERBICIDE™</li> <li>• CONQUEST SCORCHER 250 HERBICIDE™</li> <li>• FARMOZ SPRAY &amp; SOW HERBICIDE™</li> <li>• IMTRADE SPRAYKILL 250 HERBICIDE™</li> <li>• KENSO AGCARE SPEEDY 250 HERBICIDE™</li> <li>• NUFARM REVOLVER HERBICIDE™</li> <li>• SPRAY.SEED 250 HERBICIDE™</li> </ul>	Diquat (115g/L) + paraquat (135g/L)  <b>NB.</b> There are about 43 products registered for this category

Trade Name Examples	Active Ingredient
<p><b>Glyphosate450</b></p> <ul style="list-style-type: none"> <li>• 4FARMERS GLYPHOSATE 450 HERBICIDE™</li> <li>• 4FARMERS GLYPHOSATE 450 MEA™</li> <li>• CHEMAG REBELLION 450 HERBICIDE™</li> <li>• CONQUEST GLYPHOSATE 450 HERBICIDE™</li> <li>• CONQUEST KNOCKOUT 450 HERBICIDE™</li> <li>• GLADIATOR CT HERBICIDE™</li> <li>• IMTRADE ERADICATOR 450 HERBICIDE™</li> <li>• IMTRADE ERADICATOR PRO 450 HERBICIDE™</li> <li>• IMTRADE ERADICATOR X 450 HERBICIDE™</li> <li>• KENSO AGCARE KEN-UP 450 CT NON-SELECTIVE, TRANSLOCATED HERBICIDE™</li> <li>• KENSO AGCARE KEN-UP GRAND 450 CT NON-SELECTIVE, TRANSLOCATED HERBICIDE™</li> <li>• KENSO AGCARE NUGGET NON-SELECTIVE HERBICIDE™</li> <li>• TOUCHDOWN 450 HERBICIDE™</li> <li>• WIPE-OUT 450 HERBICIDE™</li> <li>• WIPE-OUT 450 NON-RESIDUAL HERBICIDE™</li> <li>• WIPE-OUT PRO HERBICIDE™</li> </ul>	<p>Glyphosate (450g/L)</p> <p><b>NB.</b> There are about 157 products registered for this category</p>

**Table 2.** Conversion rates – for different formulations of glyphosate based on the 450 formulation.

Glyphosate formulation		Rate/ha			
360	0.25L	0.50L	1.00L	1.50L	2.00L
450	0.20L	0.40L	0.80L	1.20L	1.60 L
490	0.18L	0.37L	0.73L	1.10L	1.47L
500	0.18L	0.36L	0.72L	1.08L	1.44L
540	0.17L	0.33L	0.66L	1.00L	1.33L
680	0.13kg	0.26kg	0.53kg	0.79kg	1.07kg
690	0.13kg	0.26kg	0.52kg	0.78kg	1.04kg
700	0.13kg	0.26kg	0.51kg	0.77kg	1.03kg
840	0.11kg	0.21kg	0.43kg	0.64kg	0.87kg

**What is the difference between these two plots?  
The one on the left was managed for skeleton weed.**



**Table 3.** Herbicide guide – best practice skeleton weed.

Crop		Preferred herbicides	Rate per hectare
<b>Wheat &amp; Barley</b>	Pre-seeding	Glyphosate450 + FallowBoss™ TORDON™	1L to 2L + 700ml
	In Crop Post emergence (early tillering to flag leaf emergence) (Z15,22-37)	Clopyralid300 or Clopyralid750 + Metsulfuron600 + 2,4-D/picloram mix	500ml or 200g (for 300g/L or 750g/kg) + 3g + 300ml
<b>Oats</b>	Pre-seeding	Glyphosate450 + FallowBoss™ TORDON™	1L to 2L + 700ml
	In Crop Post emergence (early tillering to flag leaf emergence) (Z15,22-37)	Clopyralid300 or Clopyralid750 + 2,4-D/picloram mix	500ml or 200g (for 300g/L or 750g/kg) + 300ml
<b>Canola</b>	Pre-seeding	SpraySeed250	1L to 2L
	In Crop Early post emergence (2-8 leaves)	Clopyralid300 or Clopyralid750	300ml or 120g



Crop		Preferred herbicides	Rate per hectare
Lupins	Pre-seeding	Glyphosate (various formulations)	Use rate for other crop weeds or 2L/ha Glyphosate450
		<b>or</b> SpraySeed250	1L to 2L
	In Crop	Brodal500	200ml
Pasture	Early post emergence (2-6 leaves & plants 4-10cm tall)		
		Early treatment (clover at least 3 leaf stage)	
	Winter	Diffufenican/MCPA + 25g/L diflufenican)	1L
		<b>or</b> Brodal500	200ml
All crops & pasture	Summer	2,4-D amine625	1L graze heavily after spraying
		<b>or</b> Clopyralid300 or Clopyralid750 <b>+ MCPA amine750.</b> Will damage clovers, medics and serradella	70ml or 28g  +1L
		SpraySeed250 if seed is starting to form	1L to 2L
		<b>or</b> Glyphosate450 <b>+ 2,4-D ester680</b> for earlier sprays	1L to 2L <b>+ 700ml</b>



Further information is available from:  
**[agric.wa.gov.au/skeletonweed](http://agric.wa.gov.au/skeletonweed)**

or

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**Project Manager Skeleton Weed**

Invasive Species and Environment Biosecurity  
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# Report skeleton weed sightings to your nearest Department of Primary Industries and Regional Development (DPIRD) or Local Action Group (LAG) office

DPIRD		LAG	
Albany	9892 8444	Avon South	0436 426 836
Esperance	9083 1111	Central Wheatbelt	0497 256 196
Geraldton	9956 8555	Lakes	0409 351 373
Merredin	9081 3111	Lower Lockhart	0438 892 460
Moora	9651 0555	Mortlock	0427 291 705
Narembeen	9064 7131	Narembeen	0428 647 113
Narrogin	9881 0222	Yilgarn	9049 2007
Northam	9690 2000		

## Metropolitan reports should be directed to



MyPestGuide™ Reporter  
via app or online [mypestguide.agric.wa.gov.au](http://mypestguide.agric.wa.gov.au)

Pest and Disease Information Service  
(08) 9368 3080  
[padis@dpiird.wa.gov.au](mailto:padis@dpiird.wa.gov.au)