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30-6-2018

## Bedstraw eradication program: annual report to grain growers 2017/2018

Department of Primary Industries and Regional Development, Western Australia

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# **Report to grain growers Bedstraw Eradication Program 2017/18**

## **Foreword**

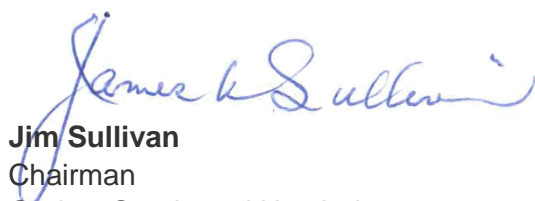
On behalf of my fellow committee members, I am pleased to present this report outlining the delivery and outcomes of the 2017/18 Bedstraw Eradication Program to the contributors of the Grains, Seeds and Hay Industry Funding Scheme.

The 2017/18 Bedstraw Eradication Program hit all its milestones and the two bedstraw-infested properties are now in the final phase of a nine-year eradication program.

This is particularly exciting, as eradicating any weed species is a notoriously difficult exercise. The determination of the program staff and affected landholders has seen success in preventing seed-set and reducing the soil-borne seed bank on both properties.

An important aspect of the Industry Funding Scheme is that it is industry's scheme. Scheme contributors determine how their money is spent. The results of the Management Committee's survey of growers suggested that three-horned bedstraw was an unknown risk to many growers. This report is the first step and building industry awareness and understanding of the risk of three-horned bedstraw to the Western Australian grains/seed/hay industry.

As we move into 2018/19, I am confident that the Bedstraw Eradication Program will move closer to the ultimate goal of eradicating three-horned bedstraw from the State.



**Jim Sullivan**  
Chairman  
Grains, Seeds and Hay Industry  
Funding Scheme Management Committee  
30 June 2018

# Review

The Grains, Seeds and Hay Industry Management Committee (GSHIMC) believes the current program is delivering the best value for the funding provided and is achieving the project outcomes of containment and eradication.

Approved programs are developed annually for each infested property in consultation with GSHIMC, the Department of Primary Industries and Regional Development (DPIRD) and the landholders detailing management actions, estimated costs and timeframes of the agreed actions.

The two infested properties have now entered the final Release Phase of a nine year eradication program. The program is implemented by DPIRD and includes six consecutive years of winter spray treatments, followed by a three year release protocol and post-eradication monitoring phase. Machinery inspections, quarantining, landholder compliance winter spraying and end of season double-knock herbicide treatments form the key components of the Approved program.

*All program milestones have been met and the program has been delivered under budget.*

## Program milestones

- Both properties are now into the second year (of three) of the “Release Phase” of the Eradication Program.
- Thorough ground searching has been undertaken on both properties and no plants found in the arable areas of the infested paddocks.
- No plants have been found on one property since 2014.
- Cooperation and support by the landholders remains at a high level
- Grain sampling through CBH **Eyefoss™** analysis has greatly enhanced the program surveillance. To date no new infestations have been detected with this technology.

## Program expenditure

The total cost of the 2017/18 Program was \$324 182 (as at 30 June 2018), \$119 668 under the budgeted amount of \$443 850. The significant underspend is attributed to the large contingency built into the budget. This contingency is for additional spraying and operational activities that may be required. In 2017/18 these contingencies were not needed.

Approximately \$269 637 of the expenditure was directed to program support and operational activities such as control treatments, regulation and property surveillance (Table 1).

A further \$54 545 was allocated to Eyefoss™ grain surveillance.

**Table 1** Program expenditure 2017/18

Operational expenditure	
Employee expenses	\$154 310
Vehicles and administration	\$65 686
Eyefoss™ surveillance	\$54 545
Contractors	\$31 204
Chemicals	\$9 958
Travel expenses	\$6 738
Communication	\$644
Other expenses	\$552
Minor equipment	\$545
Total expenditure	\$324 182



## Recent improvements

Continuous improvement remains an important part of the Bedstraw Program's ongoing development and effectiveness.

Significant refinements were made to the delivery of the Program in 2017/18. These included:

- Further germination enhancing and seed destruction techniques through the burning of identified bush blocks
- Clearing and tidying bush edges to improve spraying application by removing overhanging branches and fallen trees.
- Rock pile levelling to remove any potential seed storing sites.
- Inclusion of contingency treatment options to allow for seasonal variations and program needs.



## Compliance

Audit and compliance remain a strong focus of the program with strict quarantine protocols in place and maintained by DPIRD officers on both properties to prevent bedstraw spread outside the existing boundaries. This includes cleanup processes for the movement of vehicles, machinery and equipment in and out of the quarantined areas and restricting stock access. Quarantine release processes were followed with full landholder and contractor cooperation.

Auditing of all treatments and operations occurred to ensure successful herbicide application and coverage over the whole of the required areas as well as ensuring clearing operation requirements were being met.

DPIRD assist the landholders with regulatory and operational facets of the program ensuring both the Approved Program and quarantine requirements are being met.

## Industry Funding Schemes

The Bedstraw Eradication Program continues to operate under the Biosecurity and Agricultural Management Industry Funding Scheme (Grains) Regulations 2010. Responsibility for approving the funding and operations of the program reside with the Grains, Seeds and Hay Industry Management Committee (Grains IMC) initially appointed by the Minister in June 2010.

The Grains IMC met in April 2017 and approved the programs for the control of skeleton weed and the eradication of three-horned bedstraw on behalf of the WA Grains Industry. The Committee recommended a contribution rate on grains, seeds and hay be reduced to 25 cents - (down from 30) - per tonne for grain and 12.5 cents – (down from 15) per tonne for hay. These funds are used to support the Skeleton weed and Bedstraw Programs, with Skeleton weed allocated 90% of the funds collected.

The reduced contribution rate reflects the higher than average amounts collected over the last few years and the willingness of the Committee to respond to this and decrease the burden on landholders, when possible.

All contributions to the scheme are collected by purchasers of grain and hay and are paid into a Grains, Seeds and Hay Industry Funding Scheme, Declared Pest Control and Compensation Account, which is managed by DPIRD in consultation with the Grains Industry Management Committee.

## Research

The program has continued to trial new surveillance techniques to detect bedstraw seed and plants in the field, with a trial recently carried out using the GrainCam mounted to a combine during harvesting operations. Improvements to specifications were made enabling it to operate autonomously as previously it required manual intervention. Ongoing research for improving detection continues.



## Extension and awareness

Neighbouring landholders of the affected property in West Arthur were provided a status report of the bedstraw eradication program and current procedures in place.

WeedWatcher media article was released in mid-2017 alerting grain growers and the general public to bedstraw status, urging people to report and providing identification and reporting tools.



## Planned improvements to the program in 2018/19

A meeting with each landholder and DPIRD staff was held at the end of the 2017 season to review the program and look at what is working well and identify areas for improvement. A meeting with each landholder and DPIRD staff was also held at the beginning of the 2018 season to discuss and finalise the 2018 Approved Program.

Some of the main items discussed were

- Clearing and tidying bush edges and rock heaps was successful in improving spray application in designated locations and the burning of leaf litter in designated bush areas.  
**Continue bush, rock push up and burning operations at identified locations as these assisted the program to manage bedstraw by promoting germination and destroying any potential seed.**
- Erosion issues in the quarantine paddocks were raised. Due to the eradication treatments and restrictions applied to the quarantine paddocks, paddock surfaces are mostly bare of vegetation and are prone to wind and/or water erosion.  
**Incorporate optional light cultivation (scarifying) of arable areas in quarantine paddocks in the Release Phase to help manage potential erosion for the 2018 Approved Programs.**
- The borders of the Bedstraw Quarantine area need to be reviewed.  
**Designated bush and border areas where bedstraw was present in the quarantined paddocks will be delimited to further define the Quarantine area, including defining the area which may require fencing to exclude stock.**
- Review the status of paddocks entering the Release Phase of the Eradication Program.  
**Define and allow previously quarantined areas that are now free of bedstraw to progress through the Release Phase.**
- Ongoing awareness raising of bedstraw as well as the promotion of bedstraw identification and reporting is needed within farmers and the general public.  
**Enhance education and awareness by including bedstraw information with skeleton awareness activities at identified field days and farmer events.**

## Findings – Program results at a glance

Success of the Program is evident with all paddocks on both properties having now entered the Three Year release phase in 2018 with no plant findings in the arable areas. Successful and timely treatments and searches have prevented seed set and is exhausting the seed bank.

Identified bush areas within the release paddocks on the West Arthur property remain under quarantine and now pose the highest risk with new finds still being detected. These new finds appear to be linked to soil movement during recent bush clearing operations with very low plant numbers emerging.

No findings of bedstraw seed were detected during image analysis of seed samples screened with the use of EyeFoss™ technology. This result provides some level of confidence that bedstraw has been contained to the two known properties and has not been identified in the grain growing areas of Western Australia.

### Infested properties

There are currently two properties in Western Australia known to be infested with three-horned bedstraw (*Galium tricornutum*). One property in the West Arthur shire has eight paddocks equating to 280 hectares under quarantine and the second property is in the Merredin shire with one paddock of 48 hectares under quarantine.

West Arthur: In 2017, six of the eight quarantined paddocks progressed to Year One of the Three Year release phase of the eradication program. In 2018, six of the eight quarantined paddocks proceeded to Year Two of the release phase with the remaining two paddocks progressing to Year One of the release phase.

Merredin: In 2017 the quarantined paddock progressed to Year One of the Three Year release phase of the eradication program. In 2018 the paddock proceeded to Year Two of the release phase.

The release phase requires the quarantined areas to be monitored for bedstraw plants. After three 'clean' years the property can be released from quarantine.

### Area searched

Whole of paddock searches were conducted during September by DPIRD search teams on both properties. This included the release paddocks, all bush areas within the quarantine boundaries as well as non-quarantine areas (an estimated 300ha). Continuous monitoring of known hotspots also occurred throughout the season on both properties.

The eradication activities were complemented by a passive surveillance program funded by the GSHIFS in partnership with Cooperative Bulk Handling (CBH) and Bunge. A total of 8 063 grain samples from the 2017 harvest were collected from targeted CBH and Bunge sites and screened using Eyefoss™ screening technology. Eyefoss™ is used by CBH for commercial grading of grain and employed to screen grain for contamination with bedstraw seed.

### Infested area

West Arthur: No bedstraw was found in any arable areas. Seven bush areas (approximately 12ha within the quarantined paddocks) are known to be infested. During the 2017 season, 44 bedstraw plants were found in four of the bush areas.

Merredin: No bedstraw has been detected in 2017. No plants have been detected since 2014.

Of the 8063 samples that were screened, no bedstraw was detected. Continued surveillance is recommended as the risk of bedstraw incursions into Western Australia is ever-present and early detection is the best strategy to quickly eliminate infestations at a minimal cost.

### Control treatments

Timely and successful treatments were applied to all quarantined areas with both properties receiving a double knock treatment at the end of the season, including those paddocks in the release phase. This provides confidence that any undetected bedstraw will not survive. The West Arthur property also received treatment to designated bush blocks, compliance treatment to two of the eight quarantine paddocks and a grass control treatment to the six release paddocks to reduce grass cover to assist in searching for bedstraw.

All operations were audited by DPIRD officers for treatment effectiveness.