

Application Booklet Green on Green



Broadleaf in Lupins

April 2023

Version 1

<https://bilberry.io>

Any questions? hello@bilberry.io

Introduction

*Bilberry has been developing a technology capable of detecting and spot spraying weeds in crops, known as Green on Green, for more than 3 years. **Broadleaf in Lupins** is a great application of our Green on Green market leading technology, showing promising results in minimising crop damage and herbicide expenses whilst maximising profit through sustainable practices.*

This booklet will set out best practice guidelines to ensure users maximise the benefits of the camera system and overall integrated weed management strategies on farm. Included are use cases and testimonials from a range of users, highlighting different approaches to obtain the same goal: sustainably optimising weed control at a whole farm scale.



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1. Application Guidelines

Which weeds does it detect?

Most broadleaves with a diameter > 5 cm, including:

- Rosette shaped (wild radish - *Raphanus raphanistrum*, volunteer canola - *Brassica napa*, capeweed - *Arctotheca calendula*, double gees - *Rumex hypogaeus*)
- Others like mallows - *Malva sp.*, clover - *Trifolium sp.*, etc.



pink overlay = broadleaf
blue overlay = grass weed

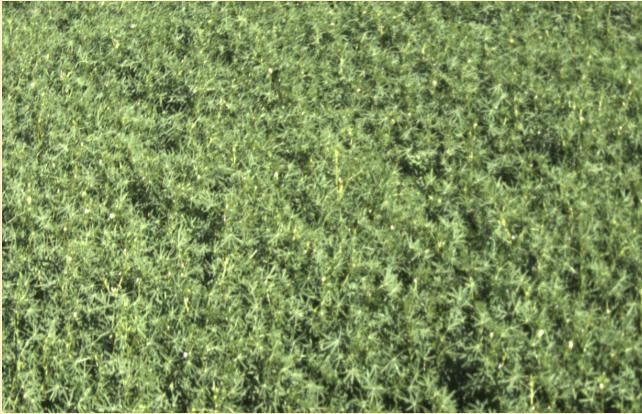
What is the best timing?

Our cameras can detect what you can see when you're sitting on the boom. For best results, we recommend an early application before stem elongation, ideally before crop development obscures the inter-row after canopy closure.



1. Application Guidelines

! After crop canopy closure, only weeds at the same level or above the canopy will be seen and therefore, detected by the cameras.



Is a camera salvage spray possible?

Yes, spot spraying later germinating weeds and escapees at a later stage is a strong use pattern with the cameras. We have seen strong results with salvage spot spraying as long as the weeds are flowering or above the canopy. Salvage application timing can be performed in later crop growth stages, as the algorithm has been developed with the ability to detect weeds out of a senescing crop.



2. System Basics and Benefits

Spray What You Can See

"If you can see the weed with your eyes, the camera will see it." - Broden Holland

Cameras can be affected by high stubble loads, crop shading, and canopy closure. If they cannot see the weeds in question, they cannot spray them, it's as simple as that.



20km/h
recommended
spraying speed

Get Significant Chemical Savings

Average chemical savings are around 80% and can go up to 98% depending on the weed infestation in your paddock and the section size.

Best Light Time

Ideal spraying timing starts 2h after sunrise and stops 2h before sunset, when the natural light is the strongest.

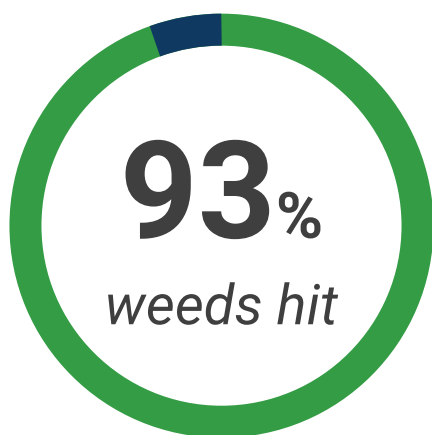
➔ **and many other benefits for your farm**
check them out [here](#)

3. Use Case - Andrew & Rod Messina



Farming Snapshot:

- **Location:** Mullewa, Western Australia
- **Area:** Over 12,000 hectares of dryland cropping
- **Crops:** Wheat, Canola and Lupins
- **Soil:** sandplain soil type
- **Rainfall:** 250-350mm annual rainfall
- **Machine:** Agrifac Condor Endurance 2



The application Broadleaf in Lupin has been used to clean volunteer canola and wild radishes over + 500 ha. Weed density was quite low and the crop still young enough, with open inter-row, which made the spot spraying totally adapted for the situation.

It ended up with an excellent weed control and 94% chemical savings.



4. Application in Action



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Disclaimer

The content and data presented in this document is correct at time of writing and contains some anecdotal information which may not align with the results you experience on your farm. If you are experiencing varied performance with your Bilberry system please bring it to the attention of your local sprayer representative or Bilberry support team member.