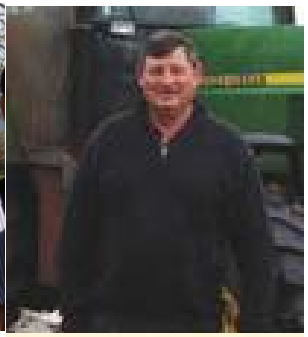
Case Study 2 – The Ranch

Harry & Lochie Rowling, **"The Ranch", Ungarie, New South Wales**

Father and son Harry and Lochie Rowling manage a mixed farming property (3,200ha) with 50% cropping and 50% pasture at Ungarie, in the Riverina region of New South Wales.



The production system

Crops grown are wheat, barley, oats and lupins; pastures are lucerne, clovers and medics, sown into native grasses; and livestock are 1,500 Merino breeding ewes (and lambs) for wool production and 700 crossbred ewes joined to Suffolk rams for prime lamb production. Oat crops and the crop stubbles are grazed, with oats are the only dual-purpose crop grown (grain and grazing). Pastures are set stocked but rotationally grazed when the opportunity arises in wet summers.

Rotations are 4 year cropping and 3 year pastures. The farm is zoned for crops to avoid frost-prone, low lying areas. Wheat varieties (early and late maturating) are selected to avoid frosts. The main varieties are Spitfire and Suntop wheat.

The rotations are planned, using a long-term strategy, aimed at avoiding weed problems (herbicide resistance and hard-to-kill weeds), crop diseases and to maximise nitrogen inputs through key pasture phases.

The soil types are mainly clay (cracking and non-cracking) (2,800ha) with some loam (400ha).

Most surrounding farms have SLN infestations and try to keep it under control with limited resources. The local council contributes by managing the roadside populations.

Silverleaf nightshade

Silverleaf nightshade became obvious on a few properties around the district in the 1960s. It may have been present before that time as an inconsequential weed but became a notable problem after the wet years in the mid to late 1950s.

The first report came from a sheep dip area west of Ungarie and spread to other neighbouring properties next to the Rowling's property. Originally cultivation was used as a control method, but this and grazing livestock have spread it. There was less cropping during that period so it was mainly spread by livestock and native birds and animals. It established easily on the lighter soils but soon was growing across all soil types in the district.

The Rowlings have 2 properties, only one of which has SLN (2,000ha) with mainly scattered, medium density patches. About 150 ha has a dense infestation.

The main impact of SLN is the time and money spent on keeping it under control, especially after harvest when it would be good to have a holiday. They also have non-target impacts in the pasture phase where desirable pasture species are lost.

SLN is the hardest weed the Rowlings have had to deal with, particularly due to its long flowering period and persistence. It's the highest priority and needs to be sprayed after harvest.

Control & Management Strategies

In the cropping phase control of SLN is relatively simple, but it will always come back to some extent in the pasture phase where spraying needs the most time and effort.

During the cropping phase of the rotation the normal summer fallow sprays keep SLN under control. The Rowlings have used a range of herbicides, but it appears that the dose needs to be increased over the years.

In the pasture phase SLN tends to come back in competition with the predominately winter annual pastures, even with use of Starane® herbicide. Use of summer active grass species can help but getting these grasses established in this area can be problematic.

Herbicides

Herbicides that are used include glyphosate, 2,4-D amine and Starane® (sometimes). Tordon® has been tried but it is expensive, and there does not appear to be economic with broadacre spraying.

Dual Action has proven to be beneficial. There is a need to stop flowering first but the follow-up autumn spray is also needed in most years. Spray conditions are often not ideal with hot dry, dusty conditions reducing spray efficacy, but there is no choice at times.

The Rowlings have been using the best management guidelines for 10 years by controlling seed set and running down the root reserves. The aim has been to reduce the numbers to scattered populations that can be spot sprayed. Monitoring by observation for new patches has become part of the Rowlings normal farm operations.

The Rowlings have observed some biological control with caterpillars eating berries and disease-affected plants.

Benefits & Costs

The Rowlings think that SLN has affected property values in the range of $125-250 /ha and it can limit the market of buyers, especially those that don't have SLN.

They have recently lost some valuable rams that were feeding in an infested paddock. Stock losses are rare, but SLN may cause ill-thrift.

Summary of annual SLN related costs

Crop Production Loss (yield losses due to competition)	$38,281
Stock Production Loss (lost carrying capacity)	$110,836
Direct Control Costs (herbicides, labour)	$44,220
Total farm costs of SLN	**$193,337**

Keys to success✓

Harry and Lochie's key messages and advice for managing SLN:

✓ If you have SLN on your property, it should be one of your highest weed priorities

✓ Fence off smaller bad areas to prevent stock grazing and cultivation

✓ Be vigilant, keep up the spray program, and don't ever neglect it, otherwise this weed will beat you.

✓ Adopting a Dual Action approach for 10 years will control seed set and run down the root reserves

✓ It will take 6-7 years to bring the populations down to scattered spots

✓ Support the Dual Action research trials so that the new regional controls can be developed