

# Case Study 17 – Nil Desperandum

Bill Twigg, "Nil Desperandum", Bears Lagoon, Victoria

Bill Twigg has spent his life investing in the profitability of his third generation 2,300 ha property, in Central Victoria. His silverleaf nightshade control program includes a minimum of 3 herbicide applications per year.



## The production system

Bill's grandfather originally bought a 600ha in Central Victoria. It was passed on to his father, who battled through the depression. The family built up the farm size and it was eventually split between Bill and his brother, who both now own 2,300 ha.

Bill is an occasional cropper, growing perennial plants, such as lucerne, at light densities to imitate the native salt bush. This provides him with complete ground cover for most of the year, compared with annual-based pastures. He regards no plant as a weed on the farm so long as his stock eat it. Bill believes his success is due to his beliefs in nature: if he has a problem, he looks to nature for the solution.

Bill runs 5,000 first cross ewes for prime lamb production. Lambing in the spring only, Bill contends that his stocking rate is twice that of anyone else in the district because of lucerne and spring lambing.

While Bill sowed no crop in 2015, he usually grows wheat (for an average yield of 2.5 t/ha) to establish lucerne pasture.

The average annual rainfall in Bill's region is 450 mm. The soil type is typically a red-brown clay loam.

## Silverleaf nightshade

Bill remembers exactly when SLN arrived in the area over 60 years ago, when a drover grazed sheep "down the road". Bill's father immediately considered it a weed and tried to cut it out with a shovel. He didn't succeed and needless to say that SLN spread to their neighbor's farm and beyond.

On his property, Bill estimates that SLN stem numbers range from of 10 to 150 stems over 40 hectares has. This compares to 2005 when he had ineffective control, he observed 150 to 200 SLN stems over the same area 40 hectares. Bill has 2 neighbours who do not control SLN, resulting in paddocks with 80% SLN cover. Another neighbour with high SLN densities chose to continually crop his paddocks and, as a result, seems to have it under control.

Bill believes that seed dispersal is the main risk for SLN spread on his farm. Therefore, although Bill does not believe stock willingly eat SLN, he doesn't allow neighbours with SLN infestations, or farmers with unknown SLN status, to bring sheep onto his property.

## Control & Management Strategies

SLN is his number one weed priority, mainly because it is so hard to detect compared to other weeds, such as horehound and burrs.

Bill is committed to spraying every year because he doesn't want SLN densities to be at a level where it will compete for soil moisture and affect production, the way Bill has observed on neighbouring properties. He also feels obligated to hand on his farm in a healthy state.

Bill sees the first emergence of SLN around October, with new emergence up until April, depending on rainfall. Bill currently spends over 3 months per year of solid work controlling.

## Herbicides

Bill previously used 2,4 –D 15 years ago but now uses glyphosate and Starane®, with a wetter. He has found that while glyphosate may burn plants, it does not kill lucerne.

Bill has applied herbicides a minimum of 3 times per year and has been doing so for more than 10 years. When he was a boy weed control was very slow and was done on foot with a backpack sprayer and was hence much slower. Now he uses a 4-wheel bike sprayer.

Bill also used a non-chemical management option, by sowing lucerne at a high rate to compete with SLN for moisture.

## Benefits & Costs

Bill currently spends around \$1,000 per year on herbicides and thinks that he is applying less herbicide now than he did 10 years ago. He accepts that if he didn't spray for a couple of years, SLN densities would affect the productivity of his farm.

Bill estimates that heavily infested land would be valued at least 50% less than clean land. He believes that farmers who have experience dealing with this weed would not likely want to touch it.

### Summary of annual SLN related costs

Crop Production Loss (yield losses due to competition)	\$7,750
Stock Production Loss* (lost carrying capacity)	\$50,368
Direct Control Costs (herbicides, labour)	\$17,300
Lost Land Value (lost market value appreciation)	\$8,000

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**Total farm costs of SLN \$82,418**

\*Bill does not currently lose any stock production due to his control efforts. However, if SLN was not controlled and became the dominant species, then this figure would be correct.

## Keys to success ✓

Bill's key messages and advice for managing SLN:

- ✓ If Bill inherited a farm that was heavily infested with SLN, he would continually crop it for 10 years to run down the SLN populations
- ✓ Bill thinks that biological control is the only long-term solution for complete SLN control
- ✓ Bill has had much greater success since the introduction of a wetter to his herbicide mix. He previously sprayed without a wetter and often observed that SLN leaves were still half alive after application.

