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Improving feed supply when being challenged by *Hieracium*

A summary of work undertaken by a group of high country farmers considering methods of profitably improving feed supply and utilisation.

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This is a research summary. The original report can be obtained from Allison Brook at Merino Inc. or downloaded from the Merino Inc. web site: www.merinoinc.co.nz

Executive summary

Many high country merino properties still face declining stock carrying capacities due to the effects of *Hieracium*. This study compared four options for arresting this decline on a case study property. The options were:

- do nothing
- extensive oversowing (low cost, large paddocks)
- intensive oversowing (small paddocks)
- extensive oversowing and developing irrigation.

Key findings

- Intensively developing the mid-altitude country was the best option as fencing ensured more efficient use of seed and fertiliser.
- Extensively developing the farm and developing the small available area of irrigation provided the second best result.
- Extensively developing and oversowing in large paddocks was the next best outcome.
- If the farmer's criteria for judging success was cash surplus, (i.e. excluding increased capital value) then only intensive development was better than doing nothing.

Approach

The farm used as a case study was still experiencing a decline in stock carrying capacity due to the effects of *Hieracium*. While it was not possible to quantify the future decline exactly, the Monitoring Group considered the mid-altitude land would decline more than the high mid-altitude land. This assumed decline in SU/ha is shown in Figure 1 and these figures were used for the comparative study.

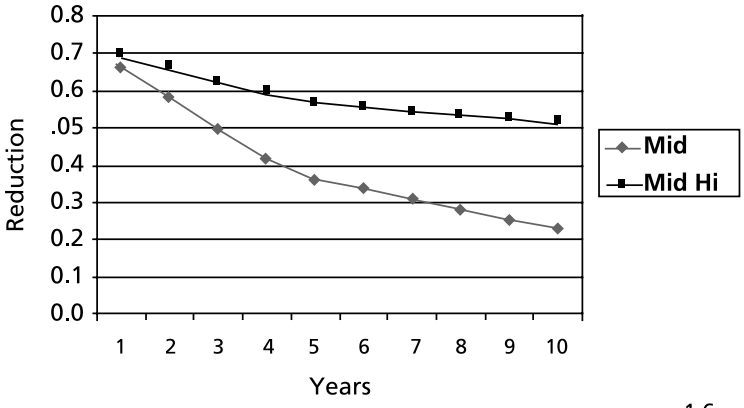

Figure 1. Assumed stocking rate decline.

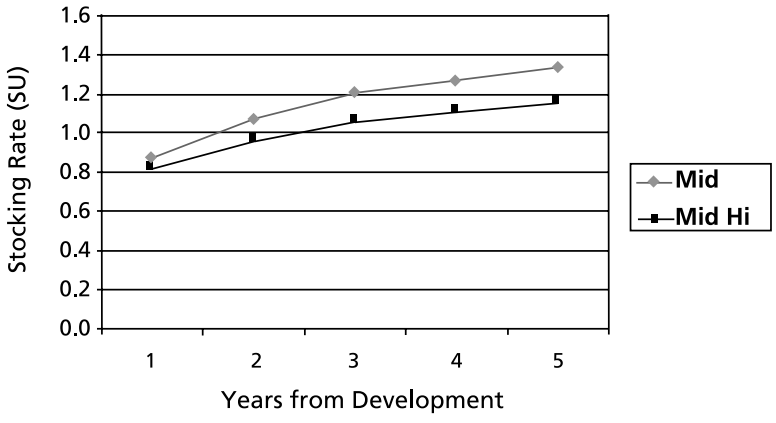

Figure 2. Improvement in stocking rate after development.

Under extensive development we would expect the stocking rate to build up to 1.35 SU/ha on mid-altitude country and 1.2 SU/ha on higher altitude country. With more intensive development of the mid-altitude country we would expect a rise to 2.4 SU/ha. This response to subdivision is easily achieved where land types have a predominance of darker aspects. It is more difficult with an increasing predominance of sunny aspects.

The costs and returns for each option were modelled using a program called RangePack HerdEcon. This enabled us to increase stock numbers as development progressed and apply the costs at the right times while reporting on changes to Net worth (the owners equity) and the accumulated cash surplus.

To calculate Net worth we needed to value the build up of stock carrying capacity for the business. This was included at $300/SU.

Results

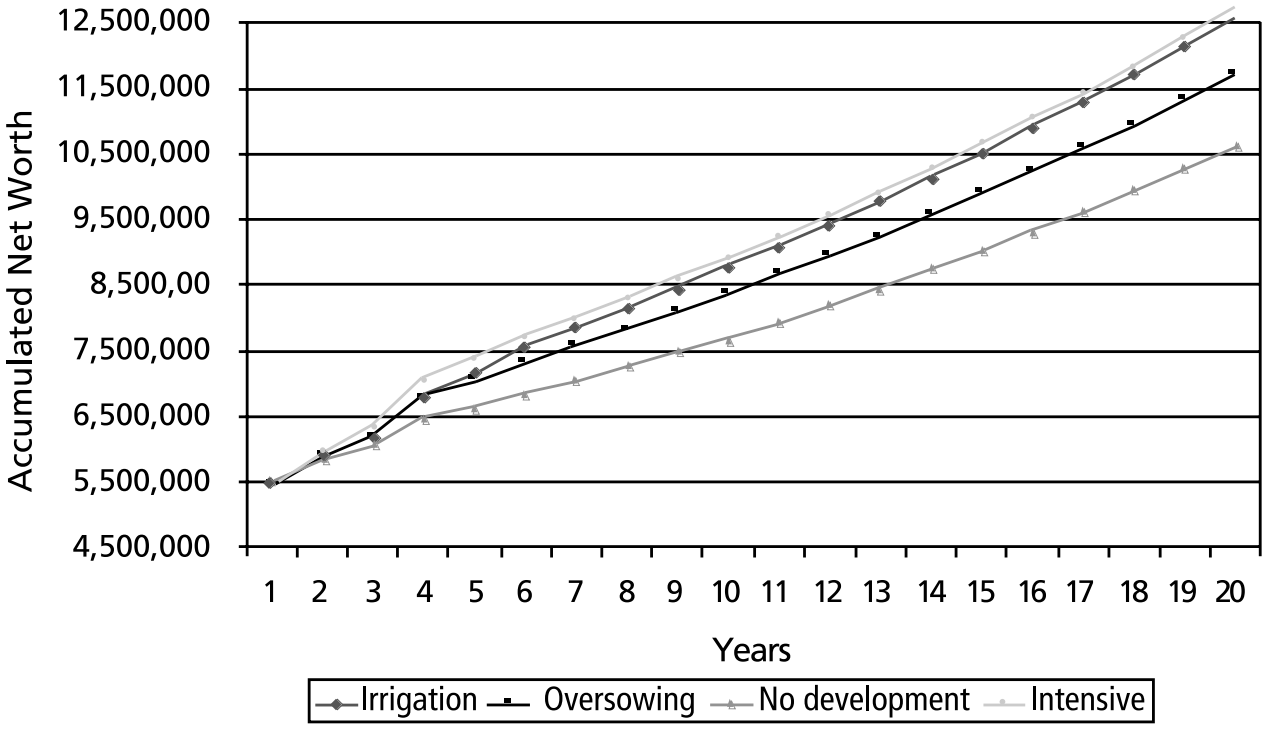

Figure 3. Increase in Net worth.

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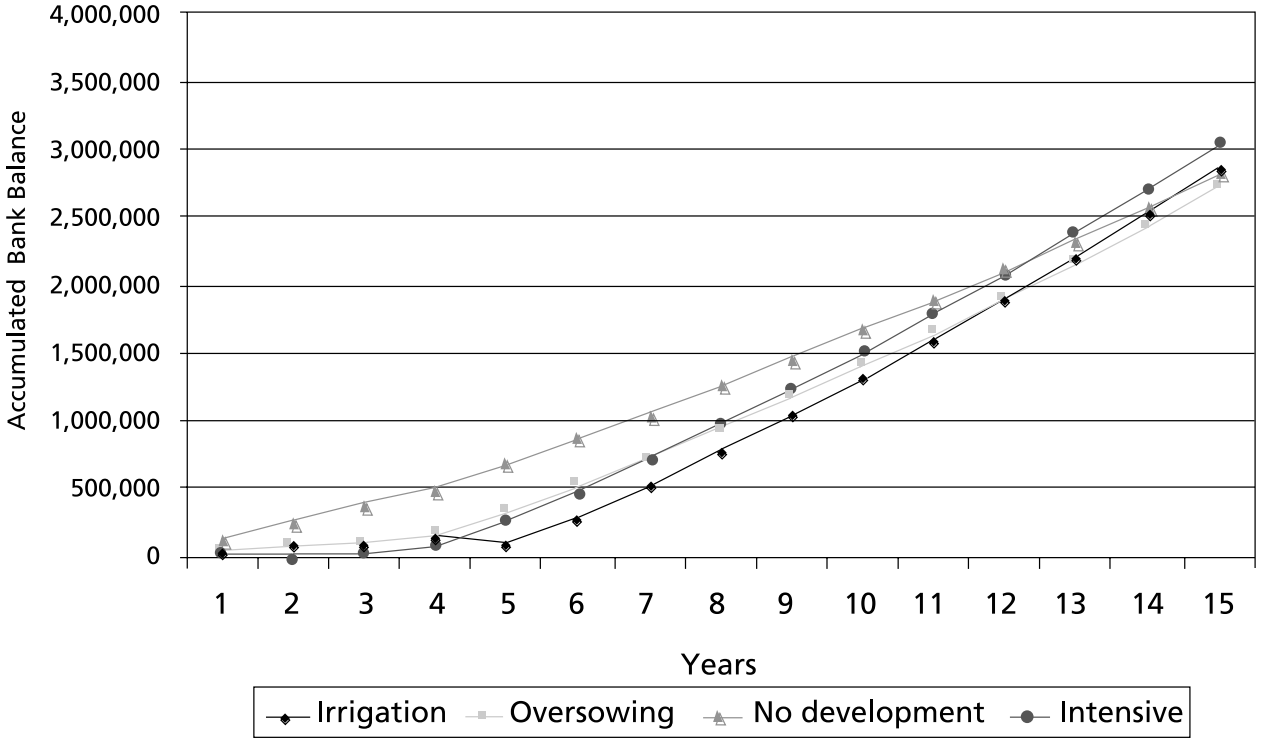

Figure 4. Increase in accumulated cash surplus.

Conclusions

The farmer group felt that *Hieracium* was chipping away at their asset. Many felt that investing in oversowing would arrest the *Hieracium*-induced decline in carrying capacity and improve returns, but others were not convinced.

This analysis suggests both groups were correct. There is a value in all options if we consider the capital value of the business. However, from a purely cash surplus perspective, only intensive oversowing and topdressing will lead to more cash in the bank within 15 years.

Clearly understanding current and potential stock carrying capacities is an important part of achieving an accurate analysis.