

OVERSOWING SLIPS – IS IT WORTH IT?

As we come out of one of more destructive winters we have had in a while, there is lasting reminders in the form of slip scars scattered over the country side. Many people are now wondering how to repair some of this damage. A common option is to oversow the slip scars and debris trails with pasture seed and fertiliser. However, there are two major questions that you need to ask when considering oversowing – Is it worth doing? And is it economic to do it?

So, what are the costs of slips from of an erosion event like the Feb '04? On average, erosion damage ranged between 4.8% - 8.5% over the lower North Island hill country for this event. Of course the severity was dependent on slope, geology, soil type, aspect, and the amount rainfall. If we consider an average 400 ha hill country farm with a representative erosion figure of say 5%, then with 70% of the property consisting of Class VI and VII country, 5% erosion equates to 15 ha of eroded slope. Generally this erosion is only occurring on the harder hill country that is carrying 6 or 7 stock units or less. This winter produced damage similar, if not worse than '04.

So if the average farm is losing 15 ha of potential production every big storm event, why is it not hugely impacting on the bottom line? Currently farms are producing more wool and meat per hectare than our forefathers did. Improved productivity through pasture fertility, intensification of pasture utilisation, enhanced genetic ability and improved management ability etc. all mask the losses of production from subsequent erosion events over the last 50 years. However, as the farm productivity level moves closer towards the potential productivity limit of the property, these storms are going to make themselves felt more in the back pocket.

Research of re-vegetating slips following an erosion event shows the following:

Once the land has slipped, production will only be restored to about 80% of that prior to the land slipping. Due to the loss of topsoil, soil nutrients, and the ability for the soil to hold moisture during the dry summer periods. Depending on the geology, to achieve this 80% production will take between 40 and 80 years, if nothing is done with the slip. Natural fertility will influence this time period.

Erosion events are cumulative.

Best results from over-sowing is when the seed is applied immediately following the erosion occurring.

Soil slips comprise of a scar where the soil is removed down to the parent material and a debris trail. The debris trail holds all of the highly valued topsoil from the scar. Experiences from the 2004 event showed that the ratio of scar to debris trail was about 20:80. Within twelve months this debris trail has generally re-vegetated.

What actual costs are involved in re-establishing pasture on slip scars? Let's look at the cost to re-vegetate our 15 ha of freshly eroded pasture:

Costs	Cost per ha	Total cost
26 kg seed/ha @ \$6.15/kg x 15 ha	\$160	\$2400
1 hour helicopter @ \$1200/hour	\$80	\$1200
150kg/ha DAP @ \$460/tonne x 15 ha	\$70	\$1050
Cartage costs	\$10	\$150
Total costs	\$360	\$4800

If the eroded land is only carrying 6-7 su/ha, that has a gross margin of around \$300 per hectare and a net income of around \$150/ha. If you invest \$360/ha for the oversowing it will take at least 10 years on sites with reasonably high natural fertility to recoup this investment. On lower fertility sites this time frame will be much longer.

What else could be done to with the \$360 per hectare investment required? Spending \$360/ha on fertiliser will buy you 1.3 tonne of superphosphate. Sure you still have to spread it, but applied to the better contoured areas of your property, even at a quarter of the rate, will generate a greater lift in production and much more farm income. Consideration could also be given to spending this \$360/ha on storm proofing the parts of your property have are yet to erode, for example maintaining tracks and storm water successfully. Then you would never have to worry about considering oversowing.

One of the biggest challenges with oversowing is that it needs to be done immediately following the event, before the exposed soil surface has dried out. Often this is at this time soil temperatures are too low for legume germination and subsequent rainfall washes the seed away. Extremes in wetting and drying create a very challenging environment for the plants to establish and thrive in those first few months. Add to this the fact that aerial and hand applications of seed can be time consuming, difficult and costly. Successful over sowing can be a bit hit and miss.

There are other tangible benefits besides production for over-sowing slips. Some of these include removal of that visibly ugly slip, possible prevention of secondary surface erosion, some limited regained production, water quality advantages, and less weed or thistle infestations, just to name a few.

On highly sensitive soft sandstone country that is prone to secondary erosion over-sowing slips maybe imperative but on any other country the smart money says you are better off investing your \$360 somewhere else.