

## FACT SHEET



# HELI-CROPPING IN HILL COUNTRY

**Renewing pasture or growing forage crops in hill country is a daunting task, especially if the land is inaccessible by tractor. However, with appropriate planning and the availability of suitable aircraft, it is possible to turn hill country into far more productive land, using one or more forage crops before regrassing in perennial pasture.**

## Planning

Much of the success of hill country cropping will be determined in the planning phase.

- The selected area needs to be accessible to stock and to the helicopter.
- Soil tests must be conducted and any pH or soil fertility issues addressed by the early application of lime or fertiliser.
- The pasture must be grazed to a residual of 1500 kg DM/ha three weeks before spraying and sowing

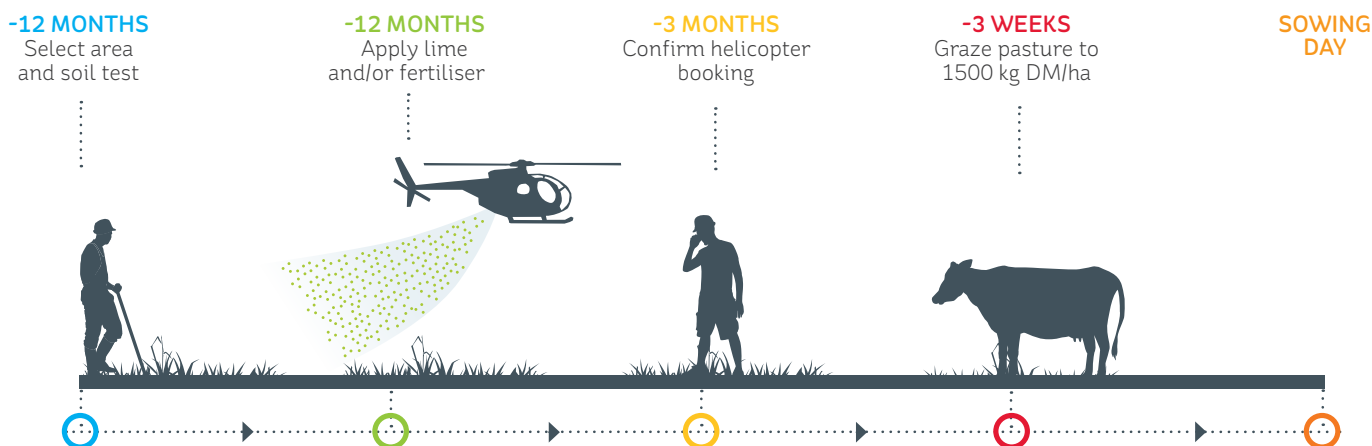
## Sowing

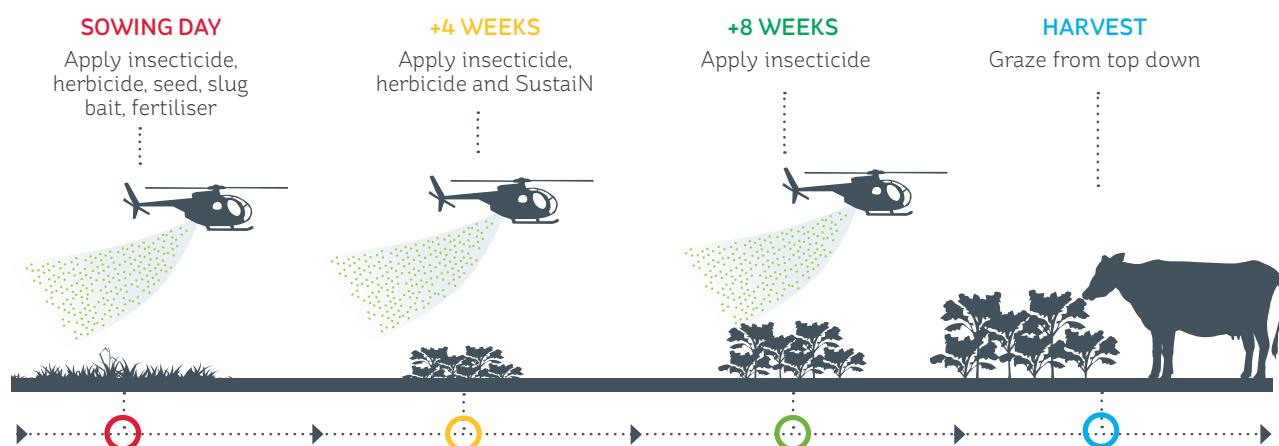
Sowing the crop will involve several passes of the helicopter. Cutting back on any of these will reduce the effectiveness of the cropping programme.

- A herbicide and insecticide are needed to control weeds and pests such as springtails and greasy cutworm. Seek professional advice on the best products and rates to use.
- Seed should be broadcast at twice the normal rate and slug bait at the higher of the recommended rates. Two passes at half rates will give better coverage than one pass at full rate.
- A starter fertiliser should also be applied. If sowing brassicas, Cropzeal Boron Boost (500 kg/ha) is a good choice. For other crops, use DAP.

**FIGURE 1**

Planning and preparation steps prior to sowing a hill country crop by helicopter





**FIGURE 2**

Sowing and post-emergence activities for a hill country crop sown by helicopter

### Post-emergence care

To get the best out of the crop, adequate post-emergence treatment is essential.

- A herbicide and insecticide should be applied 4-5 weeks after sowing to control grasses, broadleaf weeds, diamondback moth and white cabbage butterfly. Seek professional advice on the best products and rates to use.
- Post-emergence nitrogen should also be applied at 4-5 weeks after sowing. Use SustaiN at 200-250 kg/ha.
- Eight weeks after sowing, check to see whether pests have been adequately controlled. If not, apply insecticide again. Plan on using three insecticide sprays in total, although not all may be required.

### Grazing

Grazing management of the crop is important.

- Graze from the top of the slope down towards the base. Use a break fence to control stock movement.
- If heavy rain is expected, remove stock from the crop. This will help prevent damage to the soil. Pugging or erosion will compromise your ability to establish a successful perennial pasture once the crop has been grazed.
- Take care not to overstock the land, especially where the hills are steep. Overstocking will increase the risk of soil damage, which is very difficult to rectify.

### Post-harvest

After grazing, the land may either be planted in perennial pasture or be used to grow a second crop. Any of the following approaches may be considered:

- If climate and aspect are suitable, pasture may be sown in spring.
- Alternatively, fallow the land through summer and sow pasture in autumn.
- Sow kale then regrass in the following spring
- Sow turnips and regrass in autumn.

- Sow chicory and graze for several seasons before regrassing.
- Sow plantain and clover and graze for 2-3 years. This is particularly useful for lamb fattening.

### Economics

While the costs associated with crop establishment on hill country may be higher than on flat land, it is still possible to achieve a good economic return from helicopter-sown crops.

In one example, a 14 ha block was sown in kale at a cost of \$1500/ha. The crop was grazed by cattle for a net weight gain of 110 kg/beast. At a schedule of \$5.60/kg LWT and 50% bone out, this converted to income of \$4,774/ha. Subtracting costs, the net income was \$3,200/ha.

In addition, the fertiliser application lifted the Olsen P of the land, making it suitable for the establishment of clover and ryegrass pasture.

### Keys to success

- Do not skimp on the use of insecticide or herbicides. These are relatively cheap compared to the cost of the helicopter that's applying them. Use a rate from the higher end of the range. You need to be sure of controlling pests so that seedlings can emerge and develop to maturity.
- Slug bait is as important as the seed. Use the high rate to ensure your seedlings survive.
- Similarly, do not underapply starter fertiliser. Use a high rate to ensure that phosphate is near to the seedlings, where it will help ensure good establishment.
- Be aware of soil moisture levels. Dry conditions will result in poor establishment, so sow earlier in spring rather than later. After grazing the crop, consider a summer fallow before sowing perennial pasture in autumn.