**APPLICATION RATES FOR CALIFORNIAN THISTLE CONTROL**

**BOOM APPLICATION**
Apply 2 litres per ha of Tordon PastureBoss to actively growing Californian thistles. Recommended water rates are 200 litres per ha. Ensure thorough coverage.

**KNAPSACK OR BIKE SPRAYER APPLICATION**
Mix 6 mls of Tordon PastureBoss per litre of water for knapsack or bike sprayer applications. Apply as a wetting spray to actively growing Californian thistles.

**CARPET TYPE WEED WIPER**
Dilute 1 part Tordon PastureBoss with 40 parts water (1:40). Ensure the wiper remains saturated while in use. Two passes in opposite directions to actively growing Californian thistle are recommended. Repeat treatments may be required. Use of Boost™ Penetrant at 100ml/100 litres of water will assist coverage.

Always read the product label for more specific information and detailed instructions prior to use of Tordon PastureBoss.

**BENEFITS OF TORDON PASTUREBOSS**

- Highest levels of Californian thistle control
- Flexible application timing
- Translocates (moves in the sap stream) to kill roots away from the sprayed area
- Returns paddocks to full productivity
- Sterilises developing seeds
- Wide range of other pasture weeds controlled
- Ok to apply as a boom spray, spot spray or using a weed wiper

For further information, please do not hesitate to contact your local Dow AgroSciences distributor or freephone 0800 803 939

Boost™, Tordon™ Gold, Versatil™ and Tordon™ PastureBoss™ are trademarks of Dow AgroSciences
Tordon Gold is registered pursuant to the ACVM Act, 1997 No P5660, Versatil No P3311, Tordon PastureBoss No P8205.
**WHAT IS TORDON™ PASTUREBOSS™**

Tordon PastureBoss is a new generation herbicide from Dow AgroSciences which is particularly effective at controlling weeds with large root systems, such as Californian thistle. This weed displays only 10% of its biomass above the ground as thistles, while the remaining 90% is a huge underground root system. Above ground, “calis” have a huge impact on farm productivity, making areas difficult to graze and having a severe impact on grass growth by shading and depleting moisture and nutrients.

Californian thistle is also a major problem on UK farms. Nearly a year after application in 3 trials in the UK, 95% control of Californian thistle was achieved from a single application.

**WHAT IS TORDON™ PASTUREBOSS™**

Tordon PastureBoss is the most effective control for Californian thistle. Thistles (above ground) and roots (below ground) are killed. By accumulating in the growing points, production of further thistles is prevented.

**THE CALIFORNIAN THISTLE**

**CALIFORNIAN THISTLE FACTS**

- A perennial plant which produces thistles from underground growing points every season. Thistles die off as winter approaches. Roots remain in the paddock.
- Main method of spread is root growth. Up to 100m metres of root can be produced from each stem every year to produce a total of up to 4,000km of roots per hectare.
- Extensive patches are normally a single plant.
- Half of the root mass grows in the top 30cm of soil.
- Root chips of 1mm in diameter will grow into new plants that are easily moved by stock or machinery.
- Male & female plants growing closely together are required to produce viable seed.
- Very low numbers of seeds germinate. Viable seed will only grow in bare, undisturbed, non shaded soil.
- Prefers moist light loam soils, grows on pumice or sands with good nutrient levels.
- Thistles above the ground seriously limit pasture production and therefore stock productivity.
- Growing points every few cms along horizontal roots, which may produce a thistle.
- Roots below ground:
  - Vertical root for food storage
  - Horizontal root to invade more ground.

Tordon PastureBoss is the most effective control for Californian thistle. Thistles (above ground) and roots (below ground) are killed. By accumulating in the growing points, production of further thistles is prevented.

**TORDON PASTUREBOSS PROVIDES SUPERIOR CONTROL OF CALIFORNIAN THISTLES**

**TRIAL DATA**

Dow AgroSciences conducted Californian thistle trials in the Te Awamutu area during the 2009/10 season. These trials assessed knockdown, brownout and emergence of new aerial stems (thistles) for 8 months following spraying.

Tordon PastureBoss provided 92% control of Californian thistle from a single application. This was more than 30% greater than Tordon™ Gold, a previous industry standard.

Figure 1 clearly shows the robustness of Tordon PastureBoss where even half the label rate exceeded the thistle control of Tordon Gold applied at full rate.

**EFFECTIVENESS AGAINST CALIFORNIAN THISTLE**

Californian thistles grow well in flat, well drained, fertile sites. Their huge root systems always invade the most productive pasture.

The side to the left of the tape in the image above was treated with herbicide. Note the colour and productivity of the grass. Dead thistles to the right of the treated area demonstrate translocation of the herbicide throughout roots.

Tordon PastureBoss represents a significant improvement in the level of Californian thistle control that can be achieved in pasture.