

CHICORY & SUMMER TURNIPS

TIPS TO REDUCE YOUR
C/KGMS COSTS BY SOWING
A SUMMER CROP.



SHOULD I SOW A SUMMER FORAGE CROP AT THIS PAYOUT?

Traditionally chicory and turnips have been a great tool to help feed cows in summer, as well as providing a break crop to reduce weeds and pests in a pasture renewal programme.

This season they remain equally valuable if used in the correct way, namely to replace a poor growing pasture with high yielding, high ME summer feed. This leaflet looks at the costs and returns you might expect from sowing either *501 Chicory* or *Dynamo* turnips this spring.

WHAT WE'VE COMPARED

We've looked at two different options. The first is simply to keep an under-performing paddock(s) through to autumn, then renew it in early March.



The second option is to sow the same poor performing paddock into chicory or turnips in October, for high ME grazing through summer, followed by new pasture in early March.



GETTING THE BEST RETURNS



Two variables greatly affect the profitability of a spring crop programme:

▶ TIP ①

Grow a high yield

The higher the yield the better the returns. The key here is to do the job well, so in our calculations on pages 7 and 9 we've included costs for good cultivation, fertiliser, weed and pest programmes.

It is possible to grow 15 t DM/ha with either chicory or turnips. We've assumed what we believe are achievable yields in most years: 10.5 t for chicory and 11.5 t for turnips.

▶ TIP ②

Choose under-performing paddocks

Best returns come from identifying and cropping poor producing paddocks, which are still capable of growing a good summer crop.

The pasture growth forgone while the paddock is in summer crop varies; we've assumed 5.4 t DM/ha in this leaflet.

HOW DOES CHICORY STACK UP?

Sowing chicory gives a net return over doing nothing of \$1,052/ha within the 2015/16 season in the table opposite.

Leaving an old pasture in place could return \$1,255/ha, but the extra DM yield, quality and utilisation of the chicory has the potential to produce \$3,307/ha in milksolids (MS), less \$1,000 in costs to grow the crop.

On a DM basis the extra 5.1 t DM/ha grown from the chicory (for \$1,000) costs 20c/kgDM – for high quality 12 ME feed.

▶ TIP ③

Work out the area of chicory you need to get a grazing rotation. As a rule of thumb 2 ha/100 cows gives 2 kgDM/cow/day; 4 ha/100 cows gives 4 kgDM/cow/day.

Suggested returns from a 501 Chicory crop

	Do nothing (keep old pasture)	Typical crop 501 Chicory	Your own crop estimates
Estimated yield (t DM/ha)	5.4	10.5	Box 1
Feed quality (MJ ME/kgDM)	10.8	12	Box 2
Utilisation of grown feed (%)	75	90	Box 3
ME Eaten (MJ ME/ha)	43,740	113,400	Box 4 (Box 1 x Box 2 x Box 3 x 10)
Milk Production¹ (kgMS/ha)	326	859	Box 5 \$ (Box 4 ÷ 132)
Value @ \$3.85/kg MS (\$/ha)	\$1,255	\$3,307	Box 6 \$ (Box 5 x 3.85)
Less cost of crop² (\$/ha)	0	\$1,000	Box 7 \$
Return (\$/ha)	\$1,255	\$2,307	Box 8 \$ (Box 6 - box 7)
Extra return above old pasture (\$/ha)	\$0	\$1,052	Box 9 \$ (Box 8 - \$1255)

¹ ME converted to milksolids for old pasture (lower ME) at 134 MJ ME/kgMS, for chicory at 132 MJ ME/kgMS

² Chicory crop costs of \$1,000/ha based on: Spray out glyphosate (\$100); Cultivate & sow (\$310); Seed (\$210); Weed herbicide (\$80); DAP 150kg/ha at sowing (\$100); Urea 80 kg/ha twice (2 x \$100).

HOW DO TURNIPS STACK UP?

Sowing summer turnips gives a net return over doing nothing of \$968/ha in the 2015/16 season in the table opposite.

Leaving an old pasture in place could return \$1,255/ha, but the extra DM yield, quality and utilisation of the turnip crop has the potential to produce \$3,423/ha in milksolids (MS), less \$1,200 in costs to grow the crop.

On a DM basis the extra 6.1 t DM/ha grown from the turnips (for \$1,200) costs 20c/kgDM – for high quality 12 ME feed.

► TIP ④

Sow turnips in areas with less pest pressure (they aren't as hardy as chicory).

Suggested returns from a *Dynamo* turnip crop

	Do nothing (keep old pasture)	Typical crop <i>Dynamo</i> turnips	Your own crop estimates
Estimated yield (t DM/ha)	5.4	11.5	Box 1
Feed quality (MJ ME/kgDM)	10.8	12	Box 2
Utilisation of grown feed (%)	75	85	Box 3
ME Eaten (MJ ME/ha)	43,740	117,300	Box 4 (Box 1 x Box 2 x Box 3 x 10)
Milk Production¹ (kgMS/ha)	326	889	Box 5 \$ (Box 4 ÷ 132)
Value @ \$3.85/kg MS (\$/ha)	\$1,255	\$3,423	Box 6 \$ (Box 5 x 3.85)
Less cost of crop² (\$/ha)	0	\$1,200	Box 7 \$
Return (\$/ha)	\$1,255	\$2,223	Box 8 \$ (Box 6 - box 7)
Extra return above old pasture (\$/ha)	\$0	\$968/ha	Box 9 \$ (Box 8 - \$1255)

¹ ME converted to milksolids for old pasture (lower ME) at 134 MJ ME/kgMS, for turnips at 132 MJ ME/kgMS

² Turnip crop costs of \$1,200/ha based on: Spray out glyphosate (\$100); Cultivate & sow (\$410); Seed (\$75); Weed sprays (\$165); DAP 150kg/ha & boron at sowing (\$130); Urea 80 kg/ha twice (2 x \$100); Pest spray twice (2 x \$60).

CHICORY REMAINS A MUST FOR SUMMER FEED

Waikato sharemilker Aaron Price is keeping 9 ha of *501 Chicory* in the budget this spring because nothing else can provide the same yield (12-13 t DM/ha) with the same quality (12 MJ ME) over the same duration (5 grazings) for the same price.

“We can’t usually grow a lot of grass here in summer; the alternative would be PKE and chicory is a lot cheaper than buying in supplement.”

Aaron grazes his chicory from late November through to the end of March, applying 25 kg N/ha after each grazing, on top of 50 kg N/ha two weeks after sowing.

His two proven tips for a top crop? “Sow before it gets dry. We spray out at balance date, and cultivate and sow at the start of October. Then do an early spray, regardless of how small the weeds are – 3-4 weeks after sowing, when weeds are at the 4 leaf stage.”

Inadequate weed control is the most common cause of poor chicory yield, he believes, because crop seedlings get shaded out at a critical stage. “We use SeQuence (250 mL/ha), Preside (50 g/ha) and Bonza oil (500 mL/100 L of water).” Aaron’s sowing rate is 8 kg chicory seed/ha.



▶ TIP ⑤

To get a high yielding crop don't cut corners - the last thing you need is a crop failure. Here's how to grow a good 501 Chicory or Dynamo turnip crop.

→ Planning

For best financial returns, choose under-performing paddocks (slow to re-graze, and/or weedy) that still have the potential to provide a high crop yield.

Timing is vital - sow early to establish crops while soil moisture is still available.

Soil test – correct any pH (5.8-6.2 is ideal) or nutrient limitations. Use boron for turnips to avoid brown heart.

→ Seedbed

Selected paddocks should be sprayed out with non-residual herbicide.

The seedbed needs to be firm before sowing, so that your heel sinks in < 5-10 mm. This may mean rolling the paddock several times. This improves depth control of the drill, and speed and uniformity of germination.

→ Sowing

Use treated seed for pest and disease protection (e.g. AGRICOTE).

Sow when soil temperatures are > 12°C and rising, placing seed no deeper than 1 cm.

Roller drills are ideal for sowing chicory and turnip seed. The paddock should typically be rolled again after sowing for good soil to seed contact.

→ Direct-drilling

When spraying out with a non-residual herbicide an insecticide should usually be added to the spray mix.

Take extra care to ensure seed is sown at the right depth. Monitor for slugs, and apply slug bait where necessary.

→ Establishment

Check for weeds from the start, and control these early as they compete strongly with seedlings. Pre-emergent herbicides can be incorporated into the seedbed before sowing.

Pests can cause serious damage to turnips during establishment. Monitor crops closely for the first 14 days after emergence, and then weekly. Seek advice on pest control as necessary.

Chicory should not be grazed before it has reached the 7-leaf stage (usually around 8 weeks after sowing). By this stage the plant has a well-developed taproot which will aid growth and survival through summer and autumn.

Agriseeds Field Team

Northland/Waikato

Richard Doney (Area Manager)

☎ 021 948 154

Email: rjd@agriseeds.co.nz

Will Henson (Agronomist)

☎ 021 222 0432

Email: whenson@agriseeds.co.nz

King Country/Bay of Plenty

Paul Hames (Area Manager)

☎ 021 908 177

Email: phames@agriseeds.co.nz

Jen Corkran (Agronomist)

☎ 021 308 167

Email: jcorkran@agriseeds.co.nz

East Coast North Island

Paul Sharp (Area Manager)

☎ 021 540 673

Email: psharp@agriseeds.co.nz

Taranaki/Manawatu

Bruce Paterson (Area Manager)

☎ 021 495 594

Email: bpaterson@agriseeds.co.nz

Laura Oughton (Agronomist)

☎ 021 637 447

Email: loughton@agriseeds.co.nz

Upper South Island

Craig Weir (Area Manager)

☎ 021 912 280

Email: cweir@agriseeds.co.nz

Matthew Smith (Agronomist)

☎ 021 772 719

Email: msmith@agriseeds.co.nz

Central South Island

Richard Goldie (Area Manager)

☎ 021 313 042

Email: rgoldie@agriseeds.co.nz

Alan Harvey (Agronomist)

☎ 021 256 9951

Email: aharvey@agriseeds.co.nz

Lower South Island

Riley Cooper (Area Manager)

☎ 021 283 1218

Email: rcooper@agriseeds.co.nz

Janet Montgomery (Agronomist)

☎ 021 775 180

Email: jmontgomery@agriseeds.co.nz



Member of the Royal Barenbrug Group

Agriseeds® is a registered trademark of New Zealand Agriseeds Limited.
501 Chicory and Dynamo Turnips Technical Data:
Copyright © 2015 by New Zealand Agriseeds Limited.

Superior pastures
from Agriseeds.

0800 449 955.

www.agriseeds.co.nz