



# Characteristics of 'Choice' chicory and 'Tonic' plantain

To the commonly asked question 'Should I plant chicory or plantain?' there is no right or wrong answer. The answer really depends on why you are considering these species and what you expect of them. In some ways chicory and plantain are similar, but in other ways they are very different. This describes a number of characteristics of Choice chicory and Tonic plantain.

	Choice Chicory	Tonic Plantain
		
<b>Use</b>	Can be grown as part of pasture mix or as a special purpose crop	Can be grown as part of pasture mix or as a special purpose crop
<b>Root system</b>	Deep tap root 	Fibrous, coarse root system 
<b>Drought tolerance<sup>1</sup></b>	Good	Moderate (not as good as chicory or lucerne). Plants may wilt when moisture stressed and growth will be reduced, however plants will recover and respond quickly to moisture (rainfall, irrigation or effluent application) 
<b>Suitable soil types</b>	Can grow on a range of soils but heavy clays and poorly drained soils are not recommended	Can grow on a range of soils but heavy clays and poorly drained soils are not recommended. Adapted to a wider range of soils than chicory.
<b>Average yield from spring sowing to May (specialist crop with or without clover)</b>	10.6 t DM/ha (range 7.6 - 15.2 t DM/ha)	11.0 t DM/ha (range 7.6 - 12.7 t DM/ha)

	Choice Chicory	Tonic Plantain
		
<b>Year 2 (chicory) or Years 2-4 (plantain)</b>	12.0 t DM/ha from September to May (range 9.4 - 17.0 t DM/ha) <sup>2</sup>	15.9 t DM/ha for full 12 months (range 10.7 - 19.0 t DM/ha/year)
<b>Growing period</b>	September to May	All year
<b>Average growth rates during</b>		
Spring	35-70 kg DM/ha/day	40-60 kg DM/ha/day
Summer	60-70 kg DM/ha/day	65-80 kg DM/ha/day
Autumn	20-45 kg DM/ha/day	25-40 kg DM/ha/day
Winter	Semi dormant – do not graze	15-35 kg DM/ha/day
<b>Productive years</b>	1-2 years under dairy cow grazing	2-3 years under dairy cow grazing
<b>Grazing management<sup>3</sup></b>		
Pre-grazing height	25-35 cm (first year crop), 25 cm (second year)	25 cm
Post-grazing height	5-10 cm	5-10 cm
<b>Approximate time to reach 25 cm<sup>4</sup></b>		
Spring	2-4 weeks	3-5 weeks
Summer	2-3 weeks	2-3 weeks
Autumn	3-5 weeks	3-6 weeks
Winter	Semi dormant – do not graze	5 + weeks
<b>Herbage quality</b>		
Crude protein	16-27% DM	16-28% DM
Soluble sugars and starch	10-22% DM	11-17% DM
Fibre	20-28% DM	23-36% DM
Metabolisable energy (ME)	11.5 – 13.0 MJ/kg DM	11.0 – 12.0 MJ/kg DM
<b>Milksolids response to feeding</b>	Similar to plantain. Little response to feeding chicory at 20-40% of the diet when pasture quality >10.5 MJ ME/kg DM, but when pasture quality was poor (9.6 MJ ME/kg DM) milksolids production increased by 17%	Similar to chicory. Little response to feeding plantain at 20-40% of the diet when pasture quality >10.5 MJ ME/kg DM, but when pasture quality was poor (9.6 MJ ME/kg DM) milksolids production increased by 17%

<sup>1</sup>While both chicory and plantain are considered to be drought tolerant, they still require moisture to grow, and under severe drought growth is reduced.

<sup>2</sup>There is not a lot of data on second year chicory crop yields as many crops on dairy farms are not taken through a second season.

<sup>3</sup>These heights refer to the height of the leaves, ignoring the stems.

<sup>4</sup>The time taken to reach 25 cm is based on data from the Waikato; these times may change depending on temperature and soil moisture in your region (i.e. slower growth when temperatures are cool or if there is low soil moisture). It is important to check the height of these crops on your own farm before grazing.