Balance Chicory

*Chicorium intybus*

Balance chicory has been selected for its rapid establishment, perennial nature with excellent winter growth. Balance is a high quality leafy herb with a deep taproot, providing excellent quality feed for high levels of stock production. The plant grows from a low rosette producing broad upright leaves and is best suited to fertile, free draining soils with a pH from 5.5-8. Animals fed chicory perform very well. Balance chicory provides them with a highly digestible feed source with a good protein/energy ratio and a high mineral content resulting in high live weight gains. Balance should be sown in the autumn with soil temps above or around 10°C, or in high rainfall/irrigation it can be sown in the spring. It can be sown in a pasture mix and is very responsive to nitrogen fertilizers.

- Rapid establishment and excellent winter growth
- Quality feed – high stocking rates
- Autumn or spring sowing option
- Useful as a hard grazing option in a rotational system
- Excellent weight gains
- Pasture mix option
Seed agronomy table

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Lifespan</td>
<td>2-3 Years</td>
</tr>
<tr>
<td>Growth</td>
<td>All year round</td>
</tr>
<tr>
<td>Min Rainfall (mm)</td>
<td>500</td>
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<tr>
<td>Hard Seededness</td>
<td>High</td>
</tr>
<tr>
<td>Seeding Rate (kg/Ha)</td>
<td>Dryland 3</td>
</tr>
<tr>
<td></td>
<td>High Rainfall / Irrigation 5</td>
</tr>
</tbody>
</table>

Blends using this Seed

- Bloat Fighter Blend
- Spring Fast Feed Blend
- Summer Feed Blend
- Brassica Blend
- Spring Graze Blend
- Spring Finishing Blend

Enterprises this seed is being used for

- Sheep
- Beef Cattle
- Horse

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Strengths

- Palatable and nutritious.
- Rapid establishment and high first year productivity.
- High animal growth rates.
- Fast regrowth in warmer months.
- Adapted to acid soils.
• Deep root system capable of extracting water and nutrients from depth.
• Not known to cause bloat.
• Persistent under moderate grazing.
• Regenerates readily if allowed to seed.
• Retains leaf better than lucerne in dry conditions.
• More drought tolerant than plantain.

**Limitations**

• Susceptible to trampling and overgrazing.
• Requires high levels of nitrogen for maximum production.
• Does not make good hay.
• Poor growth rates at low temperatures.
• Herbicide options are limited.

**Plant Description**

**Plant:** Broad-leafed perennial with thick, deep taproot, belonging to the daisy family. Prior to flowering, it produces one or more basal rosettes of large, soft, lush leaves with short stalks. On flowering, it develops into a sprawling bush over 1 m high. Plants typically survive for 2 - 3 years, and up to 5 years in higher rainfall areas with careful management.

**Stems:** In late spring, stiff spreading flowering stems emerge from the leafy crown, growing to a height of 1.5m. They are hairy, hollow, branching and sparsely leafed, exuding a milky sap if cut.

**Leaves:** Rosette leaves are 5 - 15 cm long, oblong or lance-shaped, and covered with rough hairs on both the upper and lower surfaces. Leaf margins vary with cultivar. Stem leaves are much smaller.

**Flowers:** Blue daisy flowers 25 - 35 mm across.

**Seeds:** The seeds are about 3mm long, dark brown, wedge-shaped, and 5-angled.

**Pasture type and use**

Chicory is used as a short and medium term forage, and is an alternative to lucerne in areas where soils may be too acidic for lucerne. Valuable for finishing livestock and promoting weight gain. Can be used in dryland or irrigated pastures. Will tolerate some shading, and has been used as a cover crop in vineyards.

**Where it grows**

**Rainfall:** Chicory is adapted to a wide variety of climates, from summer dominant to winter dominant rainfall areas, receiving 400 mm to 800 mm annual rainfall. It requires some summer rain or irrigation over summer to perform best.

**Soils:** It prefers well drained, deep, fertile soils, but will grow on heavier soils providing they
are not prone to waterlogging for extended periods. While it grows best on slightly acid to neutral soils, it is moderately tolerant of acid soils down to a pH(CaCl2) 4.2.

**Temperature:** Moderate to high frost tolerance.

### Establishment

**Companion species:**

**Grasses:** Annual and perennial grasses.

**Legumes:** Lucerne, annual legumes such as subterranean clover or balansa clover.

**Other:** Plantain (in coastal regions).

**Sowing/planting rates as single species:** 4-5 kg/Ha if sown alone. Not normally sown alone, usually combined with a legume.

**Sowing/planting rates in mixtures:** 2-5 kg/Ha chicory with 0.5 kg white clover or 0.5-1kg/Ha red clover as specialist forage in higher rainfall areas 1-2 kg/Ha chicory when combined with lucerne, perennial grasses, or sub clover. When sown with lucerne can reduce the risk of bloat. Should be sown at a depth of no more than 1 cm. (shallower is best).

**Sowing time:** Can be sown in autumn or early spring (in longer growing season districts).

**Inoculation:** Not required Seed is Goldstrike XLR8 treated for insect control.

**Fertiliser:** Requires phosphorus, sulphur and nitrogen. Can also be sensitive to Boron deficiency in limed soils.

### Management

**Maintenance fertiliser:** Annual dressings of superphosphate. Apply nitrogen if no companion legumes sown.

**Grazing/cutting:** Rotational grazing management is the preferred option for persistence. A rotation of 1 week on, 3 weeks off is preferential. Plant height should be maintained between 5 cm and 40 cm. Grazing pressure in summer can be manipulated to promote leaf growth and delay stem elongation and flowering, or to encourage flowering, seed-set and regeneration. Heavy grazing in late autumn and winter can reduce persistence if there is insufficient leaf growth to replenish root carbohydrate reserves. Grazing, slashing or cutting just prior to prolonged rainfall should be avoided as this can result in stem disease and increased plant mortality. Plants are susceptible to damage from trampling and overgrazing, particularly when dormant. Chicory makes good quality silage but does not make good hay as leaves are brittle and break up on drying.

**Ability to spread:** Can regenerate from seed under some circumstances but does not spread widely.

**Weed potential:** It is unlikely to become a weed since plants tend be short lived, it is restricted to moderately fertile soils and is highly palatable and readily grazed.

**Major pests:** Attacked by earth mites and white fringed weevils, although damage is usually not serious. Slugs can cause significant damage and crop failure particularly in direct-drilled germinating crops.
**Major diseases:** Charcoal rot and sclerotinia rot. It is advisable not to sow chicory after sclerotinia susceptible crops, such as pulses, lucerne, canola etc.

**Herbicide susceptibility:** Susceptible to many broadleaf herbicides. Always check label before herbicide use. Best sown into weed free pastures.

**Animal production**

**Feeding value:** Has a good balance between crude protein, energy and minerals resulting in rapid passage through gut and very high feeding value, sometimes the diet may lack sufficient fibre causing scouring. Dry matter digestibility ranges from 66 - 80%, metabolisable energy from 9 - 11 MJ and crude protein from 14 - 24%.

**Palatability:** Highly palatable.

**Production potential:** Very valuable for finishing livestock and promoting weight gain. Capable of producing high growth rates in lambs (290 g/day) and calves (900 g/day). Also useful for flushing ewes to promote ovulation.

**Livestock disorders/toxicity:** Some varieties have high levels of lactucin, which causes milk taint when chicory is fed to dairy cows, particularly where it forms more than 50% of the diet and is grazed too soon before milking. Leaves have been reported as poisonous to pigs and roots poisonous to cattle but these incidents appear to be rare. There are no reports of poisoning under Australian conditions. Does not cause bloat in cattle due its high condensed tannin content.