



Herbage Development Fact Sheet 5 • By Eric Hall and Andrea Hurst

## Coloured brome, cv. **Exceltas**<sup>(b)</sup> (*Bromus coloratus* Steud.)

### Origin

Natural and recurrent phenotypic selection: 3 cycles of natural selection and 3 cycles of recurrent phenotypic selection for seedling and plant vigour, high tiller numbers and uniform flowering. From USDA accession PI 202696, collected Centinella Agricultural Experimental Station, Orsono, Chile, 1952. Selection criteria: vigour, seedling vigour, high tiller density, uniform flowering time and a more prostrate growth habit. Propagation: seed. Breeder: Eric Hall, Tasmanian Institute of Agriculture (TIA), Mt Pleasant Laboratories, Launceston, Tasmania.

### Description

Ploidy: tetraploid. Foliage: fineness medium. Plant type: perennial forage grass, persistence: persistent.

### Major attributes

A high yielding long-lived perennial grass, with excellent late spring/early summer growth. *Exceltas*<sup>(b)</sup> is a legume friendly grass which remains palatable even when seeding. It has produced live weight gains comparable to perennial ryegrass (Table 1). It is tolerant to pasture grubs and has no known anti quality factors. Growth of *Exceltas*<sup>(b)</sup> is not affected by high summer temperatures.

### Seasonal production

*Exceltas*<sup>(b)</sup> is summer active perennial, producing a large bulk of high protein, high energy forage all year round with a high level of digestibility and nutritive value. *Exceltas*<sup>(b)</sup> out yielded all perennial ryegrass cultivars in late spring/early summer in irrigated trials conducted by the Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE) at Elliott Research Station, Tasmania and in dryland trials conducted by the Tasmanian Institute of Agriculture at Cressy Research Station, Tasmania. (Table 2)

### Drought tolerance

Plants in trials have shown they can tolerate moderate levels of moisture stress. Has proved to be more persistent than perennial ryegrass under dryland conditions at Cressy, Tasmania (Table 3).

### Cold tolerance

Moderate. Suffers some leaf damage if frosts greater  $-3^{\circ}$  C.

### Waterlogging tolerance

Moderate.

### Salt tolerance

Low.

### Soil and climate requirements

Adapted for sowing into all well drained soil types of moderate to high fertility, across temperate areas receiving 550+mm average annual rainfall. Particularly well suited to areas with a summer dominant rainfall pattern or where summer irrigation is available.

### Maturity

Similar maturity to Victorian ryegrass. Seed matures by mid/late December.

### Seed size

Thousand seed weight 7.690gms (perennial ryegrass 1.919gms).

### Seed treatment

Clipping the awn may assist handling.

### Sowing methods

Drilled, direct drilled or broadcast.

### Sowing depth

Preferably around 10 mm. No deeper than 20mm.

### Sowing rate

15–25kg/ha, depending on seed bed quality.

### Sowing time

Suited to both autumn and spring sowing.

### Land preparation

Well-cultivated firm seedbed required for best results. For direct drilling or broad-

casting there should be as little vegetation as possible and adequate soil moisture prior to sowing.

### Compatibility with other species

*Exceltas*<sup>(b)</sup> is best suited for sowing as the dominant grass in a mix with legumes that have high seedling vigour. May out compete some slower establishing species.

### Suggested mix

*Exceltas*<sup>(b)</sup> and *Astred*<sup>(b)</sup> or *Rubitas*<sup>(b)</sup> stoloniferous red clover.

### Seedling vigour

Excellent.

### Grazing management

Will tolerate close grazing by sheep, however; best suited to a high input rotational grazing system.

### Dry matter yield

Over 16 t/ha DM/year achieved under irrigation at Elliott Research Station, Tasmania.

### Feed value

High, declining slowly with maturity. Remains palatable as standing hay.

Typical feed test figures:

Crude protein (%DM)	24.8
Digestibility (%digestible DM)	79.8
Metabolizable energy (MJ/kg DM)	11.7

### Anti-quality factors

None known.

### Seed harvest methods

Direct heading. Seed begins to shed even when it appears green. Seed has been successfully harvested green and dried.

### Seed yields

Yields around 1 t/ha are achievable.

<sup>(b)</sup> Variety is protected by Plant Breeders Rights

Table 1. Average lamb live weight gains (kg/28 day grazing cycles) grazing pure swards of a range of grass species

Treatment	October	December
Banquet (tetraploid perennial ryegrass)	10.75	3.29
<b><i>Exceltas</i><sup>(b)</sup> (coloured brome)</b>	<b>10.68</b>	<b>3.10</b>
Flecha (winter active fescue)	8.99	0.73
Porto (cocksfoot)	10.44	1.92
Victoca (diploid perennial ryegrass)	10.57	1.26

Data extracted from the TIA Burlington Road Annual Report May 2011

## Diseases

None recorded.

## Pests

Susceptible to lucerne flea attack as seedlings, but established swards appear resistant.

## Animal performance

A grazing study at Cressy, Tasmania; comparing live weight gains for lambs grazing Exceltas<sup>(b)</sup> vs lambs grazing perennial ryegrass, winter active fescue and cocksfoot (table 1) showed that for the spring and early summer grazing cycles Exceltas<sup>(b)</sup> produced lamb live weight gains comparable to lambs grazing perennial ryegrass.



Table 2. Seasonal herbage production of Exceltas<sup>(b)</sup> vs nine *L. perenne* cultivars, Cressy, Tasmania. (680mm annual average rainfall)

Cultivar	Species*	Late summer	Autumn	Winter	Spring	Early summer	Annual total
Exceltas <sup>(b)</sup>	<i>B. coloratus</i> (H)	983	1126	1818	3136	1420	8483
Banquet II	<i>L. perenne</i> (T)	1282	1905	1258	1995	685	7125
Bealey	<i>L. perenne</i> (T)	1289	1674	1416	2593	1069	8041
Ohau	<i>L. multiflorum</i> . x <i>boucheanum</i> . (T)	1220	1823	1250	2240	569	7102
Arrow	<i>L. perenne</i> (D)	1229	1700	1346	1814	436	6525
Avalon	<i>L. perenne</i> (D)	1069	1470	1344	2115	266	6264
Expo	<i>L. perenne</i> (D)	1170	1522	1361	2594	550	7197
Victoca	<i>L. perenne</i> (D)	1202	1302	1323	3585	535	7947
Wintas	<i>L. perenne</i> (D)	1002	1179	1061	1873	302	5417
Wintas II	<i>L. perenne</i> (D)	834	1456	1300	2340	313	6243
LSD (P=0.05)		ns	380	236	777	289	458

\* (H) Hexaploid, (T) Tetraploid, (D) Diploid. Eric Hall and Andrea Hurst: Seasonal production of coloured brome (*Bromus coloratus* Steud) cv. Exceltas<sup>(b)</sup>, a new high quality perennial temperate pasture grass. Proceedings of 16th Australian Agronomy Conference 2012, 14-18 October 2012, Armidale, NSW.

Table 3. Persistence based on basal frequency (%) of Exceltas<sup>(b)</sup> vs nine *L. perenne* cultivars, Cressy, Tasmania. (680mm annual average rainfall)

Cultivar	Species*	Establishment (plants/m <sup>2</sup> )	2011 frequency (%)	2012 frequency (%)
Exceltas <sup>(b)</sup>	<i>B. coloratus</i> (H)	236	84	75
Banquet II	<i>L. perenne</i> (T)	469	83	52
Bealey	<i>L. perenne</i> (T)	454	86	67
Ohau	<i>L. multiflorum</i> . x <i>boucheanum</i> . (T)	406	83	51
Arrow	<i>L. perenne</i> (D)	464	85	41
Avalon	<i>L. perenne</i> (D)	593	85	43
Expo	<i>L. perenne</i> (D)	512	85	56
Victoca	<i>L. perenne</i> (D)	500	90	66
Wintas	<i>L. perenne</i> (D)	510	85	40
Wintas II	<i>L. perenne</i> (D)	479	89	64
LSD (P=0.05)		82.8	ns	15.6
LSD (P=0.05), Time x Line=12.1				

\* (H) Hexaploid, (T) Tetraploid, (D) Diploid

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