

Blue canary-grass

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Common name

Blue canary-grass

Botanical name

Phalaris coerulescens Desf.

Status

Blue canary-grass is strongly suspected of causing sudden death to horses. It has not yet been assessed for declaration as a noxious weed, however the potential threat to horses and to the equine industry makes it imperative that all infestations are reported to authorities and controlled as soon as possible.

Origin and distribution

Blue canary-grass is a native of Mediterranean Europe where it is usually found along rivers and streams or in damp depressions. It was first identified in pastures in Victoria from a 1988 collection from near Hamilton, 270 km west of Melbourne, where it was associated with native and exotic grasses on disused pasture (Walsh 1994). It has since been identified at Darraweit Guim, 45 km north of Melbourne and at Penola in South Australia. It is not known how blue canary-grass came into Victoria though it is likely that it was accidentally introduced as a contaminant of stock fodder or grain seed.

Description

Blue canary-grass is a short lived perennial grass, surviving 3 to 4 years.



Figure 1(a). Blue canary-grass has spherical tubers that occur above ground (b). Toowoomba canary-grass has elongated tubers that are located underground.



Figure 2. Blue canary-grass. Arrow points to the red veins on the stem just above the tubers.

Blue canary-grass grows up to 150 cm tall, reproduces by seed and looks very similar to the common pasture grass *Phalaris aquatica*, Toowoomba canary-grass.

However, it does possess several distinctive characteristics which are outlined below.

Tubers - Distinctive spherical/bulbous tubers at the base of the stem, generally located above ground (Figs. 1a & 2). The basal 1 cm of stem joining the tubers has distinctive red veins (Fig. 2) and young stems when squeezed produce clear or green sap. In contrast, Toowoomba canary-grass has elongated tubers that occur below ground (Fig. 1b) and young stems produce a distinctive red sap when squeezed.

Leaves - Dark green/bluish green colour, generally standing upright from bulbous tubers (Figs. 3 & 4).

Stems- Numerous, green, to 150 cm high.



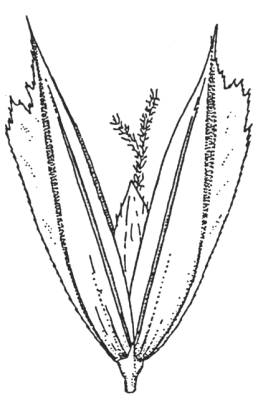
Figure 3. Leaves of blue canary-grass.



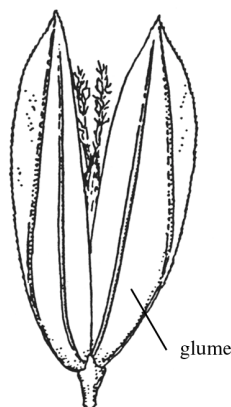
Figure 4. Blue canary-grass

*Figure 5. Blue canary-grass
flower head*

Flowers - Blue canary-grass has a cylindrical flower head (panicle) 3-11 cm long and 1-2 cm wide (Fig. 5). The flowers or seed heads are green with blue or purple coloured tips. In contrast, Toowoomba canary-grass flowers are all green, or with a reddish tip.



*Figure 6. Flower of blue
canary-grass.*



*Figure 7. Flower of Toowoomba
canary-grass.*

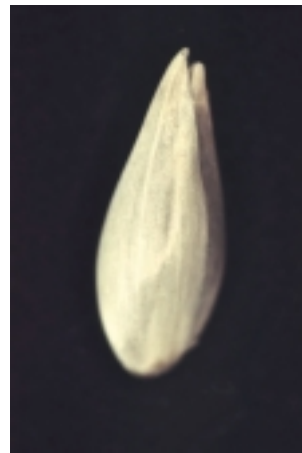
The flower-head is composed of numerous spikelets, each enclosed by two glumes. The wings on the upper outer sides of the glumes of blue canary-grass (Fig. 6) have

distinctive serrated edges, whereas those of Toowoomba canary-grass (Fig. 7) have smooth, rounded edges.

Seeds - Blue canary-grass seeds (Fig. 8) are 2-4 mm long and 0.7-1.4 mm wide. They are hairless (glabrous) and shiny in appearance. Seeds of Toowoomba canary-grass (Fig. 9) are of similar dimensions but hairy (hirsute) and lustreless.

Toxicity to horses

The association between blue canary-grass and horse deaths is only circumstantial. The predominant pasture grass at Darraweit Guim, where several horses have died suddenly, was identified as blue canary-grass. The infestation in this area covers about 50 ha and it is likely that the plant had become naturalised 10 to 20 years before it was identified in 1992.



*Figure 8. Blue canary-grass
seed (photo length is 3mm)*



*Figure 9. Toowoomba canary-
grass seed (photo length is
3.2mm)*

Positively linking deaths with blue canary-grass requires carefully planned feeding trials and cross-seasonal analysis of the grass toxicity. CSIRO investigations have shown that blue-canary grass contains six main alkaloids. Two have been identified in other *Phalaris* species and a third has been found in caltrop, another toxic plant. The two alkaloids known to occur in other *Phalaris* species are not considered likely to be a cause of sudden death in horses. The toxicity of the other alkaloids for horses is not known. Further research is required.

Poisoning characteristics

Horses drop dead suddenly, probably due to acute heart failure, in some cases within hours of appearing healthy. There is no obvious age, sex or breed association. There may be a short period of hyper-excitability before death - most have died unobserved. Deaths have occurred from April to June and in August and October. The shortest period to death after introduction to pasture containing the grass is three weeks. It is unclear whether clinical disease and deaths occur in cattle or sheep grazed in the same paddocks.

References

Baldini, R.M. (1993) The genus *Phalaris* L. (Gramineae) in Italy. *Webbia* 47 (1), 1-53.

Walsh, N.G. (1994) Poaceae. In N.G. Walsh and T.J. Entwisle (Eds.) *Flora of Victoria, Volume 2, Ferns and Allied Plants, Conifers and Monocotyledons*. Melbourne, Inkata Press.

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