Poa annua 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Cyperales	Poaceae

Common name plains bluegrass (English), poa (English), annual poa (English), walkgrass (English), low spear grass (English), annual blue grass (English), dwarf meadow gold (English), annual meadow grass (English), annual spear grass (English), Rispengras (German, Germany), dwarf spear grass (English), annual bluegrass (English), six weeks grass (English), spear grass (English), turin annuel (French), common meadow grass (English), winter grass (English), hierba de punta (Spanish), espiguilla (Spanish)

Synonym *Poa annua* , var. *reptans*

Similar species *Poa pratensis*

Summary Annual bluegrass (*Poa annua*) is an annual grass species native to Eurasia. It has become naturalised around the globe and its introduced range includes Africa, Australia, New Zealand, North America, South America and all major sub-Antarctic islands. It is a problematic weed in natural ecosystems and in golf courses. Its high genetic variability and tolerance of low mowing heights make it a superior competitor.

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Species Description
Annual bluegrass is a tufted grass that grows in dense clumps and has a low, spreading growth form. Erect or bending stems grow up to 30cm in length. Leaves are light green to yellowish green in colour, and are paler and softer than most grass species. Leaf blades are flat and hairless, measuring 1-14cm by 1-5mm and have characteristic canoe-shaped tips. Flowerheads are triangular and whitish green in colour. Spikelets are solitary, oblong, flat, 3-10mm long, with 2-10 florets and unequal glumes. Lemmas are rounded to pointed, 2.5-4mm long, smooth, keeled and hairy at base. Margins of glumes and lemmas are purplish on some plants. Ligules are prominent, rounded and membranous, 0.5-5mm long (GOERP, 2009; Massey University, 2008). Root system is shallow, horizontal and penetrates two to three centimetres below the ground (Frenot *et al*., 1998).\r\n\r\n
Poa annua found on sub-Antarctic islands are frequently found with leaves and inflorescences coloured with a dark reddish-purple pigment (Walton 1975).

Notes
Poa annua is a tetraploid hybrid between *P. infirma*, *P. supine* and another species (Tutin, 1957 in Mitich, 1998).*Poa annua* is a highly variable species. There are hundreds or thousands of biotypes of this grass around the world. Different biotypes have even been found on the same golf course, which types that are best suited for fairways, greens or tees. While *P. annua* is usually classified as an annual species, there are also types that are perennial. *P. annua* var *annua* is a bunch grass that acts as a true winter annual. *P. annua* var *reptans* (Hauskn) Timm., on the other hand acts as a weak perennial and may have stolons, meaning it is not technically a bunch grass. There are many biotypes between these two extremes. Different biotypes respond differently to environmental stresses and to herbicides (Christian, 2006).

Lifecycle Stages
Poa annua is an annual or sometimes perennial grass. In temperate locations it is usually annual, while in the sub-antarctic the plant takes on a perennial habit (Scott & Kirkpatrick, 2005). The annual variety is one of the first grasses to flower. Flowering begins early in spring with maximum seedhead production in May and June (Northern hemisphere) (Mitich, 1998). Seeds germinate in late summer to early autumn. The perennial variety can germinate at almost any time of year, when soil temperatures fall below 20ºC (GOERP, 2009).\r\n\r\n
Establishment of new plants can occur at any time of the year, though it is less likely under dry conditions. This weed is usually an annual, dying once it has set seed. The typical life cycle in New Zealand is to establish in late autumn and to finish seeding and die off in spring once it starts getting too dry. Annual bluegrass may be found in lawns at any time of the year if summer irrigation is sufficient to allow it (Massey University 2008).

Uses
This plant has medium palatability as cattle fodder (USDA, 2002).

Habitat Description
Poa annua is found routinely in gardens, paths and general waste areas. It grows aggressively under conditions of soil compaction and prefers good moisture levels. It prefers good levels of nitrogen and phosphate in the soil and is not adversely affected by most mowing heights (Massey University, 2008). \r\n\r\n
Annual bluegrass colonises disturbed habitats and is not generally found in natural communities. Typical habitats include open forests, streambanks, lawns, gardens, agricultural fields and roadsides (GOERP, 2009). It prefers sites sheltered from wind including depressions, building sites, dumps, earthworks and old caterpillar tracks (Olech, 1996). It may also colonise bare soil on new landslips and sites heavily grazed by rabbits, but it tends to be outcompeted by native species within several years on these sites if disturbance is not continued (Scott & Kirkpatrick, 2005). It may also be found around water, including springs, streams and lagoons and may colonise steep rocky moraines (glacial debris) and gravel flats (Scott & Kirkpatrick, 2005). \r\n
Poa annua tolerates a wide range of severe climatic conditions, making it a potentially invasive species for the Sub-Antarctic region. On one volcanic island in the region annual bluegrass was noted to occur on volcanic ash (ash has a low organic content and is both unstable and porous with a pH of about 6.8) (Longton, 1966). *Poa annua* is also noted to thrive on disturbed well trodden ground, for example, in and around gentoo penguin rookeries in the Falklands (Davies, 1939 in Moore & Sladen, 1966), and at sites of reindeer trampling and elephant seal wallowing (Pratt & Smith, 1982).

Reproduction
Seed heads can form in plants that are six weeks old, and viable seed production can begin a few days after pollination. *Poa annua* is a profilic seed producers. Individual plants can produce 1,050 to 2,250 seeds per plant (Holm *et al*., 1997 in Mitich, 1998). Even plants mowed heights of 0.5cm can produce up to 360 seeds (Beard, 1973 in Mitich, 1998).\r\n\r\n
Seed densities are commonly 200 000 per square metre in infested lawns, which is equivalent to 20 seeds in every square centimetre (Massey University 2008). Seed production can occur even when the plant is mowed as low as 1mm (GOERP, 2009). Seeds can lie dormant and viable for up to six years. (GOERP, 2009).

Nutrition
Annual bluegrass can grow in all soil textures with pH 4.8 – 8.0 (USDA, 2002). It can survive in poorly aerated, compact soils but cannot tolerate acidic soils or those with high pollution levels (GOERP, 2009; Mitich, 1998). It has low nutrient requirements, although grows best in moist areas with high light. It can withstand temperatures as low as 8ºC. It has low drought and fire tolerance (USDA, 2002). It has poor tolerance of extremes of temperature or moisture (Mitich, 1998).

General Impacts
Poa annua is listed as a harmful organism, crop pest and potential seed contaminant (USDA-ARS, 2008). Annual bluegrass is known as a \"pioneer\" introduced species in the Ampere Valley, Kerguelen Island (Sub-Antarctic) in that it colonises moraines (glacial debris) left behind by recently de-glaciated land. However, it is believed to play only a minor role in primary succession (Frenot et al., 1998). In addition is uncertain whether the species acts invasively. Frenot and colleagues (2001) describe the species as naturalised and widely distributed growing in native communities and apparently not inducing strong changes in these communities. Scott & Kirkpatrick (2005) tested whether there is any indication that P. annua might displace native species and found no direct evidence that P. annua displaces other plant species in undisturbed vegetation. P. annua usually requires ongoing biotic disturbance to provide bare ground through trampling, and nutrient enrichment through manuring and (seal) molting, to become a locally dominant component in subantarctic vegetation. An increase in human activities in the sub-Antarctic may increase the spread of this species. The interaction between P. annua and other invasive species may be significant. Reindeer have major impacts on the vegetation of the sub-Antarctic islands and may encourage the dispersal and establishment of the resilient invasive grass P. annua (Frenot et al. 1998).\r\n\r\n\r\n
P. annua is a major weed in golf courses, which are usually composed of creeping bentgrass (*Agrostis stolonifer*) and Kentucky bluegrass (*Poa pratensis*). Annual bluegrass reduces the aesthetics, functionality and quality of these grasses due to its lighter green colour, unsightly seedheads and shallow root system (Hart & McCullough, 2007). It also has poor disease, drought and wear tolerances that create unsightly patches in creeping bentgrass and Kentucky bluegrass. Thus golf courses infested with *P. annua* often require more water, fungicides and management (McCullough & Hart, 2009).

Management Info
Most management strategies for *Poa annua* have been developed in the context of managed turfgrass such as golf courses, rather than in natural ecosystems. \r\n\r\n
Chemical:\r\nHigh genetic variability in *P. annua* means that herbicides may be effective on some varieties, but other varieties are tolerant making complete control challenging. Rimsulfuron (TranXit GTA) may be effective at controlling infestations in Bermudagrass (Cynodon spp.) turf in the Southern United States. Bispyribac-sodium (Velocity) has had some success as a selective control of *P. annua* in bentgrass fairways (Christian, 2006). Ethofumesate (Nortron or Expo 500) can be used to kill annual bluegrass in ryegrass turf. Pendimethalin (Stomp) can be fairly safely applied over most turf to kill annual bluegrass as it germinates. A growth regulator called paclobutrazol is now being marketed in Australia to help with management of annual bluegrass in turf. In gardens, paths and waste areas annual bluegrass is susceptible to most herbicides. Selective grass herbicides such as fluazifop (Fusilade) can give very poor control of this particular grass; haloxyfop (Gallant) is the best to use (Massey University, 2008). \r\n\r\n\r\n
Physical: Manual removal by hand pulling or hoeing can be effective in early spring, but is very labour intensive and only feasible when infestations are small (GOERP, 2009).\r\n
Biological control: The bacteria *Xanthomonas campestris* pv. *poae* and *Pseudomonas putida* have had some successes in managing annual bluegrass infestations. A negative relationship between annual bluegrass and the amount of arbuscular mycorrhizal fungi in soil has been reported, although the opposite trend has been reported for another weed species *Agrostis stolonifera* (Gange *et al*., 1999).\r\n
Cultural: Good cultural practices tend to be the best way of dealing with annual bluegrass on turfs. Techniques to relieve soil compaction and aerate the soil will help desirable species compete well with annual bluegrass. Summer irrigation may assist annual bluegrass. Excess phosphate should be avoided. Dense swards of the desired turf species will stop new seedlings establishing, especially in autumn when germination of new annual bluegrass seedlings will be greatest (Massey University, 2008).

Pathway
The number of tourists visiting the Antarctic Treaty Area is growing every year, and now well exceeds the number of scientists and support staff (Stonehouse 1992, in Chwedorzewska 2008).

Principal source:

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ALIEN RANGE

[4] ANTARCTICA
[1] AUSTRALIA
[1] BRITISH ANTARCTIC TERRITORY (BAT)
[1] FALKLAND ISLANDS (MALVINAS)
[1] HEARD ISLAND AND MCDONALD ISLANDS
[4] SAINT HELENA
[1] SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS
[1] ARGENTINA
[1] BERMUDA
[1] CANADA
[5] FRENCH SOUTHERN TERRITORIES
[2] NEW ZEALAND
[4] SOUTH AFRICA

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Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.
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