CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

Panicum antidotale Retz.: blue panicgrass

Family: Poaceae

Pest Rating: C

Comment Period: CLOSED

Initiating Event:

This species is included on the CCR 4500 noxious weed list and is undergoing a periodic reevaluation of its status through the pest rating proposal process.

History & Status:

Background: Blue panicgrass, *Panicum antidotale*, is a robust rhizomatous perennial grass that can grow up to 3 meters in height (Freckmann and Lelong, 2003). The rhizomes are knotted in appearance and approximately 1 cm thick and bear large scalelike leaves. The above ground shoots are hardened and become almost woody at maturity, with the nodes conspicuously swollen and the internodes glabrous and glaucous, giving the plant a bluish appearance. The leaf blades are approximately 10-60 cm long and 3-20 mm wide with prominent white midveins. The much branched panicle inflorescence is 10-45 cm long and bears many small spikelets, which are approximately 2.4 to 3.4 mm in length and ovate in shape. The fertile lemma of the spikelet is smooth and shiny, narrowly pointed, and similar to the spikelet in length. The species was introduced into the southwestern United States as a forage crop and is currently listed as an agricultural crop species in California (CCR3899, schedule I).

Worldwide Distribution: Blue panicgrass is native to the Indian subcontinent and parts of Afghanistan, Iran and Yemen, and has become naturalized in areas of Australia, Brazil, northern Argentina, Hawaii and the southern United States (Freckmann and Lelong, 2003; USDA NPGS GRIN database; USDA PLANTS database).

Official Control: The species is listed on the CCR 4500 List of noxious weeds by California, where it is a B-rated weed and restricted noxious weed seed. It is not under official control elsewhere in the United States, although it has been reported as invasive in Organ Pipe National Monument in southern Arizona (Invasive Plant Atlas).

California Distribution: Blue panicgrass has been documented from a limited number of arid localities in southeastern California in Imperial, Riverside, San Bernardino, and southern Inyo counties (Consortium of California Herbaria; USDA PLANTS database). A small stand of the species has also been reported from Sonoma County (Calflora) and should be studied further.

California Interceptions: Blue panicgrass has been collected as a field weed in Imperial County but has not been intercepted at the border (CDFA PDR database).

The risk blue panicgrass would pose to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** 1) Climate/Host Interaction: Most of the geographic range occupied by blue panicgrass has a warm climate with summer rainfall. It grows best in areas with summer moisture and well-drained soils (DiTomaso and Healy, 2007) and thus appears poorly suited to the Mediterranean climate zone of California. Therefore, blue panicgrass receives a **Medium (2)** in this category.

   Evaluate if the pest would have suitable hosts and climate to establish in California.

   Score: **2**

   - Low (1) Not likely to establish in California; or likely to establish in very limited areas.
   - **Medium (2) may be able to establish in a larger but limited part of California.**
   - High (3) likely to establish a widespread distribution in California.

2) **Known Pest Host Range:** Risk is **High (3)** as blue panicgrass does not require any one host, but grows wherever ecological conditions are favorable.

   Evaluate the host range of the pest.

   Score: 3

   - Low (1) has a very limited host range.
   - Medium (2) has a moderate host range.
   - **High (3) has a wide host range.**

3) **Pest Dispersal Potential:** Seeds of blue panicgrass are primarily dispersed locally in the area of the parent plant, but seeds may be dispersed by movement of soil or as a contaminant in hay (DiTomaso and Healy, 2007). Rhizomes could facilitate local spread but do not appear to be a significant factor in broader movements of the species. Longer distance dispersal and introduction appears most likely to occur by vehicular movement or shipment of plant specimens for forage use, but movement of the plants in California over the last seventy years appears to have been quite limited. Therefore, blue panicgrass receives a **Low (1)** in this category.

Evaluate the natural and artificial dispersal potential of the pest.

Score: 1

- Low (1) does not have high reproductive or dispersal potential.

- Medium (2) has either high reproductive or dispersal potential.
- High (3) has both high reproduction and dispersal potential.

4) **Economic Impact:** Blue panicgrass has economic benefits as a forage crop, and is reported by Di Tomaso and Healy (2007) to be a highly nutritious forage and pasture grass under cultivation in Arizona and Texas. It is a highly competitive and robust plant under favorable conditions, but its documented spread within California since it was first found in 1952 has been quite limited and it is described as uncommon in California by DiTomaso and Healy. Blue panicgrass receives a **Low (1)** in this category.

Evaluate the economic impact of the pest to California using the criteria below.

Economic Impact: A

A. The pest could lower crop yield.
B. The pest could lower crop value (includes increasing crop production costs).
C. The pest could trigger the loss of markets (includes quarantines).
D. The pest could negatively change normal cultural practices.
E. The pest can vector, or is vectored, by another pestiferous organism.
F. The organism is injurious or poisonous to agriculturally important animals.
G. The organism can interfere with the delivery or supply of water for agricultural uses.

Economic Impact Score: **1**

- Low (1) causes 0 or 1 of these impacts.

- Medium (2) causes 2 of these impacts.
- High (3) causes 3 or more of these impacts.

5) **Environmental Impact:** Blue panicgrass can be invasive in farmers fields and irrigated pastures and in open or disturbed habitats, but since initial collection as an adventive plant in 1952 has spread to only a limited portion of southeastern California. Therefore, it receives a **Medium (2)** in this category.

Environmental Impact:

A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.
B. The pest could directly affect threatened or endangered species.
C. The pest could impact threatened or endangered species by disrupting critical habitats.
D. The pest could trigger additional official or private treatment programs.
E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.

Environmental Impact Score:
- Low (1) causes none of the above to occur.
- Medium (2) causes one of the above to occur.
- High (3) causes two or more of the above to occur.

Consequences of Introduction to California for blue panicgrass*:* Medium (9)

Add up the total score and include it here.
-Low = 5-8 points
-Medium = 9-12 points
-High = 13-15 points

6) **Post Entry Distribution and Survey Information**: This plant has a localized distribution in limited parts of two contiguous suitable climate/regions in California. It receives a score of **Medium (-2)** in this category.

Score: -2
-Not established (0) Pest never detected in California or known only from incursions.
-Low (-1) Pest has a localized distribution in California or is established in one suitable climate/host area (region).
-Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.
-High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

7) **The final score is** the consequences of introduction score minus the post entry distribution and survey information score:

Final Score: *Score of Consequences of Introduction – Score of Post Entry Distribution and Survey Information* ***= Low (7)***

Uncertainty:

It is unclear to what degree this species is currently being utilized as a forage or pasture grass in California, which could lead to local establishment in some additional areas.

Conclusion and Rating Justification:

Blue panicgrass has benefits to California as a forage plant for livestock under controlled conditions. It has the potential to establish as a weed in additional areas of agricultural or open land, but the actual

spread of the species from cultivation in California appears to be quite limited over the last seventy years. Thus a rating of "C" is justified.

References:

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Responsible Party:

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***Comment Period: CLOSED**

***NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at plant.health[@]cdfa.ca.gov.

Comment Format:

- Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

  Example Comment:

  Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to "Climate/Host Interaction" here.]

- Posted comments will not be able to be viewed immediately.

- Comments may not be posted if they:

  Contain inappropriate language which is not germane to the pest rating proposal;

  Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;

  Violates agency regulations prohibiting sexual harassment or other forms of discrimination;

  Violates agency regulations prohibiting workplace violence, including threats.

- Comments may be edited prior to posting to ensure they are entirely germane.
- Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

Pest Rating: C