Last Updated 30-04-2011

Japanese Brome *(Bromus japonicus)*

aka Japanese chess, Japanese bromegrass

Provincial Designation: Noxious

PHOTO: Max Licher, ASU Vascular Plant Herbarium

Overview:

Japanese brome is a cool season annual grass that is native to Pakistan, central Europe, and east to Japan.[1] It reproduces by seed only and can germinate over a wide range of temperatures, but it does requires moisture to germinate - a litter layer aids this.[3] Late season seeds require a period of after-ripening and therefore most seedlings are from the previous year's crop.[3] Fall seedlings overwinter in a 'rosette' type stage and resume growth in the early spring. Spring germinated seedlings can be killed by a late frost in northern latitudes.[3] It fruits and dies in the summer. All parts of the plant remain green while alive and then turns tan upon curing.

Japanese brome competes with natives perennials for resources and its presence on reclamation sites can slow succession toward desirable perennials.[3]

Habitat:

Japanese brome grows in sandy and clay textured soils but is intolerant of alkaline oils. It prefers a mesic moisture regime. Sites with a good litter cover promote growth as it holds moisture.[3]

Identification:

Stems: Stems can be erect or spreading and grow up to 90 cm tall.[1] Stems are bent at base and the nodes are swollen and brownish.[2]

Leaves: Blades are up to 20cm long, .25 to .5 cm wide, usually densely hairy with a prominent midrib, and lax & spreading.[1] The sheaths are densely velvety pubescent,[2] Ligules are about 1.5 mm long, membranous and hairy with ragged edges.[4]

Flowers: Inflorescences have long branches and pedicels, are usually drooping to one side when mature, and each branch bears 1-5 spikelets at the tip.[2] Spikelets are oval to lance-oval shaped, and are 12 to 30 mm long the excluding awns. Awns are 8-10 mm long and straight to bent/twisted at maturity.[2]

Prevention:

Most seeds fall near the parent plant, but can be spread as a contaminant of grain, hay, straw and soil, or seed caching by rodents. Japanese brome invades disturbed and undisturbed sites.

Control:

Grazing: Japanese brome can be grazed fall and early spring, but rapidly loses palatability. Production is good in wet years and bad in dry.[3] *Invasive plants should never be considered as forage.*

Cultivation: A healthy perennial plant community should be fairly resistant to Japanese brome invasion. Maintain a desirable plant community and remediate disturbance areas prone to brome invasion.

Mechanical: Disking followed by a second disking or herbicide treatment after the germination period reduced Japanese brome on the Texas Southern Great Plains.[3] Fire tends to reduce Japanese brome populations but the reduction usually lasts for only 1 or 2 years. Some seed is killed by fire, but seed bank reserves, reproductive capacity, and competitive ability of Japanese brome are usually sufficient to allow for repopulation of an area within 2 years unless the site is reburned.[3]

Chemical:[5] Imazamox imidazolinone alone or with 2,4-D, Florasulam/ MCPA, Thiencarbazone-Methyl, Fluroxypyr, and Bromoxynil are registered for use in Canada on Japanese brome. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pesticide Management Regulatory Agency. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: No biological control agents are currently available.

REFERENCES

1 Flora of Pakistan. www.eFloras.org

2 www.kswildflower.org/grass_details.php?grassID=47

3 USFS Fire Effects Information System

4 Tannas, K. 2003. Common Plants of the Western Rangelands. Volume 1, Grasses and Grass-like Species. Published by AAFRD.

5 Always follow the product labels. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act and Alberta's Environmental Protection and Enhancement Act.*

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Japanese Brome *(continued)*

PHOTOS: Andrea Moro, luirig.altervista.org

PHOTO: Missouri State University

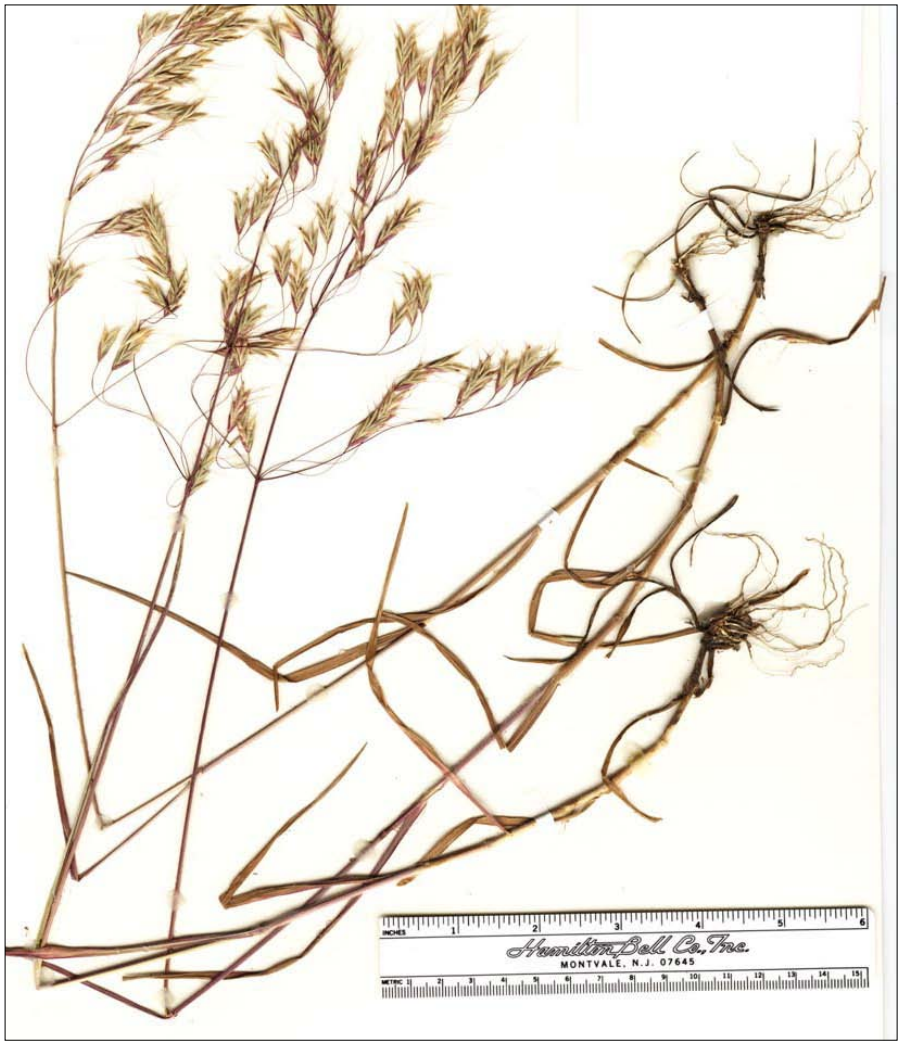

PHOTO: Arizona State University Herbarium