Canadian Weed Seeds Order 2016 and Idseed.ca

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A Teaching and Training Webinar
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Outline

• Canadian *Weed Seeds Order* – 2016
  – Background
  – Highlights
  – Opportunity for Questions

• Idseed.ca
  – Background
  – How to use it
  – Opportunity for Questions
**Weed Seeds Order, 2016**

- *Weed Seeds Order* (WSO) is a ministerial order made pursuant to the *Seeds Act*.
- Plays a critical role in preventing the introduction of new weed species into Canada.
- WSO is the tool used to identify and categorize weed species for the purposes of the import, sale and grading of seed.
- Newly updated WSO, 2016 came into force November 1\(^{st}\) 2016.
Weed Seeds Order, 2016

• Overview of amendments
  – Addition of new species of concern
  – Reclassification of species
    • to reflect current information and distribution
  – Class 2 Primary Noxious weed seeds applies to all Grade Tables of Schedule I to the Seeds Regulations
  – Removal of species considered crop kinds
Class 1 Prohibited Noxious weed seeds

- Eight species on WSO, 2005 will remain in Class 1
- Seventeen (17) species have been added to Class 1 on WSO, 2016
  - For example, Kudzu, Medusahead rye
- Eleven (11) species from Class 1 WSO, 2005 have been reclassified to Class 2
  - For example, Leafy spurge, Johnson grass
Class 2 Primary Noxious weed seeds

- Eleven (11) species were added to Class 2

- *Linaria* spp. was replaced by *Linaria dalmatica*, *L. genistiiifolia*, *L. repens* and *L. vulgaris*

- Seven (7) species were reclassified to Class 3

Canada thistle
Classes 3 to 5 – Secondary Noxious and Noxious weed seeds

- Seven (7) species were added to Class 3
  - For example, four Bromus species were added

- Class 5 now includes all of the species in Class 2 as well as the list of Class 5 species

Prunella vulgaris
Considerations for species changes and additions

- Stakeholder proposed changes and comments
- Pest Risk Assessment of species
  - Risk assessment includes considerations such as climate, biological information, etc..
- Herbicide resistance
- Foreign country weed lists
WSO Questions?

• *Weed Seeds Order*, 2016 information and identification tools can be found at [www.inspection.gc.ca](http://www.inspection.gc.ca)

• Questions can be directed to [SeedSemence@inspection.gc.ca](mailto:SeedSemence@inspection.gc.ca) at anytime
Seed Identification Guide

Research Team:
- Ruojing Wang
- Jennifer Neudorf
- Angela Salzl
- Jo Jones
- Taylor Kosokowsky
- Susan Putz

CFIA Internal Collaborators:
- Plant and Biotechnology Risk Assessment Unit
- Seed Section

International Collaborators:
Quad’s (Quadrilateral Scientific Collaboration in Plant Biosecurity) Digital Identification Tools (DIT) Project

USA: Dr. Terrence Walters, Debbie Meyer
Australia: Matt Taylor
Lucid tool development and application

- Many Lucid tools have been developed as identification guides or screening aids to pests, (e.g., insects, diseases, weeds), commodities or taxon...

- CFIA Lucid tool is part a QUAD project to develop Digital Identification Tools
Developer Tool Box

Software
- Lucid (Builder and/or Player)
- Fact Sheet Fusion
- Lucid Phoenix
- Web design tool HTML

Imaging system
- 2-D or 3-D imaging
- Microscope

Verified specimens
- Select representative specimens
Builder's Flow Chart

Develop:
- matrix structure (e.g., trees, dependencies, number of matrices, etc.)
- features and states
- feature/state meanings (sketches, consensus)

Matrix

Write feature/state explanatory notes
Determine fact sheet content (categories)
Gather, write taxon fact sheet content

Html content

Key component check (see below)

Create other page content (e.g., home page, introduction, how to use key, background information, glossary, fact sheet index, etc.)

Images

Illustrate features / states (drawings, photographs)
Illustrate taxa (photographs, drawings)

Html/site design

Determine structure and format of site
Design Html page format, templates, for site components
Compile Html pages

At periodic intervals:
Submit: sample matrix, feature/state notes, images, and illustrations; and taxon fact sheets, illustrations, and images to ITP for approval

Assemble site components
Attach media to matrix
Complete beta version, upload to secured site or burn to CDs

Beta Review – contact ITP Editor, see beta review process flow chart

Finalize tool based on reviews
Upload to Internet
Release announcement produced

Credited to USDA, Terrence Walters
Design Lucid keys

Construct Lucid key matrix

<table>
<thead>
<tr>
<th>Entity</th>
<th>Agaricus</th>
<th>Agrocybe</th>
<th>Armillaria minor</th>
<th>Astrolepisma</th>
<th>Astrolepismatales</th>
<th>Bolbitius</th>
<th>Camarophyllus</th>
<th>Carnivaria</th>
<th>Castanarius</th>
<th>Chamaephyllum</th>
<th>Chlorophyllum</th>
<th>Chlorophyllum eumalicum</th>
<th>Coccobyphus</th>
<th>C. coleoides</th>
<th>Collybia</th>
<th>Conocybe cubensis</th>
<th>Conocybe luteoalba</th>
<th>C. oshaughnessyi</th>
<th>Cogonaria clypeata</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID features</td>
<td>Spore Print</td>
<td>Pileus</td>
<td>Diameter (mm)</td>
<td>Overall shape</td>
<td>Cylindrical to paraboloid</td>
<td>Rounded</td>
<td>Conical</td>
<td>Plane</td>
<td>Infundibuliform</td>
<td>Centre shape</td>
<td>Colour</td>
<td>Concentric zonation</td>
<td>absent</td>
<td>present</td>
<td>Surface viscosity</td>
<td>Surface cracks, pits or wrinkle</td>
<td>Surface hairs or scales</td>
<td>Hygrophyll</td>
<td>Hygrophyllum</td>
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Developing ID Feature Illustration

• ID feature illustration:
  – Imaging: ID features
  – Drawing: ID features, glossaries
  – Video: pest behavior

Matricaria matricarioides

Triticum aestivum

x Triticosecale sp.

drawings by: Ken Allison;
photos by: Jo Jones
Multi-zooming image technology

- **Equipment**

  A microscope and specialised camera on an automatically controlled mechanised platform.

  A digital camera fitted with a long magnifying lens tube on a remote controlled mechanical platform.

  Each system is controlled by its software.

  Final editing is completed using Adobe Photoshop.

- **Equipment**

  A microscope and specialised camera on an automatically controlled mechanised microscope.
Multi-zooming image generation

Generating an image from 16 individual slices for a large seed
Image animation

Asclepias syriaca

Amaranthus rudis

Calepina irregularis
Fact sheets development

**Abutilon theophrasti**

**Family**
Malvaceae

**Common Name**
Velvetleaf

**Regulation**
Primary Noxious, Class 2 in the Canadian Weed Seeds Order (2016) under the Seeds Act.

**Distribution**
Canadian: Occurs in all provinces except NL, NT, NU and YT (Brouillet et al. 2010a, CFIA and NRCan/CFS 2011). Prevalent in southern ON and QC (Warwick and Black 1968).

Worldwide: Native to Asia (India or China) and introduced to Europe, northern Africa and North America (CABI 2016).

**Duration of Life Cycle**
Annual

**Seed/Fruit Type**
Seed

**Seed Identification Features**
Length: 3.0 - 3.6 mm

**Similar Species**

- Flower-of-an-hour (*Hibiscus trionum*)

- Identification feature description
- Image illustration
Idseed.ca demo

http://www.idseed.ca/

- User Name: idseed
- Password: seed

Currently it is a trial version
Idseed.ca Questions?

- [http://www.idseed.ca/](http://www.idseed.ca/) has a contact page. Feedback and questions can be sent via the “SEND US YOUR Message” function.

- Feedback and questions can also be directed to [SSTS@inspection.gc.ca](mailto:SSTS@inspection.gc.ca) at anytime.
This concludes the Teaching and Training Webinar. Thank you for your attendance.