



Canadian Food
Inspection Agency

Agence canadienne
d'inspection des aliments

Virtual Seed ID Referee 2018

Linaria spp. and *Solanum* spp.

Workshop for CSAAC

May 30th 2018

Seed Science and Technology Section
CFIA Saskatoon Laboratory



Canada

Species in the 2018 referee

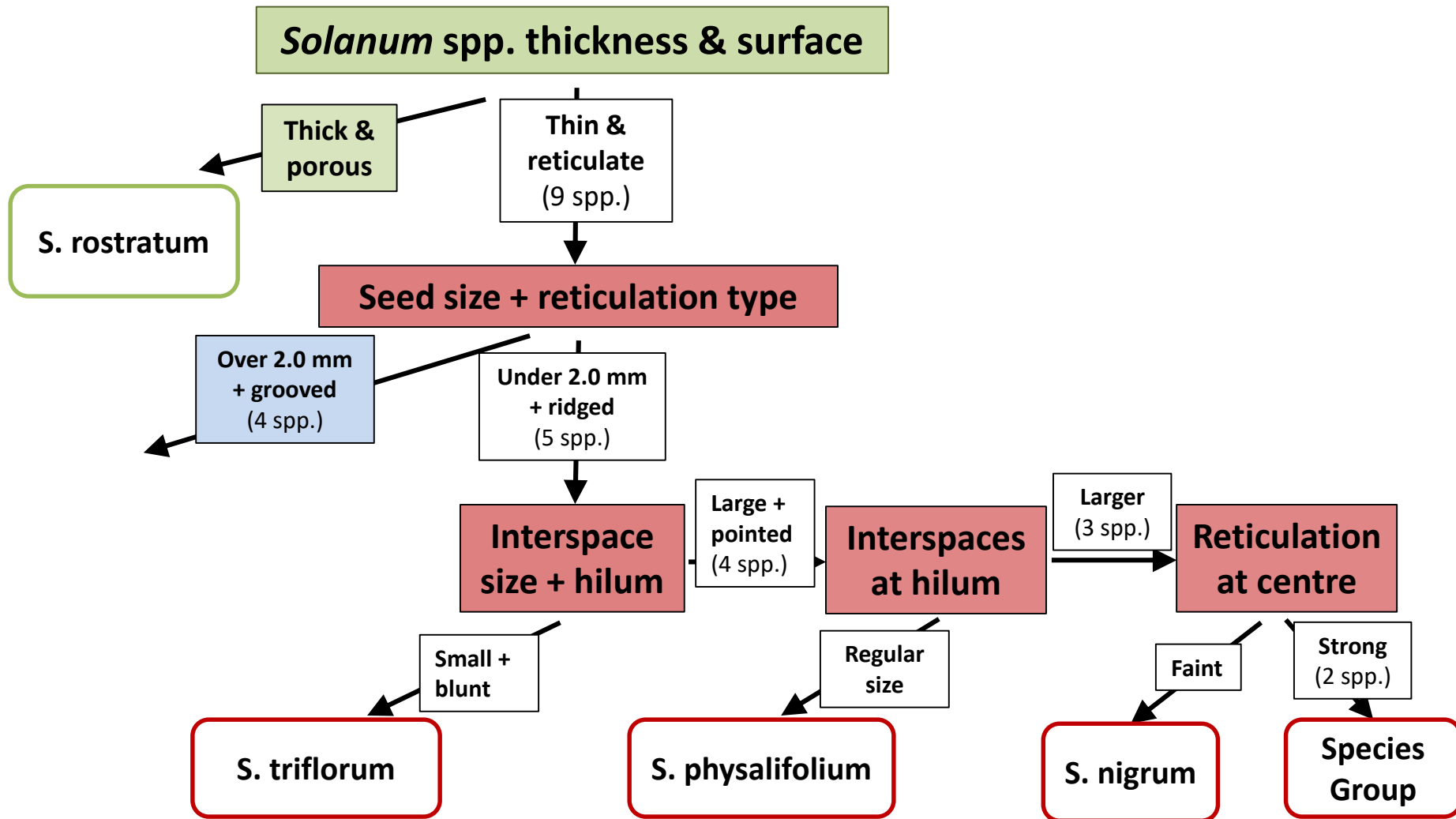
9 *Linaria* species:

1. *Linaria tristis*
2. *Linaria vulgaris*
3. *Linaria supina*
4. *Linaria triornithophora*
5. *Linaria dalmatica*
6. *Linaria genistifolia*
7. *Linaria maroccana*
8. *Linaria purpurea*
9. *Linaria repens*


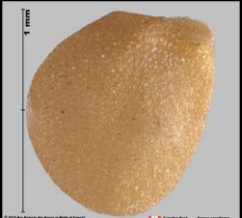
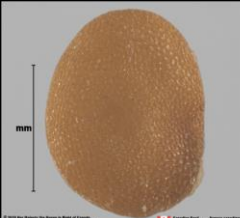
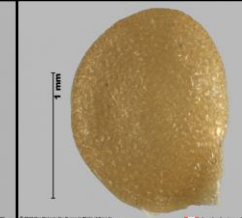

10 *Solanum* species:

1. *Solanum americanum*
2. *Solanum carolinense*
3. *Solanum elaeagnifolium*
4. *Solanum physalifolium*
5. *Solanum ptychanthum*
6. *Solanum nigrum*
7. *Solanum rostratum*
8. *Solanum torvum*
9. *Solanum triflorum*
10. *Solanum viarum*

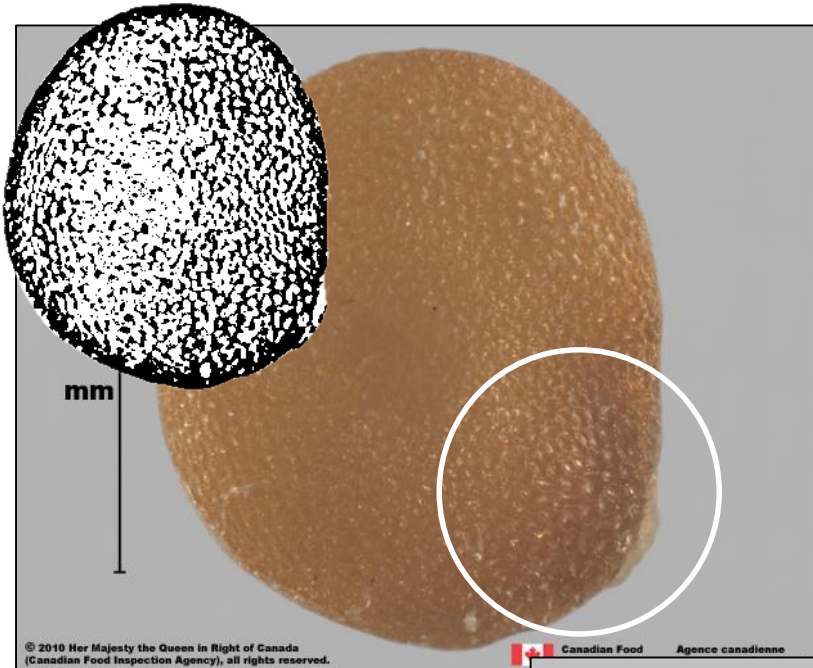
Dividing *Solanum* spp. using seed features



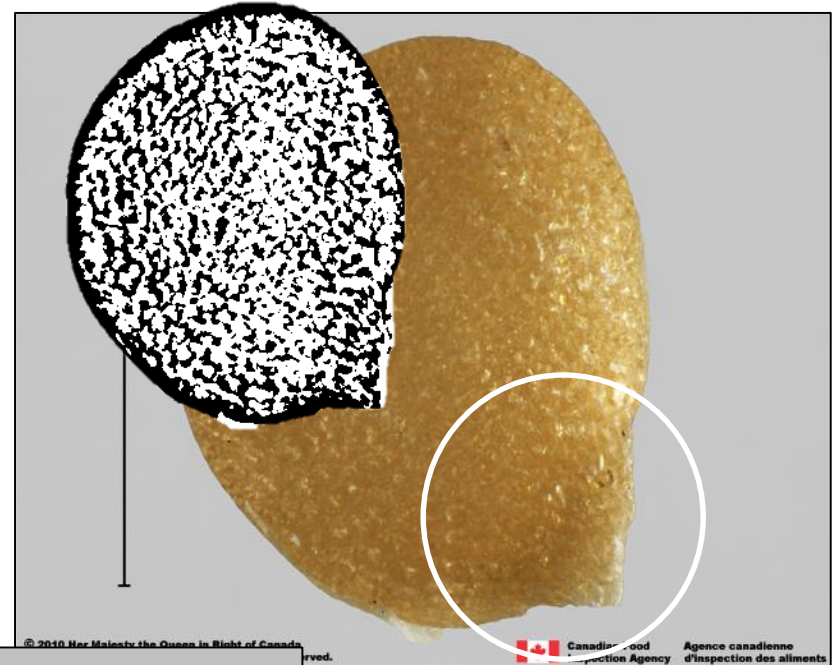
Seed features of small-seeded *Solanum* spp.

Feature/ Species	#1 <i>Solanum americanum</i> (American black n.shade)	#6 <i>S. nigrum</i> (black nightshade)	#4 <i>Solanum physalifolium</i> (ground-cherry n.shade)	#5 <i>Solanum ptychanthum</i> (eastern black n.shade)	#9 <i>Solanum triflorum</i> (cut-leaved n. shade)
Most seeds close to 2.0 mm long		✓			✓
Most seeds between 1.5 – 2.0 mm long	✓		✓	✓	
Interspaces relatively small & numerous			✓		✓
Interspaces near hilum elongate	✓	✓		✓	✓
Interspaces near hilum regular-sized			✓		
Reticulation at centre faint		✓			
Image					

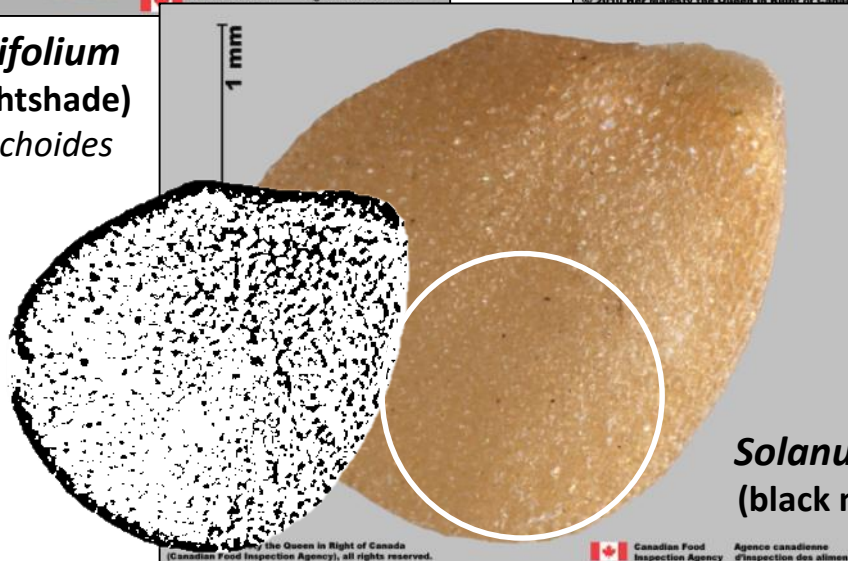
Seed features of small-seeded *Solanum* spp.



Solanum physalifolium
(ground-cherry nightshade)
old name: *S. sarrachoides*



Solanum ptychanthum
(eastern black nightshade)
+
Solanum americanum
(American black nightshade)



Solanum nigrum
(black nightshade)

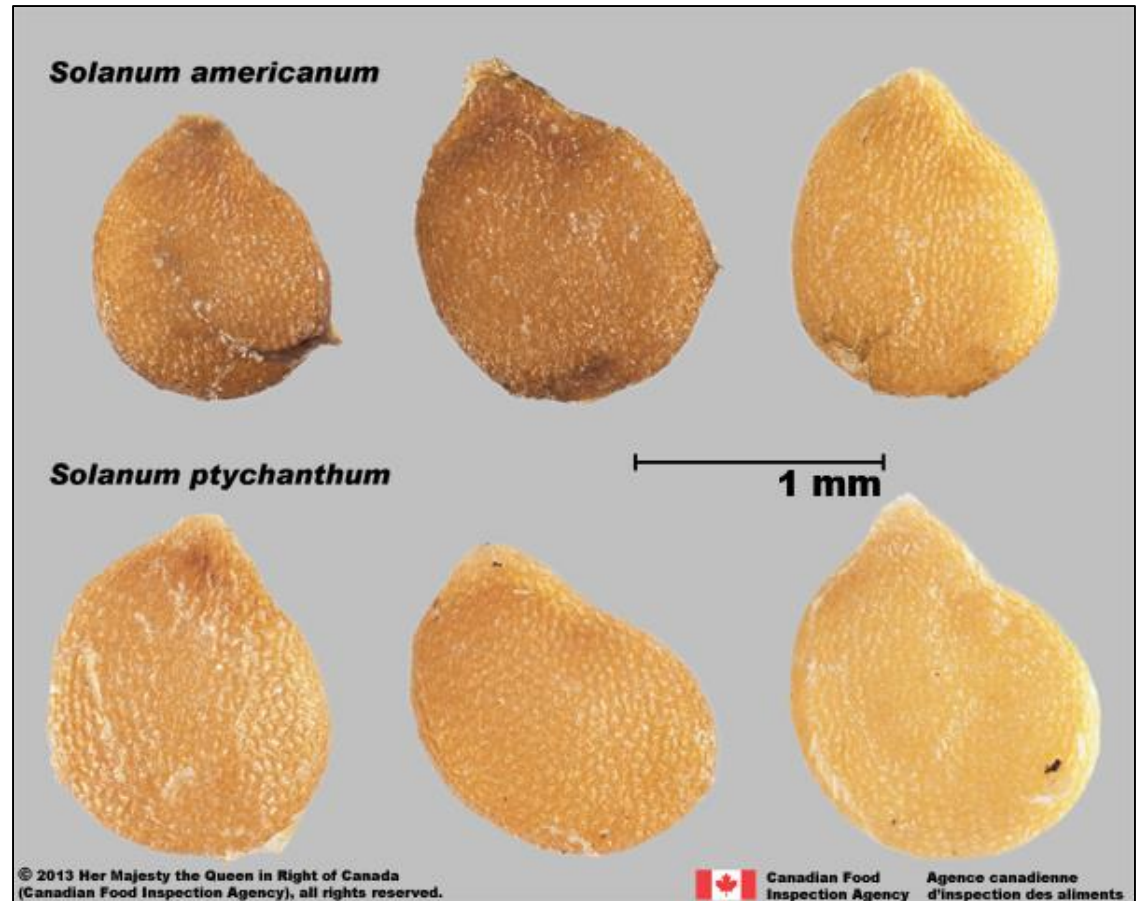
Solanum americanum and *S. ptychanthum* – Spot the differences!

Similarities:

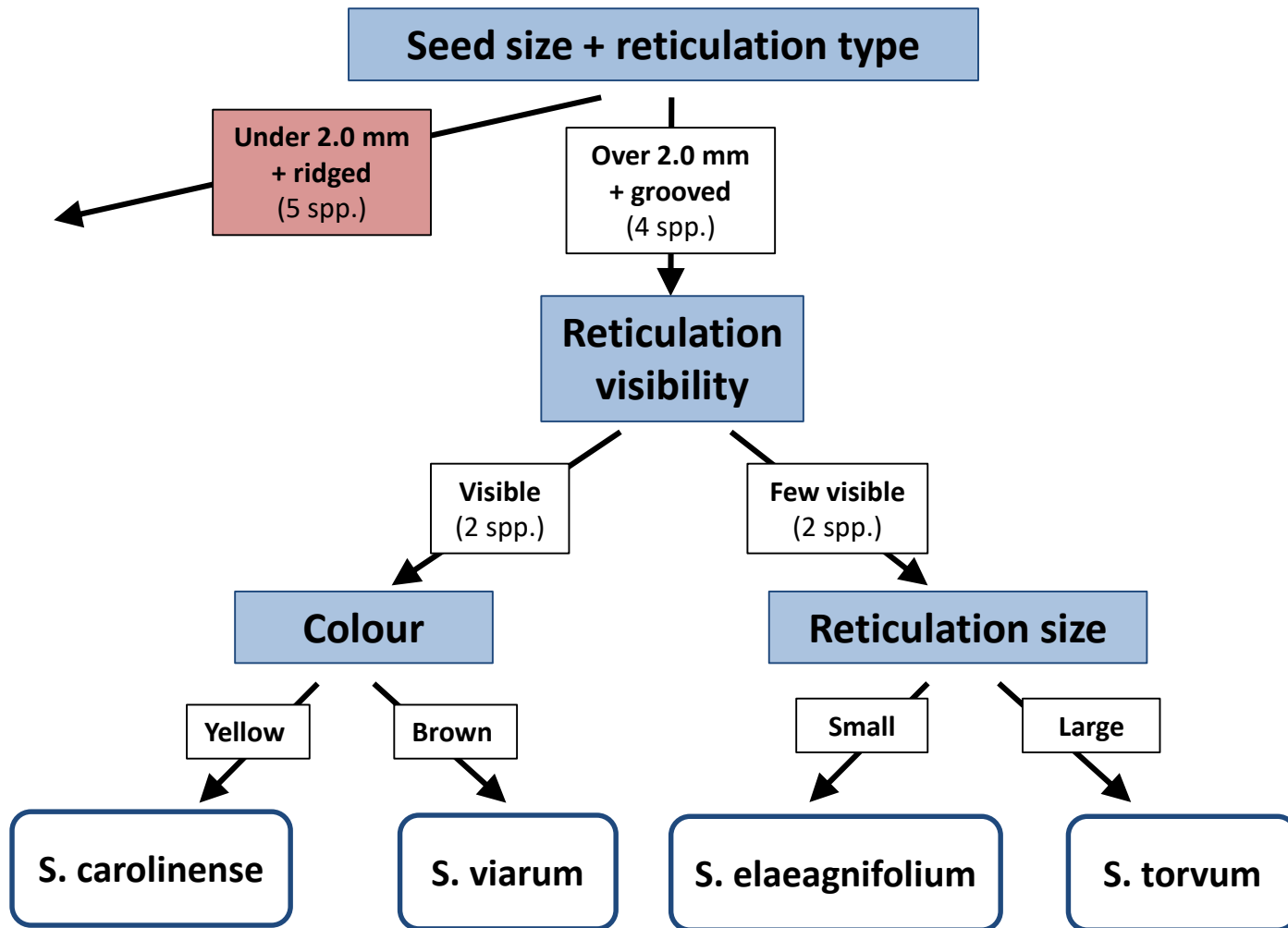
1. Similar size seed
2. Ridged reticulation
3. Interspaces same size over the seed surface

Differences:





1. *S. americanum* tends to have smaller seeds
2. *S. americanum* is rare in Canada (occurs in BC, MB and southern U.S.A)



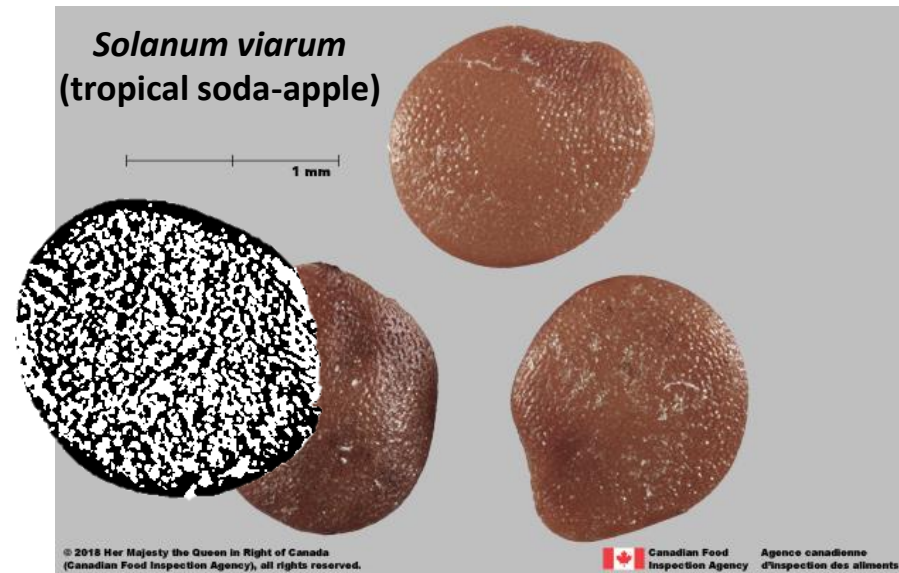
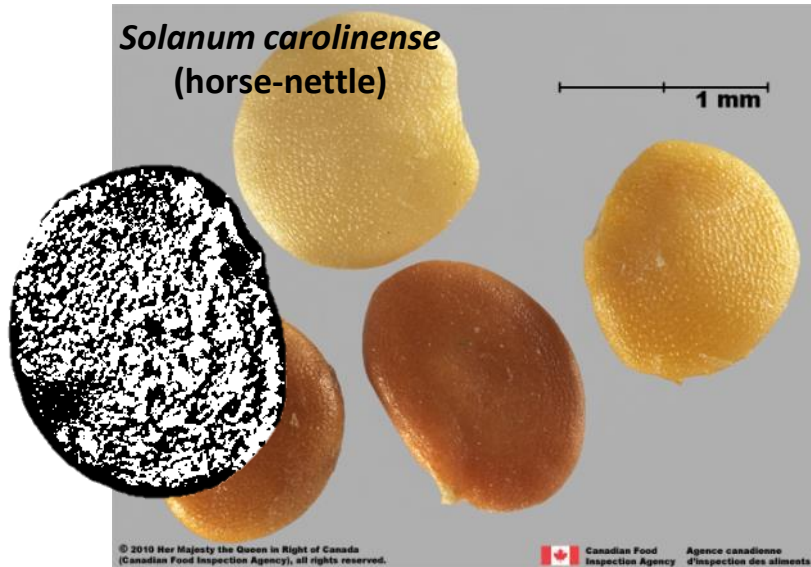
Dividing *Solanum* spp. using seed features



Seed features of large-seeded *Solanum* spp.

Feature/ Species	#2 <i>Solanum carolinense</i> (horse-nettle)	#3 <i>Solanum elaeagnifolium</i> (silverleaf nightshade)	#8 <i>S. torvum</i> (turkeyberry)	#10 <i>S. viarum</i> (tropical soda-apple)
Reticulations visible; surface is roughened	✓			✓
Reticulations not easily visible; surface appears smooth		✓	✓	
Seeds yellow or orange	✓			
Seeds brownish		✓	✓	✓
Interspaces relatively large			✓	
Image				

Seed features of large-seeded *Solanum* spp.



Solanum elaeagnifolium
(silverleaf nightshade)

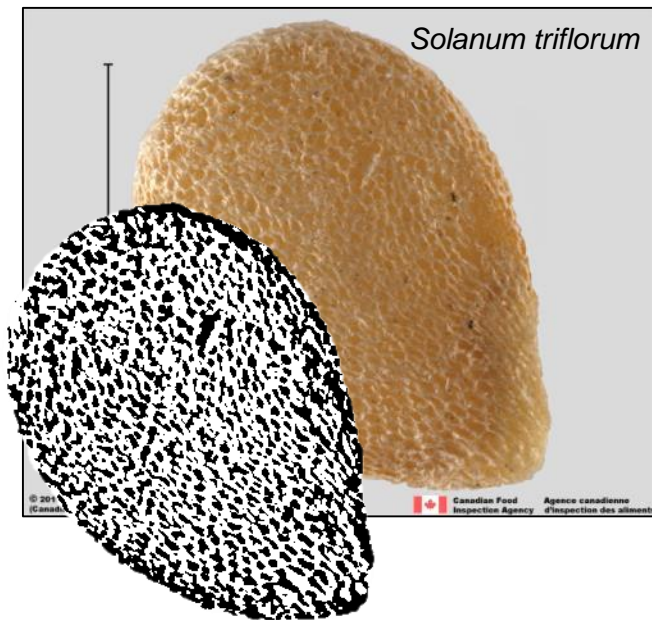


Solanum torvum
(turkeyberry)

Physalis spp., a *Solanum* spp. look-alike

Solanum spp.

- Thinner seed
- Hilum tends to be pulled
- Hilum area thinner
- Reticulation regular
- Ridges angular



Physalis spp.

- Thicker seed
- Hilum flush or notched
- Hilum area same thickness
- Reticulation irregular
- Ridges wavy

