



ISTA Forest Tree and Shrub Seed Committee Survey



- Aim: to gather information about the species tested and have an idea of the forest and shrub seed trade. Guidance for committee activities.
- ISTA accredited laboratories with forest and shrub species in scope.
- OECD Forest Tree and Plant Scheme.

ISTA Laboratories



- Period: 24th May to 26th June 2024
- 24 laboratories.



9 questions:

- | |
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| 1 - Laboratory code and contact e-mail. |
| 2 - Which species are tested in your laboratory? If the number is high, please provide the number and send the list via email to FTS.chair@ista.ch |
| 3 - Which species are the most tested? |
| 4 - Which species have been tested for international trade? |
| 5 - How many forest and shrub seed lots do you test per year? |
| 6 - Which was the lot size? (Intention is to have an idea of the amount of seed produced. The answer can be in lot size range, ex: 1-50Kg: xxx lots) |
| 7 - Which kind of tests are conducted to assess the physiological seed quality by species (germination, viability)? |
| 8 - Which type of information would you like to see in an electronic handbook of forest and shrub seeds? |
| 9 - Could your laboratory contribute with photos and images of normal and abnormal seedlings of forest and shrub species for the electronic handbook? |

Results

From 24 labs → 10 answers.

Species:

<i>Rubus idaeus, Prunus mahaleb, Rosa spp.</i>
<i>Robinia pseudoacacia, Prunus spp, Pyrus spp, Juglans spp.</i>
<i>Carica papaya</i>
<i>Pinus spp. Prunus spp.</i>
<i>Betula spp., Pinus spp., Picea spp., Cryptomeria, Pseudotsuga, Thuja</i>
<i>Acer spp., Tilia spp., Carpinus betulus, Prunus spp., Amelanchier alnifolia, Ligustrum vulgare, Crataegus spp., Sorbus aucuparia, Taxus sp., Viburnum sp., Liriodendron tulipifera, Pinus pinaster, Koelreuteria paniculata.</i>
<i>Eucalyptus globulus</i>
<i>Pseudotsuga menziesii, Picea sitchensis, Pinus contorta, Pinus sylvestris, Picea abies, Alnus glutinosa, Betula pubescens, Fagus sylvatica, Sorbus aucuparia, Viburnum opulus, Crataegus monogyna, Euonymus europaeus, Ilex aquifolium</i>
200-250 species
100 species



The species most tested:

<i>Prunus</i> sp.
Shrubs (lab with 200-250 species)
<i>Robinia pseudoacacia</i>
<i>Carica papaya</i>
<i>Prunus</i> spp.
<i>Betula</i> , <i>Pinus</i> and <i>Picea</i>
<i>Pinus pinaster</i> , <i>Prunus</i> sp.
<i>Pinus taeda</i> , <i>Pinus elliottii</i> , <i>Pinus palustris</i> , <i>Pinus ponderosa</i> , <i>Abies fraseri</i> , <i>Pseudotsuga menziesii</i> , <i>Pinus banksiana</i> , <i>Pinus strobus</i> , <i>Picea engelmannii</i> , <i>Pinus echinata</i> , <i>Liriodendron tulipifera</i> , <i>Larix occidentalis</i>
<i>Pseudotsuga menziesii</i> , <i>Picea sitchensis</i> , <i>Pinus contorta</i> , <i>Pinus sylvestris</i> , <i>Picea abies</i> , <i>Crataegus monogyna</i>



Species tested for international trade:

Robinia pseudoacacia

Carica papaya

Pinus spp., *Prunus* spp.

Pinus taeda, *Pinus elliottii*, *Malus species*, *Pyrus species*, *Prunus persica*

None

International trade but no ISTA certificates issued over the past 10 years.

Number of lots tested per year:

1
500
From 5 to 30
Around 10
2
40-50
More than 200
4
2000-3000

Lot size:

100 gr - 15 kg
1584 kg
<10kg
1-50 kg
1-50kg
50-80 Kg

Conducted tests:



Purity
Thousand seed weight
Moisture
Germination
Tetrazolium test
Excised embryo



Information that would be in the E-handbook:



Photos of fruits, seeds, normal and abnormal seedlings.
Protocols for germination, TZ.
Information for species that are not in ISTA Rules.
Seedling evaluation.
Pure seed definitions, germination criteria more details on Betula sp.
Seed health tests.
Photos of TZ test.
Seed storage information.
Substrate most suitable for species.
Other temperatures for germination more suitable for the species than those ones recommended in the rules.
Disease control during long germination tests.
Further information on the use of the weighed replicates test method.



OECD Forest Seed and Plant Scheme



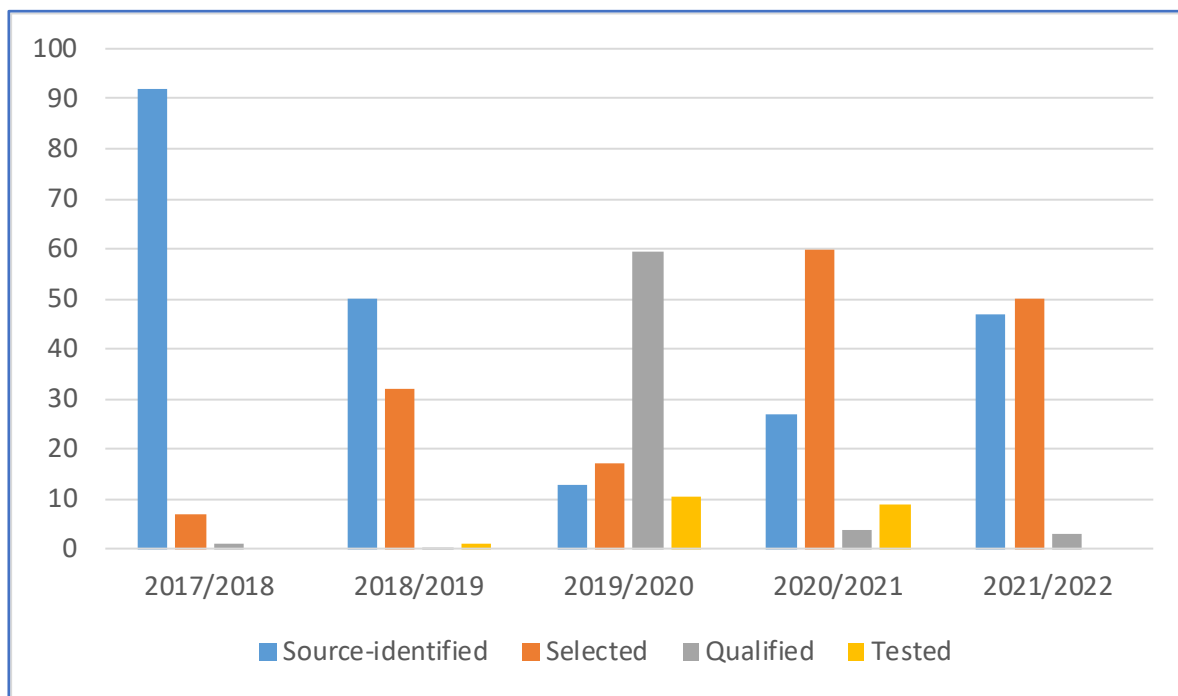
Austria, Belgium, Bulgaria, Burkina Faso, Canada, Croatia, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Kenya, Madagascar, Netherlands, Norway, Portugal, Romania, Rwanda, Serbia, Slovenia, Slovak Republic, Spain, Sweden, Switzerland, Turkey, Uganda, United Kingdom, United States

Data of 5 years from international forest seed trade.
2017 - 2022

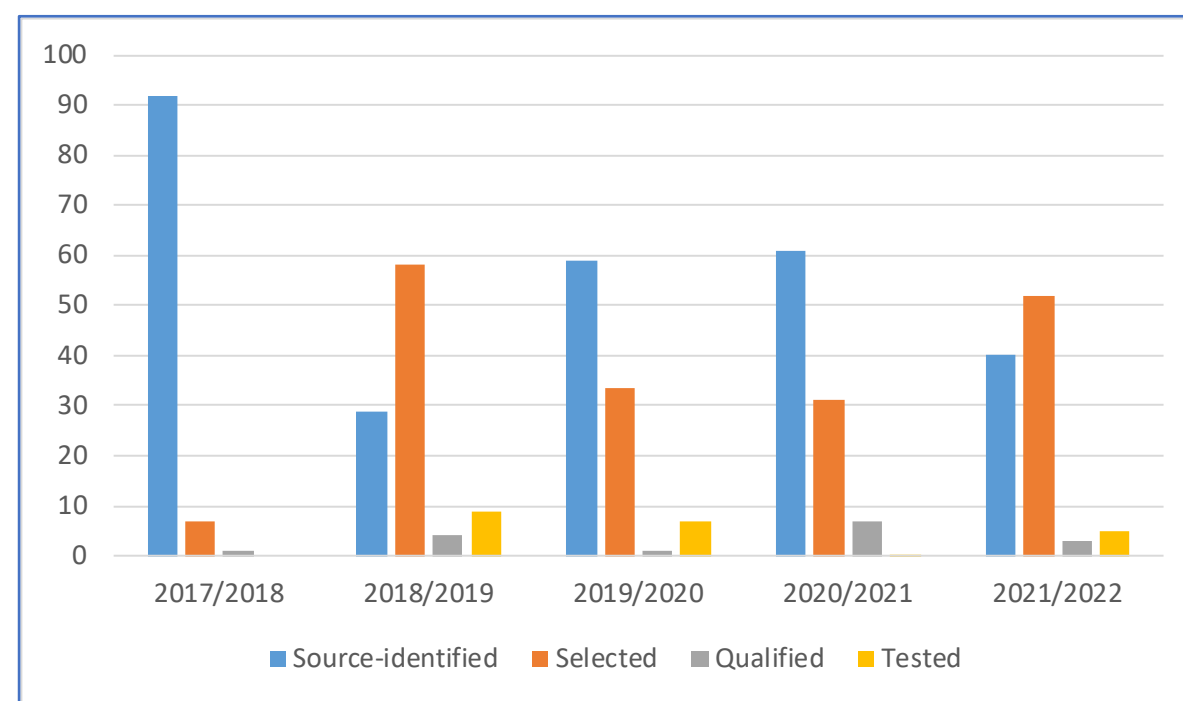


Percentage of forest seeds, by category, traded internationally from 2017 to 2022.

Import



Export



OECD categories of reproductive forest material:

- 1. Source-identified** material is collected from a forest area within a delineated region of provenance.
- 2. Material from selected stands** is collected from a delineated population of trees possessing sufficient uniformity.
- 3. Qualified material** is from untested seed orchards.
- 4. Tested material** from tested seed orchards or stands, which have been proven to produce seed of improved quality.

Most important species traded internationally from 2017 to 2022.



Year	Species
2017/2018	<i>Picea abies</i> , <i>Cedrus libani</i> , <u><i>Pseudotsuga menziesii</i></u> , <u><i>Khaya senegalensis</i></u> , <i>Larix sibirica</i> , <i>Acacia senegal</i> , <i>Anacardium occidentale</i> , <i>Betula pendula</i>
2018/2019	<u><i>Quercus robur</i></u> , <i>Quercus rubra</i> , <i>Picea abies</i> , <i>Castanea sativa</i> , <u><i>Pseudotsuga menziesii</i></u> , <i>Picea sitchensis</i> , <i>Carpinus betulus</i> , <i>Fagus sylvatica</i>
2019/2020	<i>Larix decidua</i> , <u><i>Quercus robur</i></u> , <i>Quercus rubra</i> , <i>Fagus sylvatica</i> , <u><i>Khaya senegalensis</i></u> , <i>Picea sitchensis</i> , <i>Abies nordmanniana</i>
2020/2021	<i>Castanea sativa</i> , <i>Acer campestre</i> , <i>Cedrus liban</i> , <i>Fraxinus sylvatica</i> , <u><i>Khaya senegalensis</i></u> , <i>Pinus nigra</i> , <u><i>Pseudotsuga menziesii</i></u> , <i>Pseudotsuga menziesii</i> var. <i>glauca</i>
2021/2022	<u><i>Pseudotsuga menziesii</i></u> , <i>Abies bornmuelleriana</i> , <i>Cedrus libani</i> , <i>Abies grandis</i> , <i>Quercus petraea</i> , <u><i>Quercus robur</i></u> , <i>Abies nordmanniana</i> , <i>Pinus nigra</i>



Joining ISTA lab's + OECD most internationally traded species



Robinia pseudoacacia

Carica papaya

Pinus spp., *Prunus* spp.

Pinus taeda, *Pinus elliottii*, *Malus species*, *Pyrus species*, *Prunus persica*

Pseudotsuga menziesii, *Khaya senegalensis*, *Quercus robur*



From now...

- 1st step: species will be first included in E-handbook → internationally traded.
- 2nd step: others.



- 10 accredited labs.
- OECD Forest Scheme

Thank you!!!

I have no actual or potential conflict of interest in relation to this presentation.

ISTA ANNUAL MEETING 2024



01-04 JULY CAMBRIDGE, UNITED KINGDOM

