

Challenges with Processing, Storage and Pre-treatment of Recalcitrant Tree Species

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**Challenges to our Future Tree Seed Supply
BC Tree Seed Centre, June 27th**

Berthier : unique Quebec public nursery producing hardwood seedlings for reforestation

Bareroot*		Container*	
Red oak	570 k	Sugar maple	444 k
Bur oak	Test 2 k	Yellow birch	247 k
Black cherry	52 k	Red maple	85 k
Black walnut	40 k	Bur oak	50 k
Bitternut hickory	24 k		

* 2022 sowing

Hardwoods production in Quebec



- 8 species from seeds
 - Oaks: red and bur
 - Maples: sugar and red
 - Yellow birch
 - Black cherry
 - Black walnut
 - Bitternut hickory
- Hybrid poplar from cuttings

Hardwoods production in Quebec

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Recalcitrant species

Post harvest conservation



Sowing: first week of November



Many seedlots, big volume and short time for treatment

Species	Seedlots	Total volume (hl)	Reception date	Treatment duration (days)
Red oak	9	62	20/09 to 14/10	10
Bur oak	3	20	07/10 to 13/10	5
Black walnut	5	135	06/10 to 14/10	20
Bitternut hickory	1	10	05/10 to 22/10	0.5

Each species has its own challenge

- Bur oak: cups
- Black walnut: de-hulling
- Red oak: mixing big seedlots
- Bitternut hickory: none

Quality test = cut test



Quality test

Oaks

Glands sains



Glands à rejeter

Glands pourris



(Zones atteintes situées près du germe)



Glands endommagés par des insectes



Black walnut

Noix saines



Noix à rejeter

Noix sèches



Noix pourrie



Bitternut hickory

Noix saines



Noix à rejeter

Noix pourries



Noix sèche



Noix laiteuse



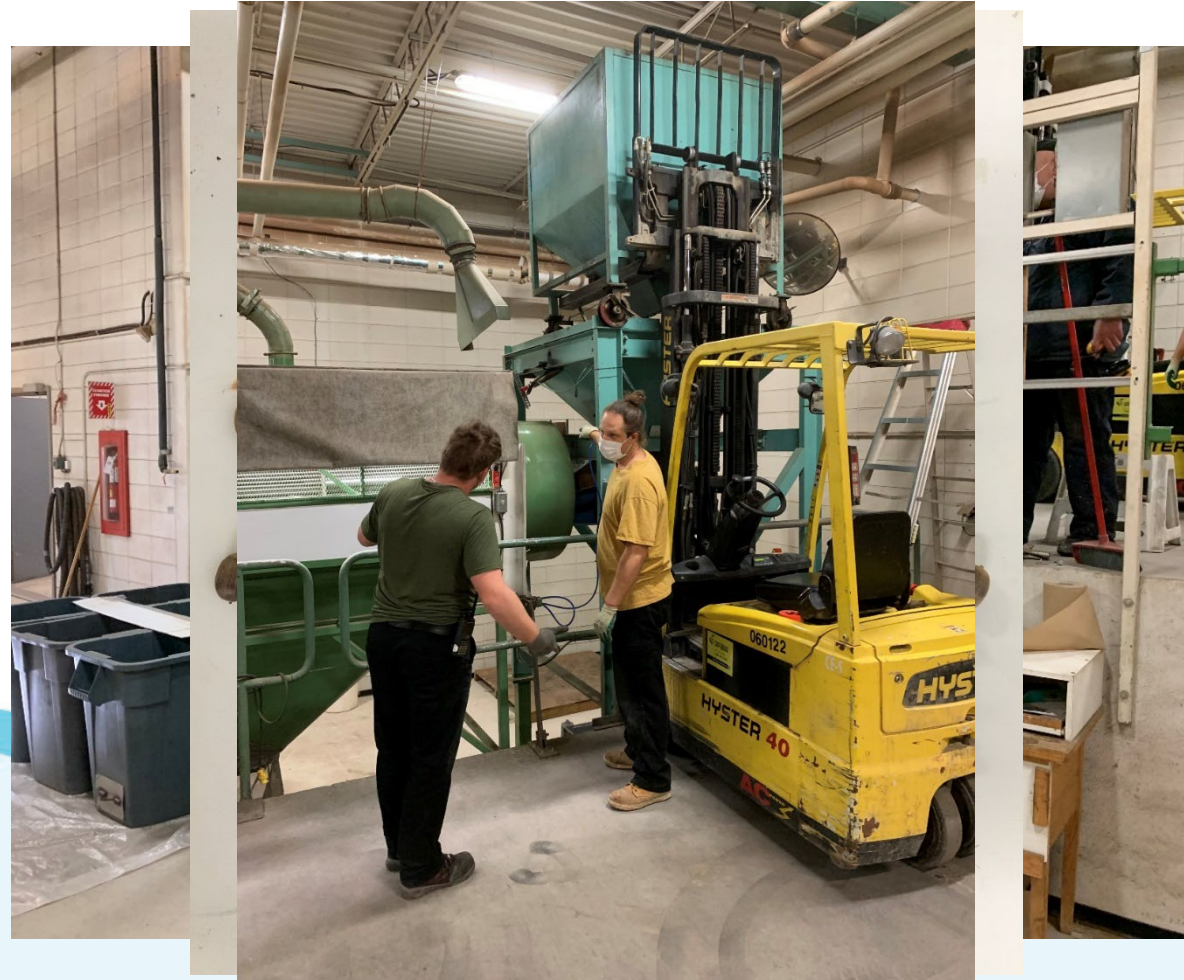
Red oak (*Quercus rubra*)

- Challenge = mixing big seedlots



Bur oak (*Quercus macrocarpa*)

- Challenge = cups elimination



Black walnut (*Juglans nigra*)

- Challenge = dehulling



Bitternut hickory (*Carya cordiformis*)

- No challenge



Conclusion

- Lots of work to do in a short time
- Indirect but reliable evaluation of quality
- Oaks should be all produced bareroot next year to avoid autumn early frosts
- New species will be studied thanks to research projects

The dream team !

