Cwi & Py Program Updates

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Ponderosa Pine (Py)



MacKenzie and Mahony 2021

Interior Western Redcedar (Cwi)



MacKenzie and Mahony 2021

Program Objectives

- To establish first-cycle progeny tests
 - To inform seed transfer policy
 - To select families with superior performance
 - To establish seed production orchards



Cwi Program Update



FLNRORD Saanich Seed Orchard (Chris Halldorson)

Existing Cwi Resources



- John Russell
- 15 test sites, 58 provenances, two clone banks





Lois progeny test

Scion Collection



Barnes Creek Clone Bank – 40 parents



Saltery Bay progeny test – 49 forward selections

Grafting



Heidi Holtmann



Cwi grafts

Cw Genetic Structure



Lise van der Merwe, MSc



Lise van der Merwe



- Cw cold tolerance testing via electrolyte leakage
- No geographic patterns of local adaptation
- Therefore, test the best coastal material in the Interior (e.g. heartwood rot selections)
- 84 coastal selections

Cw Px6 Forward Selections



Val Ashley, Cwi Technician



95 selections with a genetic gain of 20%

Kal Breeding Arboretum



Breeding at CLRS







Oldrich Hak

Cwi Activities 2021

- Collected and grafted scion from 173 parents
 For a total of 318 genotypes
- Selected 95 parents from Cw Px6 trials
 - For an eventual total of 413 genotypes
- Collected pollen for CLRS polymix breeding

 Plus bonus seed from selfs and controlled crosses
- Applied GA to females for 2022 breeding



Cwi Activities 2022

- Establish Kalamalka breeding arboretum
- Establish clone bank at Skimikin Seed Orchard
- Graft Px6 forward selections
- Initiate polymix breeding at CLRS
- Apply GA to females for 2023 breeding
- Assess Yc data from Interior progeny tests



Cwi Activities 2020 - 2028



Py Program Update



Willamette Valley seed orchard, 11 years from seed (Weyerhaeuser) Photo credit: Robert L. McNitt





Tristan Huber, Co-op Student (Falkland)



Val Ashley, Py Technician (Summerland)



Yellow Lake Rest Stop (Olalla)









West Kelowna







McKinney (Oliver)



Fire, McKinney FSR



Smoke, Castelgar







Squirrels



Davey Tree, Falkland



J KO INC, Skimikin Seed Orchard





J KO INC, Beaverdell











J KO INC, Skimikin Seed Orchard





Adam Gilewski, MSc student, and Jim Mattsson, Assoc. Prof SFU



- Raised beds est. fall 2019 with 22 families
- Farm field test est. fall 2020 with 28 families





• Summer dry-down achieved in 2020 and 2021





Trait measurements for raised-bed trial



Tristan Huber, Co-op Student



• Adam Gilewski's MSc research at SFU





PEG root growth trials

- 62 full-sib Fdc families; median 26 trees/family
- 62% mortality but h2 only 0.03 ± 0.02



Greg O'Neill

WGR Innoculations

- Collected spores from infected Pli rootstock
- Tested two inoculation methods on Pli & Py



Lindsay Bellingham and Geoff Bradley

Py Activities 2021



- Completed raised-bed drought study
- Tested WGR inoculation protocol
- Completed BC cone collections:
 - Identified 94 plus trees in BC; collected seed from 74
 - Plus an additional 33 BC parents from Skimikin/Bailey
- Completed US cone collections:
 - USDA Region 6 collected cones from 42 tested parents and 52 untested parents
 - Weyerhaeuser OR collected cones from 16 parents
 - Plus an additional 65 US parents from Skimikin/Bailey



Py Activities 2022

- Graft Weyerhaeuser scion at Kalamalka
- Prep new clone bank space at Kalamalka
 Identify location for backup clone bank
- Finish BC cone collections
 - Collect cones from more American sources?
- Complete field drought screening at Kal S.O.



Questions?

