

The Canadian Sweet Chestnut

-Newsletter of the Canadian Chestnut Council-

Issue # 72 – September 2018



<http://www.canadianchestnutcouncil.ca>

Council Mission - to help restore the American Chestnut to the areas of Canada it once occupied.

Current Priorities

- 1) Breeding resistance
- 2) Breaking Isolation / Establishing Genepool Nodes
- 3) DNA Analysis
- 4) Survey of existing Chestnuts in the wild

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- Summary of 2018 research activities – Dragan Gallic
- 30th Annual General Meeting – special guest speaker, Dr. Jared W. Westbrook

Summary of 2018 Research Activities – Dragan Gallic

Breeding Resistance -2018 planting - In mid-February we seeded 2448 nuts from crosses of F2 generation, 1323 nuts of native origin over 400 nuts with various resistance to chestnut blight as controls. The germination rate was little over 98%. On 5 June, 2333 F2 seedlings were planted at the THF - Onondaga Farm nursery by 14 volunteers. THF provided lunch, coffee, donuts and water for the planting crew. To date, we have planted over 13,700 F2 seedlings



Germinated Seedlings in green house at Simcoe Research Station, University of Guelph, Simcoe

Breeding Resistance – Inoculation / Lesion measurement – In late May we have inoculated 99 F2 generation trees with the Chestnut blight: 57 at the Casier Farm, 37 at the Tim Horton Onondaga Farm and five at the Riverbend Farms. The inoculation crew: Ron Casier, Doug Fagan, Hugh Oliver and Dragan Galic. In this generation, we used trunk inoculations. The trunks were over 5 cm in diameter. The trees were inoculated with two Ontario isolated chestnut blight isolates, UG1128 (less virulent) and UG546V (more virulent). The inoculum was prepared by the Agriculture and Food Laboratory, University of Guelph. The first lesion growth measurement was done after four weeks (late June), second measurement 8 weeks after the first (late August) and thereafter once a year later in the season until tree gets selected as a parent for the next F3 generation pollination cycle.



Trunk inoculation – small drill hole



Inoculated sites protected with parafilm

Inoculum Application



Lesion Measurement

Breeding Resistance – Pollination

Beginning in June and completed around the third week in July, the pollination of F1 generation was conducted and this year we have pollinated only trees without sufficient number of progenies. We also pollinated pure native trees for the purpose of breaking isolation and germplasm conservation project and trees with large nuts.



Breaking Isolation - Since only less than 1 % of all burrs on a mature chestnut tree gets self-pollinated, in 2015, we initiated breaking isolation project. This way we provide pollen to isolated mature chestnut trees for pollination and ultimately viable nut set. We use grafted native trees for this purpose. The grafted trees flower many years earlier than seedling originated trees. This technique allows us to increase genetic variability to each tree used in the project. This year we added 7 new mother trees, which is in total 48 trees. Within pollination distance from each mother tree, we plant 7 to 10 grafted trees of different genotypes. To fulfill project requirements as outlined by the Ministry of Natural Resources and Forestry, we have to add 13 additional trees.

Our members are invited to report isolated, mature and blight free trees to the Canadian Chestnut Council for inclusion in the project.



Grafted trees for Breaking Isolation



Mature tree surrounded by grafts – Norfolk County 2018

Establishing Genepool Nodes - We continue adding germplasm conservation sites. To date, we have established 15 sites. Our intention is to have minimum 100 trees of various native origin genotypes at each established orchard.



Trees planted at Longwoods Road Conservation Area (Lower Thames Conservation Authority)

Genepool nodes have been established at the following sites:

- Nature Conservancy of Canada – two sites in Norfolk
- Grand River Conservation Authority – Guelph Lake Rotary Forest
- City of Hamilton – Johnson Tew Park and Arboretum, Greensville
- Conservation Halton – two sites
- Thames Talbot Land Trust- Hawk Cliff Woods
- Catfish Creek Conservation Authority – Yarmouth Natural Heritage Area
- Lower Thames Valley Conservation Authority - Longwoods Road Conservation Area
- Upper Thames River Conservation Authority – Butternut Archive
- John E. Pearce Provincial Park
- Port Burwell Provincial Park
- Komoka Provincial Park
- Glenn Hope Conservation Area, Moseley
- David Anderson Conservation Area, Tryconnell

30th Annual General Meeting – Saturday, Oct. 20, 2018

The Canadian Chestnut Council invites you to our 30th annual general meeting. Hear the latest on the Canadian Chestnut Council's priorities as we progress towards our goal of reintroducing the American Chestnut to Canada's Carolinian zone.

Special Guest Speaker – the Canadian Chestnut Council is delighted to have **Jared W. Westbrook, Director of Science, The American Chestnut Foundation** as our guest speaker.

- Jared oversees operations at The American Chestnut Foundation's breeding program at Meadowview Research Farms. Also, he is involved with a program to conserve a range-wide representative sample of American chestnuts in orchards for eventual out-crossing with transgenic trees, a project on rooting stem cuttings and a landscape genetics study to geographic patterns of genetic diversity and test for gene-environment associations.

Chair's Message

We will celebrate our 30th AGM this October as the Canadian Chestnut Council. Although our founders are no longer with us, they did pass on their passion for preserving the American Chestnut. I encourage everyone to make an effort to invite and bring a possible chestnut enthusiast to our AGM. Ten years ago, Murray Alward invited me to the 20th AGM and I have never looked back from that introduction to the CCC and the American Chestnut. I hope you will help contribute to the next ten years by encouraging another generation of passionate individuals to work towards the preservation and restoration of the American Chestnut to its ecological, economic and cultural role in the environment

Ron Casier

Location – Tim Horton Children's Foundation – Onondaga Farms
Science/ Eco-Centre, 264 Glen Morris Road East, St. George Ontario

Time – Registration 11:00am. Meeting 12:00pm

Snack available.

Want more information:

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Council Directors – Chuck Beach, Ron Casier, Tim Casson, Gord Chinnick, Adam Dale, Doug Fagan, Dragan Galic, Kathryn Harrison, John Hill, Christine Vey. **Interim Directors** – Stan Furman, Sal Paccione, Pete Smith