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SONGNEWS

The Newsletter of the Society of Ontario Nut Growers and Eastern Chapter of the Society of Ontario Nut Growers

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The **SONGNEWS** is published 3 - 4 times per year by: SONG/ECSONG. Any submissions to the newsletter can be sent to the editor, Bruce w. Thurston, RR # 2 Branchton, On. N0B 1L0 b.thurston@silomail.com or Nut.trees@grimonut.com

NUTS ABOUT HEARTNUT COOKING

This unique cookbook is the only book dedicated solely to the heartnut. The book is priced at $12. Please add $3.50 for mailing. For special quantity price, contact: Gordon Chinnick, Treasurer, 722 6th Concession Rd, Walsingham, ON N0E 1X0

SONG Website: www.songonline.ca

Be sure to check it for updates on meetings, read about nut farming, post your nuts or nut products to sell on line.

Send your free posting to: Ernie Grimo, President, 979 Lakeshore Rd, RR3, Niagara/ Lake, On L0S 1J0 or to Nut.trees@grimonut.com

Inside This Issue

Library Corner - Gord Wilkinson

This part of the page is now open to members who would like reference information or articles written by NNGA or SONG/ECSONG members. Gordon has a nearly complete set of NNGA Annual Reports and a complete set of SONG News issues to research.

SONG/ECSONG Archive

Have you visited ECSONG? Click the tab at the bottom of the SONG website to see the work that was done there? If you click on the SONGNEWS tab, you will be impressed to find all of the SONGNEWS issues from the beginning of SONG in 1972. Enthusiastic members of ECSONG did this for all members and visitors alike. There is plenty of reading there for the new as well as old members. Enjoy!

If you Haven't Renewed

Its time for your annual membership. Check your envelope for the year you are paid up. You can renew for 2021 now! Please renew now.

Coming Events

At this time we have no coming events

Interim Presidents Message Ernie Grimo

The news these days are mainly about the Covid-19 pandemic and its repercussions on the health of the world's population and the devastating effect it has on the world economy. We have been warned by numerous scientists that one would come and now it seems that this unheeded message has come to fruition. The sneakiest thing about this virus is that asymptomatic individuals are able to pass it on unknowingly, affecting everyone contacted face to face. Will the world return to normal again? Hopefully, but certainly much wiser.

As if that was our only world issue. Climate change is more undaunting than the pandemic. The Arctic and Antarctic are seeing it faster than the rest of us. There are more hurricanes, summers are warmer and hotter. Each year we are reminded that the last ten years have been the hottest on record. And what are we doing as individuals to help? Planting more trees will help to sequester carbon. I have resigned myself to driving an electric hybrid to help in some small way. The world must change from fossil fuels to less damaging forms of energy. By capturing energy from the sun and wind, we can slow this change.

After replacement shoulder surgery a few weeks ago, I was able to visit my nursery to see how things were going. The lack of rain this year is the exact opposite of the conditions last year. Maybe the trees had a foreboding and decided to let up on the crop this year to save energy. Most of the orchard trees look sad with drooping leaves and light crops. Only the hazelnut trees are performing as usual, not bumper crops, but still favorable. We collect the nuts from each tree individually on nets, so we can evaluate the crop on each tree. This is the only way we can determine which trees are the best producers with the best quality nuts on an annual basis. The following is a 4 year report on the production on our selected trees in the orchard. Print is small to fit it all in, so you may need a magnifier.
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Hazelnut Roaster by Ernie Grimo

We tried roasting in-shell hazelnut in the oven, but there was too much variation in the roasting results. Some were over done while others ended up soft and under done. I looked on Amazon and found exactly what I wanted pictured here. The brand is 'Instant Vortex Plus Air Fryer Oven 7 in 1 with Rotisserie, 10 Qt'. There are several other brands available and I am sure they work as well.

We found that 325 degrees F. at 17 minutes was the perfect temperature and time period. Shelled hazelnut can be done the same way. The basket rotates so that all of the nuts are evenly toasted. The nuts need an overnight cooling period to reach optimum flavour and firmness. They are delicious. I like roasted better than fresh.

So far we have roasted over 200 pounds. At $119 US, it is a great deal.

Variations on the cracking of black walnut by Martin Hodgson

Black walnuts are a great tasting potential food source that locally goes nearly unused.
The primary difficulties in using them are two fold. One - the thick green covering or husk that tends to stain your hands black and rots away into a black mush. (There are various machines (homemade*) that can remove this husk by abrasion) Secondly- the sturdy nut casing or shell that requires extraordinary efforts for humans to crack open but little effort for squirrels to split the shell open. (maybe we could train squirrels?)
There are well developed harvesting and processing facilities in the central US (Missouri) that use black walnuts but few locally for all intents and purposes.
Those who have tried to crack black walnuts, likely with a hammer of some kind, find the nut meat tends to shatter into many small pieces that have to be separated from the shell fragments. This tends to be too tedious to all but the most determined consumer.
Tests were carried out in 2018 by Geoff Christou where he only superficially dried the black walnut shell but left the nut meat in a relatively undried condition. He was successful in pulling out some intact or nearly intact black walnut meat bodies. They looked like two miniature lungs to some extent.
Apparently the cleaned black walnut shell had undergone only minimal drying which left the nut meat much more flexible and less likely to shatter when cracked.
Last fall I cleaned several bushels of black walnuts in my cement mixer (with water and gravel to abrade the husks), rinsed and then sanitized them in bleach water. I tried two different methods to dry them. Initially they were contained in a milk case over the heating duct in the house which runs constantly, but there was little to no heat produced at this time. This went for slightly more than 24 hours .There was only a limited number of nuts in the case so, after a few test trials, I went to the larger capacity available in my nut drier where I placed them in open vegetable baskets in my dryer and forced ambient outside air to blow over them day and night.
I took samples from the bins at different times to see what the crack out looked like. This was a very rudimentary test due to the fluctuating temperatures which were uncontrolled.
I cracked about 10-20 nuts at each point of time, replacing any blanks with new candidates.
Cracking was carried out using a geared lever clamp that applied controlled force to the nut. An effort was made to try cracking the nuts at different orientations but no conclusive optimum direction was determined.

Here is what I observed

The nut meats came out in two conditions. About half of the nut meats were firm, plump, smooth skinned medium brown in colour and fully formed, while the other half were wrinkled, dark brown and only partially filled. I expect that this latter group were early drops that had not completely filled.

As cleaned and washed, no drying at all – nut meat was tightly packed into the shell and shattered on extraction.

Over the house vent – 12hrs – Nuts slightly drier, nut meat does not shatter as much as before and come out in quarters.

Over the house vent - 20 hrs. – Little change in crack out, primarily quarters of nut.

Over the house vent - 28 hrs. – Lots of halves and some full double nut meats

Nuts from the nut drier – Cracking after 24, 32, 40, 50 100 and 150 hrs. in the drier.

-Some halves were recovered at 24, 32, 40 and 100hrs. None at 50 and 150 hrs.* (excepting partially filled nuts)

-Nut meats still flexible at 100 hrs hence many ¼'s and ½'s. Occasional whole nut meat. Best recovery of halves occurred after 24 and 40 hrs. of drying.

-many semi-filled nuts in the mix. Need to harvest "blanks" before main drop.

By 150 hrs. of drying nut meats were shattering about the same as black walnuts that had been stored for 12 months in a container. Recovered only ¼'s or less.

Conclusions

The concept of cracking black walnuts somewhere in the earlier stages of drying to extract large sized nut pieces seems to have some merit and is worth of further investigation.
Investigators need to be able to apply a constant level of low heating and air flow to determine a better length of drying and appropriate temperature and air flow.
Also some investigation should be carried out as to the best direction to apply cracking pressure which seemed

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Paul Crath Introduces the "Carpathian" Walnuts to North America


Paul Crath Carpathian Walnut introduction

Prof. C. T. Currelly the Founder and at that time the Director of the Royal Ontario Museum of Archeology in Toronto, also became interested in my walnut experiments. Then later on some other prominent Torontonians followed us and the Nut Growers Society of Ontario was organized.
Americans also became interested in the Carpathian walnuts. First among them was a graduate from Cornell University, a farmer near Ithaca, N. Y., Mr. Samuel Graham. Mr. George Slate of the Geneva Experiment Station was one of the first Americans who early got interested in the Carpathians.
There in the States is the Northern Nut Growers Association. Following Mr. Corsan I also became a member of the Association.

My Research in English Walnuts in Ukraine

From the year 1924 until 1936 I spent most of my time as a Presbyterian missionary in Western Ukraine, which was then under Polish occupation. From time to time I used to come to Canada on furlough. Every time, coming from Ukraine, I brought also a box or more of Carpathian English Walnuts for planting.
Then I liked to tell Dr. Palmer, the Director of the Vineland Government Experimental Farm about my research in walnuts in Ukraine.
In Western Ukraine my headquarters were in the city of Kolomyja, Province of Galicia, at the foot of the Eastern Carpathians. Thus, I was in the center of the culture of the Carpathian walnuts.
Though my circuit was very large (Provinces of Galician and Volynia) and there was a time when I served 30 congregations, nevertheless I had a little time also to study the English Walnuts in their native environments.
Before starting the research in that country, I decided for myself what in my conception should be the ideal English walnut. I have come to the conclusion that the nut should be of large size, thin shelled, its kernel well filled up, being of a pleasant sweet taste; inside of the nut there should be no partitions, thus allowing the kernel to roll out unbroken.
Then I printed questionnaire blanks for each individual nut tree to be examined. Beside the above mentioned questions I added:
What is the name and address of the owner of the tree, and its location?
How old, tall and thick the trunk of tree is?
How many pounds of the nuts the tree yielded that year?
In what kind of soil does it thrive?
What enemies attack it?
What fertilizer, or manure, has been used in the particular case, or none?
Is there in the nuts, leaves and bark, any sign of cross-pollination?
Regarding the grafting and budding I found that the local nut-growers had not the slightest idea how to go about it. They also did not care to prevent their walnut trees from cross-pollination.
Soon I found that there in Galicia alone could be found several hundreds of varieties of Carpathian English walnuts. Anyway till 1935, I sent to Toronto 200 varieties of the Carpathians.
Some of those English Carpathian walnuts were 2-1/2 inches long, or five nuts to a foot; others were only one third of an inch. Some very small Carpathians produced nuts in clusters, like grapes. In some Carpathians it was possible to detect cross-pollination with Asiatic walnuts by their harder shells, by partitions, by the shape of nuts, by the construction of the leaves and their odor, and in some cases by the color of bark.
By kernels all the Carpathian half-breeds are English walnuts, differing group from group by the taste. I remember that only in 1898 in the bourg of Loubni, and in 1933 in the City of Kolomyja I came across two trees which resembled our black walnut. In both towns some people used to live in America and coming home they could bring with them some American nuts.
In the region around Kossiv I came across groves of American black walnuts and butternuts. Those trees were planted there by the Austrian Government 75 or so years ago. Of course, they did not cause all the hybridizing I mentioned above. Maybe the Asiatic nuts were brought in Eastern Carpathians when the Tartar hordes crossed the mountains in the region of Pokouttia (Kossiv) in the year 1242.

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Not far from Kossiv, westward, in the village of Kosmuch in the Carpathians 2500 feet above sea level I found English walnut trees of small size (15 feet tall, 6 inches thick) with light gray bark, producing 2 inch long nuts of speary shape, like our Canadian butternuts but of English Walnut shells and kernels. The kernels were tasty. There was no question but that they were half-breeds, English plus Mongolian nuts.

There in Kosmuch, not far from the historical Tartar Passage, through which in 13th century Ghengis Khan hordes invaded the Danube plains, in winter the temperature falls to 45 degrees below zero. Owing to the hardiness of the strain and pleasant taste of the nuts I picked up about 10 pounds of them to be tried in colder parts of Ontario, (and some of them already are bearing north of Toronto and true to the type.)
I called the nuts Hutzulian Pointies, as they grow in Hutzulia the country of the Ukrainian Mountaineers.

The year 1936. My last trip to Western Ukraine

In Ontario farmers were slow to grasp the idea of cultivating my Carpathian English walnuts. Either they did not believe the English walnuts could thrive in this Province or waited till my trees would start to bear. Nevertheless, some thousand of my seedlings were planted here and there all over Ontario and smaller quantities in the Maritime Provinces, Manitoba and Alberta. The late Sir Wm. Mulock hired Mr. Corsan to graft with the Carpathian scions tops of many of his black walnut trees in Orillia, Ont. Fred Gaby, the engineer who built the Ontario Hydro, ordered through me from Ukraine 50 to 12 feet tall Carpathians of bearing age and planted them on 10 acres near Cooksville. Ont. Prof. Currelly has bought 25 acres near his estate west of Pt. Hope, Ont. for my use in experimental work. The late Col. McAlpyne planted one thousand of my yearlings on his estate at Fenelon Falls, Ont. Two young farmers, Papple Bros., in the Brantford region also started an English Carpathian walnut orchard. In 1935 I moved my Carpathian walnut nursery from Islington to Prof. Currelly's estate, and Mr. L. K. Devitt sold his lot of the trees through the Dominion Seed Co., Georgetown, Ont.

In the States, Mr. Carl Weschcke, a manufacturer in St. Paul, Minn., who in the year 1935 was elected the President of the Northern Nut Growers Association, also got interested in Carpathians. His son-in-law about that time started a walnut nursery on their estate some 30 miles east of St. Paul. In 1936 Mr. Weschcke sponsored my expedition to Northeastern Poland (Northwestern Ukraine) to find the geographical line north of which English walnuts do not thrive in Europe.

My expedition was successful. I discovered that northward from the Pripet River, which flows from west to east toward the Dneiper, English Walnuts could not be found. If I had come across there some English seedlings nearer to the Lithuanian boundary and the Baltic Sea shore, they would have been planted there recently and not before the year 1924.

Farther north, though there English walnuts do not thrive, around the Lake Peipus I came across filberts not as bushes but as large trees. Every fall peasants in that district go in the woods and bring bags of filberts for winter use. Such filbert trees I found also in the Carpathian mountains near the Ukrainian settlement of Vizhnytza in the Province of Bukovina.

West of the town of Sarny and south of the Pripet I came across a grove of 18 ancient English walnut trees. In the year 1648 when Ukrainian Hetman Bohdan Khmelnytzky led a war against Poland those trees already were 70 years old, and they still were bearing in 1936 when I visited that region. Indeed their limbs were broken and they presented a sad sight, but they proved how long the Ukrainian English walnut could live. The seeds of those ancient trees I also shipped to Mr. Weschcke. Beside that I brought to my sponsors thousands of selected walnut seeds, seedlings and scions.

My English Carpathian walnut tree in the back yard of 48 Peterboro Ave. Toronto, Ont., being planted out there from the pot in the spring of 1922 started to produce nuts in 1929. The nuts were exactly to the type: oblong, pointy, inch and a half long, the shell semi-hard, partitions large, the kernel of pleasant taste. It started to produce female bloom when it was 4 years old, but till 1929 there were no catkins of male bloom.

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The crop of the nuts, that year and following years was usually carried away by marauding black squirrels. Other people who got from us the Carpathian English walnut seedlings reported that their plants also started to bear the seventh year or around that. But the Papple Bros. reported that they had a case when a seedling produced by them straight from the Carpathian walnut bore a nut in the second year of its life. On the other hand, there were cases where some Carpathian English seedlings, as well as grafted ones, still produce no nuts though they are 15 years old and over.

I think the cause lies in the soil. On the gravelly hills over Ithaca, N. Y. Carpathian walnuts are slow to bear, even being grafted. The undersoil in the valleys 6 miles north of Pt. Hope, Ont. is not favorable, not only for English walnuts but even for native black walnuts, though very favorable to hickories.
On another hand, north-east of Toronto and near Unionville at the place called Hagerman's Corners on the farm of Mr. M. Artymko there is an orchard of 27 Crath's Carpathian English walnuts over 18 years old, each fruiting now every year. The trees are 25 feet tall, 5-6 inches thick, situated on a knoll of clay, well drained soil, lying open toward the northwest. When the trees were younger, they were subject to attacks of the bacterial disease and their barks were cracked by frost. Now the trees are in nice shape, no trace of the bacterial disease injuries and the frost's scars disappearing. Some of those trees produced a bushel of the nuts each.

Among Artymko's trees there is a tree bearing the walnut of giant type, and the tree-Hutzulian Pointie. The success of the Artymko's farm lies probably in the soil and its high elevation.
There in Toronto Mr. T. H. Barrister, has in his backyard two Carpathian English Walnuts, producing nuts of the giant size-five nuts to a foot. The bacterial disease had touched them slightly, and the tree never has been sprayed.

We should expect that the Ontario Agricultural College at Guelph would find out what is the best soil for English walnuts and what fertilizer to be applied for them. Chicken wire fences should protect the walnut orchard from squirrels and the trees should be sprayed against bacterial disease.
About walnut trees bearing and fertilizer -let us return to their native abode in the Carpathians. There in the village of Peestynka I have come across a large English walnut tree 40 feet tall and about 36 years old which, as I was informed by the people there, never fruited till the First World War. During the war an Austrian horse squadron had put a stall around the tree. The horses well manured the soil around there and since that time the tree was bearing nuts regularly and abundantly when I saw it in 1936.

At Last Success!

The year 1951 should be regarded as the final establishing of the culture of the Carpathian English walnuts in Ontario. The three decades of experimentation have passed leaving a splendid result. The fact is established that the Carpathian English walnuts have become acclimatized in South Ontario. This fall I had an opportunity to examine my walnut trees at many points in the Province. Everywhere I have seen the tree bearing. In Toronto in many a backyard, in Thorold South, in Welland, in Port Colbourn, in Islington, near Port Hope on Prof. Currelly's estate, around Scarboro, Ont. and so on, the Carpathians are in good shape and all are bearing. The more the trees mature, the better they look. On the average they are 20 years old, 20 feet tall and 6 inches thick.

The summer of 1951 in Ontario was more cloudy than usual, and it caused the Carpathian walnuts in this Province to turn out smaller than their size, should be about one quarter smaller.
The people who knew Carpathian English walnut trees in Galicia agree that in Ontario the Carpathians grow more slowly than they do in their native land.

It is not in Ontario, but on the University Farm at Madison, Wisconsin, one of our Carpathian trees is nearly 40 feet tall and bearing. In Galicia I had seen many a Carpathian walnut tree as high as 60 feet….
…..(*To be continued next issue)*

(continued from page 2)

CULTIVAR	ORCHARD	YEAR	2019	2019	2018	2018	2017	2017	2016	2016	4 YEAR	RADIUS	HEIGHT	MATURE	TREES/A	AGE IN	POUNDS/ACRE	CATKIN RATING
L= LAYER, SDG=SEEDLING	ID	PLANTED	CROP	AVER.		AVER		AVER.		AVER.	AVERAGE	IN 2018	IN 2018	SPACING		2019	BY SPACING	2018
																	(MATURE AGE 14)	
ASIAN/QUEBEC SOURCE																		
NORTHERN BLAIS (ORTET)	178H	2012	7.80		5.75		SEED		1.43		4.99	4	7	15 X 12	242	7	1208	fair
ANDREW L	178K	2008	8.00	26.80	0.25	0.83	0.60	0.60	0.20	0.58	7.20	4.5	10	15 X12	242	11	1742	poor
"	180H	2008	18.80		1.40				0.95			5.5	9.5	15 X12	242	11		poor
HETEROPHYLLA SDG	182P	2005	19.55		4.65		2.21		6.75		8.29	7	11.5	15 X12	242	14	2006	poor
DAWN (HET 2) L	184G	2008	19.60		16.30		9.35		8.95		13.55	6	11	15 X12	242	11	3279	fair
ADARA L	188C	2008	12.45	10.58	7.75	5.77	5.47	4.52	2.55	4.03	6.23	5	8.00	15 X12	242	11	1508	fair
"	188D	2008	10.35		5.95		4.59		5.55			4	7	15 X12	242	11		fair
"	192A	2008	8.95		3.60		3.50		4.00			4	7	15 X12	242	11		fair
HETEROPHYLLA SDG	192P	2005	14.60		8.10				7.30		10.00	5	9	15 X12	242	14	2420	fair
NATHAN	194M	2005	21.35		8.80		8.45				12.48	5	9	15 X12	242	14	3020	good
HETEROPHYLLA SDG	200P	2005	8.50		8.50				2.85		6.62	5	10	15 X12	242	14	1602	poor
SASKATCHEWAN SOURCE																		
MARION (ORTET)	204E	2001	6.80		5.60		5.52		3.50		5.36	4.5	8	15 X12	242	18	1297	poor
BARA (ORTET)	200G	2001	9.15		11.00		9.70		5.80		8.90	4.5	9	15 X12	242	18	2154	good
JOANNE (ORTET)	202C	2001	7.55		3.30		2.70		4.40		4.49	4	8.5	15 X12	242	18	1087	poor
FRANK (ORTET)	202F	2001	9.80		7.75		2.87		2.95		5.84	6.5	9.5	15 X12	242	18	1413	good
JULIA (ORTET)	204C	2001	12.20		5.60		5.20		7.35		7.59	5	8	15 X12	242	18	1837	good
SKINNER SEEDLING SOURCE																		
DERMIS (ORTET)	196H	1997	38.90		20.50		22.25		13.70		23.84	10	12	18 X 18	134	22	3205	good
DERMIS L	196D	2013	9.15	12.48	8.80	7.48	3.10	4.10			8.02	4.50	9.50	18 X 18	134	6	1078	
"	196G	2013	15.80		6.15		5.10					5.5	9.5	18 X 18	134	6		
AMERICAN HAZEL HYBRID SOURCE																		
AMERICAN HAZEL SDLG	180N	2010	11.90		6.15		4.55		0.00		5.65	4.5	9	15 X 15	194	9	1094	fair
AMERICAN HAZEL SDLG	186H	2010	18.10		8.10		8.40		0.00		8.65	5	10	15 X 15	194	9	1675	fair
AMERICAN HAZEL SDLG	188N	2010	24.70		9.05		12.00		5.30		12.76	5.5	10	15 X 15	194	9	2470	poor
EUROPEAN HAZEL SOURCE																		
GAMMA L (OREGON)	202G	2010	25.55	27.00	12.45	9.71	7.75	7.94	6.15	6.20	12.72	7.00	11	18 X 18	134	9	1710	fair
"	204F	2010	28.60		7.00		8.13		6.25			6.5	11	18 X 18	134	9		good
FONDA DI GIFONI L (ITALY)	198K	2010	11.10	8.43	3.85	4.38	4.00	3.75	3.70	3.93	5.12	5.00	11.00	18 X 18	134	9	688	good
"	200K	2011	5.75		4.90		3.50		4.15			5	9	18 X 18	134	8		good
EPSILON L (OREGON)	182M	2008	11.15	10.95	7.65	5.45	1.95	3.91	4.25	5.49	6.45	6	14	18 X 18	134	11	867	good
"	184J	2009	12.90		6.00		2.60		6.15			5.5	12	18 X 18	134	10		good
"	184M	2008	8.80		2.70		1.85		2.30			6	14	18 X 18	134	11		fair
THETA L (OREGON)	190C	2010	2.50		1.15		3.05		0.30		1.75	6	10	18 X 18	134	9	235	good
JEFFERSON L (OREGON)	188G	2010	2.10	3.93	0.00	1.38	0.00	0.00	1.55	1.50	1.70	4	6	18 X 18	134	9	229	poor
"	202M	2010	5.75		2.75		0.00		1.45			4	8	18 X 18	134	9		fair
FAIRHILL L (OREGON)	184F	2013	4.60		2.40		1.15		0.80		2.24	3	6	18 X 18	134	6	301	good
LEWIS L (OREGON)	198J	2010	6.10		2.30		4.10		0.00		3.13	4	9	18 X 18	134	9	421	good
GENEVA SOURCE AMERICAN x EUROPEAN HAZEL HYBRID																		
GENE L	182E	2003	39.00	31.50	13.65	12.37	7.05	8.17	14.60	7.43	14.87	9	12	18 X 18	134	16	1999	poor
"	184E	2003	25.10		10.75		6.00		3.05			7	11	18 X 18	134	16		poor
"	186E	2003	30.05		12.70		11.45		4.65			8	12	18 X 18	134	16		poor
SLATE L	188B	2004	30.00	25.64	26.90	12.99	11.10	9.78	9.30	8.78	14.30	8	12	18 X 18	134	15	1923	good
"	198B	2006	25.75		7.55		6.30		7.00			7	9	18 X 18	134	13		good
"	200B	2008	20.70		16.65		8.15		5.45			6.5	9.5	18 X 18	134	11		good
"	200C	2008	20.35		4.35		8.60		8.20			6.5	9.5	18 X 18	134	11		good
"	200D	2008	31.80		13.25		9.40		7.45			7	12	18 X 18	134	11		good
"	206N	2006	25.25		9.25		1.20		15.30			6	11	18 X 18	134	13		very good
ORIGINAL SLATE L	202B	1977	28.80		12.35		15.10		15.15		17.85	9	11	18 X 18	134	42	2400	good late
LINDA L	206B	1977	39.20		8.25		8.85		0.90		14.30	8	13	18 X 18	134	42	1923	poor
CHERYL L	202A	1977	30.20		4.90		4.65		7.95		11.93	8.5	13	18 X 18	134	42	1604	fair
CARMELA L	202P	2008	18.50	23.20	7.40	5.59	0.00	5.33	5.90	3.90	5.16	5	9	18 X 18	134	11	694	fair
"	204K	2008	22.80		3.75		11.15		2.15			5	9	18 X 18	134	11		fair
"	204M	2008	26.15		4.75		10.15		3.95			5.5	7.5	18 X 18	134	11		fair
"	204N	2008	25.35		6.45		0.00		3.60			6.5	10	18 X 18	134	11		good
FAROKA SEEDLING SOURCE TURKISH TREE HAZEL HYBRID																		
ALEX L	184B	2004	21.25	19.84	11.85	7.71	18.65	13.39	7.55	6.75	11.92	8	14	18 X 18	134	15	1603	good
"	184C	2004	24.20		7.90		14.40		8.17			8	14	18 X 18	134	15		good
"	184D	2004	17.60		7.30		11.45		7.25			7	14	18 X 18	134	15		good
"	196B	2006	17.30		4.60		10.50		6.55			7	12	18 X 18	134	13		good
"	198C	2006	18.85		6.90		11.95		4.25			7	13	18 X 18	134	13		good
MATT L	208A	2008	10.45	13.75	3.99	4.83	1.15	2.56	5.85	4.45	6.40	6	13	18 X 18	134	11	860	fair
"	208B	2008	9.75		2.30		1.70		2.65			5	10	18 X 18	134	11		fair
"	208D	2008	21.05		8.20		4.85		4.85			6	11	18 X 18	134	11		fair
ALEX SEEDLING	196J	1999	15.30		8.75		0.00		3.35		6.85	6	8	18 X 18	134	20	921	very good
GRAND TRAVERSE L	186C	1996	5.70		6.35		6.45		7.75		6.56	5	11	18 X 18	134	23	882	good
FARRIS G17 L	180O	2008	15.55	17.35	6.80	6.98	5.40	7.88	6.00	7.88	10.02	5.5	9	18 X 18	134	11	1347	very good
FARRIS G17 L	204J	2008	19.15		7.15		4.80		9.75			7	10	18 X 18	134	11		very good
LISA G	198O	1996	7.10	10.73	7.40	8.15	12.10	13.30	10.85	11.38	10.88	7	9.5	18 X 18	134	23	1463	very good
"	198E	1996	14.35		8.90		14.50		11.75			8	11	18 X 18	134	23		very good
FARRIS GTO L	206K	2008	15.65		2.85		3.20		6.65		7.09	6	9.5	18 X 18	134	11	953	very good
188H SEEDLING HAZEL	188H	2009	16.65		7.45		8.90		2.90		9.00	6	9	18 X 18	134	10	1210	very good
HODGSON SOURCE					NOTE: ORCHARD HAS NO CHELSEA													
NORFOLK (C16) L	178D	2009	11.75	7.93	3.90	2.73	3.95	2.27	6.60	3.68	4.15	6.50	10	18 X 18	134	9	558	good
"	178F	2009	4.10		0.85		0.35		0.75			4	9	18 X 18	134	9		good
"	178N	2009	?		3.45		2.50		6.55			6.5	13	18 X 18	134	9		good
HODGSON C17 L	180I	2009	13.85		6.95		11.30		5.85		9.49	6	11	18 X 18	134	9	1276	good

Highlighted trees represent the most productive annual bearing trees for the 4 year period in each group. Nut quality & blight resistance are also considered in these se
Mature tree age is considered to be 14 years. Trees younger than that would not have reached mature production, so the potential for them is still unknown.

Nut growing in Zone 3 By Rene Haasdyk

Rene here in Edmonton. Just wanted to drop everyone a note about what's happening here with respect to my nut plantings. First of all, the climate here. Summer of 2019 was cool and wet, considerably cooler than average. First frost in the fall was on September 29, which is about average, with a final low in mid January of -38C for a couple of nights. The minimum low doesn't seem to be as critical as the steadiness of the winter since even with those extreme lows the apricots made full bloom when they were supposedly hardy to-30C.

I have a number of hazels, some I bought from Ernie Grimo, some from Bernard Contre in Quebec and some seedlings of C. americana from Badgersett in Minnesota. The ones with the hardiest catkins have proven to be Grimo Andrew which has shed pollen well for the last two years and Grimo Joanne which put on many catkins in the fall of 2019, all of which shed pollen this past spring. At this point I have a few nuts maturing on Marion, Julia, Joanne, and several of Contre's selections. I also have some on the Badgersett seedlings but am dubious of the size. None of them had catkins surviving this spring. I'm hoping that the season will be long enough to mature what I have coming.
I also have two of Grimo grafted black walnuts, the Weshchke has four nuts on presently and surprisingly, planted two years ago and the wood is showing signs of going into dormancy after another cool and dismal summer. I think we had two days managing to reach 30C so far and the long range forecast isn't promising. The other is Archie Sparks 147, no comments on this one yet.
I planted five buartnut seedlings three years ago, two of which had no winterkill this year and I discarded the other three. Also have a Bear Creek butternut that is proving hardy. I'm hopeful of it. I planted three Dooley walnut seedlings two years ago, two of which showed typical regia leaf structure and winterkilled quite severely and were discarded. The remaining one winters well with very little dieback, the leaves of which show definite black walnut characteristics, almost butternut like, so will have to see if it's really from Dooley seed. That's all I have…….. Regards Rene

Continued from page #3)

to affect the resulting integrity of the recovered nut meat. I tried it from all three directions to mixed success, possibly due to the great variation present in nut morphology and source tree. Black walnuts definitely have three different axis to apply force to. Top to bottom, wide side and narrow side.

Of note, the previously dried and stored black walnuts I used for comparison purposes had been stored in a sealed container with uncontrolled temperatures for 12 months. The nut meats were still quite tasty and untainted or rancid.
Yield factoid – I found that ~7 bushels of green black walnuts gives about 1 bushel of cleaned nuts. When I cracked the nuts I got a yield of about 11% nut meat on a small sample.

All Nuts dried over house furnace vent.

Editor's note: Small black walnut producers will soak fully dried black walnuts overnight before cracking to get larger nut pieces. It is important to dry the nut meats after cracking them moist to prevent mold and rancidity. The nut meats need to have 6-8% moisture content to keep safe for consumption.

The American Chestnut Research and Restoration Project **taken from *The Bur* newsletter of the NY State chapter of American Chestnut foundation**

The process begins with immature nuts gathered approximately four weeks after pollination. Because of a low success rate, the more nuts collected, the better. The nuts are brought to the Plant Tissue Culture lab at ESF, soaked in 70% ethanol for 30 seconds, immersed in 50% bleach for 5 minutes, and finally rinsed with sterile distilled water three times. After that, the nuts are brought to a laminar flow hood, which is a cabinet designed to blow sterile air towards the front opening. The hood is equipped with a HEPA filter
(think of a home air purifier), which stops microbes larger than 0.5 microns from entering the work area. In the hood, using a stereo microscope, the nuts are cut in half horizontally. The pointed half is carefully cut opened exposing 10 to 12 premature zygotic mbryos. These embryos are placed on a nutrient rich medium and stored in the dark until new embryos grow. Unfortunately, most will either die, become covered in fungus or bacteria, or turn into callus (undifferentiated cells). Only approximately 1% of the embryos will multiply into more embryos. These new embryos are clonal and called somatic embryos because they formed from cells not nomally involved in embryo development.

Once a somatic embryo cell line is developed it can be transformed with the gene of interest, in this case, the oxalate oxidase (OxO) gene. The transformation is done using *Agrobacterium*, a bacterium that is a natural genetic engineer and was involved in genetically modifying sweet potatoes over 8,000 years ago. The bacterium is grown in a liquid nutrient medium and then mixed with the American
chestnut somatic embryos. After one hour of mixing, the embryos are transferred to a desiccation plate, which is a Petri dish containing a slightly moistened filter paper, and then placed in the dark for two days. Afterward, they are transferred to a semi-solid medium containing antibiotics, which will remove the *Agrobacterium*.

Two weeks later, they are transferred to a temporary immersion system that covers the tissue every four hours with a liquid medium containing antibiotics to get rid of cells that were not transformed. The embryos stay in the temporary immersion system for four to six weeks, with the medium being changed every two weeks. Surviving embryos that grow and multiply are considered individual events and are checked by Polymerase Chain Reaction o confirm that the new gene was incorporated into the chestnut's genome.

The next step is to regenerate the event(s) into shoots. This is done by transferring them to three different nutrient rich media during a three to six-month time period. Once a shoot emerges, it is multiplied and tested for relative copy number and expression levels. Only events with low copy numbers and medium to high expression levels will be kept. These.events are multiplied in a semi-solid medium and then rooted *ex vitro* (out of culture). The rooted plantlets are placed in a growth chamber until new leaves emerge, then they are transferred to a greenhouse for two to three months, and finally are planted in the field.
It can take 3 to 4 years for field planted trees to produce pollen. To speed up the process, 2 to 3 month old plantlets from the greenhouse can be brought to a high light growth chamber instead of the field.
In many cases, pollen is produced in less than one year. The pollen is collected and used to pollinate Mother Trees in the field.
Nuts are collected roughly eight weeks later, completing the cycle. They are tested for the OxO gene, which is expected to be inherited by approximately half the nuts. Those that test positive for the gene are planted in either pots or the field to get ready for distribution or testing. The process takes a large number of people many years to complete.

From Seed to Seed: The Development of a Transgenic American Chestnut Tree
By Linda McGuigan, ESF Plant Tissue Culture Lab Manager

Join the New York State Chapter of The American Chestnut Foundation
Visit www.acf.org, call 828-281-0047, or mail the form (below) to:
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I would like to hear from any SONG members that can supply me with shelled nuts, nut oils, or nut tree syrups. In shelled nuts, I am particularly interested in beechnuts, butternuts, and hickory nuts but I am open to suggestions provided that the products are natural and unpolluted. I am also very interested in buying tree syrups from black walnut, butternut, and hickory trees.
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