

Chestnut Tree

*The Indiana Chapter of
The American Chestnut Foundation*



NUTRITION FACTS: DID YOU KNOW?

Chestnut Flour vs. Wheat Flour

- * 1/4 of a cup of wheat flour contains 114 calories,
 - * 24 grams of carbohydrates, 1 gram of fiber,
 - * 3 grams of protein,
 - * and 1 gram of fat.
- 1/4 of a cup of Chestnut Flour contains
- * 98 calories,
 - * 21 grams of carbohydrates,
 - * 1 gram of fiber,
 - * 3 grams of protein,
 - and 1 gram of fat.

President's Corner,



Greetings! My name is Ben Finegan and I am the newly elected president of the Indiana Chapter of the American Chestnut Foundation.

Trees fascinate me. I have always had a love of nature and am passionate about the chestnut cause. I hope that one day my children and grandchildren can walk under their shade. Together I'm confident we'll get there! I welcome questions, ideas and stories so please do not hesitate to contact me! I also enjoy fishing and hiking. I studied biology at Hanover College and live with my family in Noblesville, Indiana.

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Chestnut Reintroduction Committee Report
Mike Saunders, Chair

At the Annual Meeting in December 2008, the Indiana chapter formed the Chestnut Reintroduction Committee consisting of several interested members that attended the event. This committee is charged with developing dissemination and reintroduction strategies in advance of the planned release of Indiana BC₃F₃ families in approximately 2020.

In October 2009, largely due to delays from National in releasing a nationwide reintroduction plan, we held our first meeting to brainstorm possible scenarios. Obviously, the committee felt that the release will need to take a multi-pronged approach through afforestation plantations and reintroductions into native stands, but the details will still need to be worked out on how to spatial array the plantings around the state.

In terms of dissemination of seed through the membership, we did agree upon a general approach. We are packaging these seedlings in mixed species lots with black cherry, tulip poplar, and either sycamore or white pine, depending on availability. This mixture was chosen because these species all have similar growth patterns and, as a mixture, should be more resistant to diseases, pests or site conditions that would otherwise destroy a single-species planting. In other words, if tulip poplar gets eaten by bugs or does not grow well in your field, there will be at least 3 other species in the mix that might. Each lot will have 100 seedlings (25/species) and cost \$50. Members may order as many as they like, but we will limit distribution to 1 lot each until we have satisfied all interested members; we then move sequentially back through the list giving everyone their second, third, and so on seedling lots. You should have approximately ¼ acre (8' x 8' spacing) available for each lot that you request. This spring we have a very limited number of seedling packets (16).

These plantings with pure American Chestnut serve three purposes. First, they will give everyone an opportunity to get "practice" growing chestnut. Some of us have tree planting experience and tending experience and some us do not. Second, these plantation will help us with determining what sites are best suited for our reintroduction efforts. We assume that members will plant these on a broad variety of sites. Therefore, we will keep track of the locations of these plantings and hope to use them for a retrospective study on chestnut growth down the road. Third, these plantations will serve as a test run for the BC₃F₃ stock in that we can interplant the blight-resistant material when it comes out. This will allow for a natural cross, a BC₄, which in 30 years or so can be used for further chestnut breeding efforts.

If you are interested in growing and maintaining an American Chestnut plantation, fill out the order below. Payment to Indiana Chapter of The American Chestnut Foundation is required at time of order. Seedling lots and planting guides will need to be picked up in person at Purdue University in West Lafayette on April 14 or April 21. Zonda Bryant will be in charge of distribution of the packets. Please email Zonda at birgez@purdue.edu, or call 765-366-9126 with any questions. **THE DEADLINE FOR ORDERS IS MARCH 1!!**

2012 Chestnut Seedling Order Form

Name: _____

Address: _____

City, State, Zip Code: _____

Phone: _____

Email: _____

Lots will consist of 25 American Chestnut, 25 black cherry, 25 tulip poplar and 25 sycamore or white pine.

Number of seedling lots requested: _____
X \$50/lot

Total: _____

Please make checks payable to Indiana Chapter of The American Chestnut Foundation (IN-TACF). Mail order form and payment to: Bruce Wakeland 10560 East St Rd 8, Culver, IN 46511.



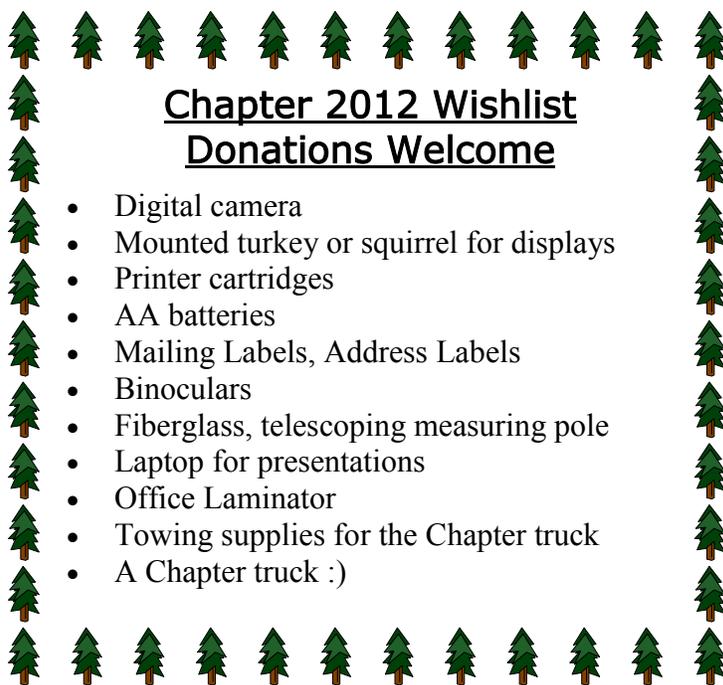
Secretary Notes:

Indiana Chapter of the TACF meeting, January 14, 2012, at the Wright Center at Martell Forest, West Lafayette, Indiana. The meeting was called to order at 10:10 a.m. by president Bryant Marsh. Twenty one attendees were present. Jim McKenna, operational tree breeder at Purdue was introduced and proceeded to explain the breeding program to obtain resistance in chestnut. He pointed out that the first crosses were made between pure American and pure Chinese chestnuts for the F1. Then the F1 was back crossed to a pure American chestnut, giving us the BC1, which was again back crossed to pure American, which gave us the BC2. BC2 pollen from national from known resistant trees outside of Indiana was applied to Indiana American chestnut female flowers to obtain the BC3. At each step along the way, seedlings are inoculated with a mixture of both extremely virulent and weak strains of the disease organism. Only those showing good resistance are included in the next round of crossing. We now are at the stage where we have 2000 BC3 seedlings at three sites in Indiana. Resistant BC3's are crossed with other BC3's to obtain BC3F2's. Obviously, this is a long-term continuing process. This last step includes plantings at SIPAC (Southern Indiana Agricultural Center near Jasper in southern Indiana) and Potawatomi Park in northern Indiana. The close-spaced trees will eventually be thinned to the one most resistant tree per plot and those remaining trees will be allowed to interbreed which will produce BC3F3 seedlings which theoretically will have the resistance of the Chinese parent and the form of the American parent. Each state will produce the BC3F3's. In Indiana we now have the 1200 seedlings required for the first of 10 blocks (600 at SIPAC and 600 at Potawatomi). So the first step of 1200 seedlings is complete, the second step has 660 seedlings available, and the third step has 380 seeds planted in the nursery. We have no parents selected for steps 4 through 10. It is thought that by 2020, we should have fully resistant seedlings, but it will be 2030 before we have all 10 steps finished. As you can see, this is an incredibly detailed, difficult and long-term set of goals, but we are certainly making headway. Jim emphasized the importance of having genetic diversity, as well as adaptability of the various crosses to our Indiana climate and soils.

A two-acre planting with seedlings from National was made on the Hoosier National Forest this past spring. However, only 15% survived due to the extreme amounts of rainfall which induced root rot. This planting was to see how chestnut reacted to forest-type sites and was a clear-cut area with all trees and shrubs removed.

Mike Saunders, Assistant Professor of Forestry at Purdue, provided us with insight into on-going research which focuses on how to restore chestnut to the landscape. He suggested going to the TACF website where you will find his paper on "Planting and Growing Chestnut". It explains how to grow chestnut on your land. Mike talked about the various research projects that he and his students are involved in as well as some of the other Purdue faculty. The major ones include:

1. Caleb Brown is using hoop houses to induce shade and drought on chestnuts and oaks to compare chestnut's ability to compete under stress. However, the hoop houses got too hot this summer and "cooked" a lot of the trees, so most of this work will have to be repeated next summer. He is also studying the stomates on the underside of chestnut leaves and com-



Chapter 2012 Wishlist
Donations Welcome

- Digital camera
- Mounted turkey or squirrel for displays
- Printer cartridges
- AA batteries
- Mailing Labels, Address Labels
- Binoculars
- Fiberglass, telescoping measuring pole
- Laptop for presentations
- Office Laminator
- Towing supplies for the Chapter truck
- A Chapter truck :)

paring their functioning to stomates in oak. Stomates are important because this is where CO2 enters the leaf, oxygen expels from the leaf and water vapor transpires from the leaf. How the stomates function under stress is a large factor in determining how trees compete and survive.

2. Kate Zellers is working on root rot-- particularly Pithium. Fortunately, the spread of the devastating Phytophthora cinnamonia is limited by our cold winters and should not be a problem in Indiana, but other root rots are a large problem.

3. Chris Zellers is working on leaf display in chestnut. He is trying to find out how much shade chestnut can endure in the understory. However, his planting was pretty much destroyed by a tornado that knocked down the deer fences and allowed deer to eat most of his seedlings. It would seem that working with chestnut involves a considerable amount of: "If you plant the trees- disaster will come".

4. Harmony Dagleish is studying seed predators--particularly weevils. He is x-raying seeds to find the amount of weevil damage. Then he germinates the seeds to see percent germination with various levels of damage. Acorns are damaged by the same weevils, but acorns will still germinate in-spite-of more damage than chestnut. In addition seedling growth from damaged chestnut seed is reduced.

5. Mike Saunders and Rob Swihart, (Dept. of Forestry and Natural Resources department head) are looking at chemical deterrence to chestnut pilferage by rodents in the field. Chestnuts and acorns were treated with various mixtures of paint, glue, Thiram, cap-sacin and vermiculite (rodent candy). They are being planted at two depths on several sites. Nails were placed beneath each seed so that in the spring, metal detectors can be used to find where any pilfered seeds were located—a very clever idea!

Also 10,000 chestnuts were planted at Vallonia State Tree Nursery to be sold to landowners.

Work has been started with the endangered wood rat which fed on chestnuts extensively. The lack of chestnuts is blamed in part for its impending demise.



Secretary Notes, contd..

Bryant Marsh reported concerning the restoration meeting he attended June 17, 2011 in Athens, Ohio. They talked about site selection for chestnut, the ecological risks that is, which species will chestnut replace in the natural forest, problems with Phytophthora and the affects of wildfires on chestnut reproduction and establishment.

A discussion ensued concerning the problem of not being able to see the form development in young chestnuts, and it was brought up that there is another Chinese species of chestnut called mountain chestnut which has excellent size and form, which is also very resistant to the disease and could be used as a parent in the future. However, so far, China has not granted access to this species. Another question was brought up concerning genetic engineering, and the insertion of resistant Chinese genes into American. According to Mike, the New York chapter in conjunction with Syracuse University and the University of Georgia are inserting four genes for resistance to obtain a transgenic chestnut. This is a work in progress, obviously. Bruce Wakeland pointed out that he has seen BCF2 crosses in Pennsylvania 30 feet tall at 10 years old so hopefully, most of our BCF2's will have excellent form as well as disease resistance.

Bruce Wakeland gave the treasurers report. There has not been a lot of activity. We get a kickback from national of 15% on our dues. Our expenses were only \$541.20 in the last year plus we provide a donation of \$1000 to HTIRC, which helps defray their cost of vehicles, student labor, herbicide, etc. used in caring for the chestnuts at Purdue and elsewhere. Presently we have \$9,579.12 in checking and \$10,899.90 in a CD for a total of \$20,479.02. Discussion followed on ways this money could be spent in the future. It was pointed out by Bruce that there is a pledge from three donors of \$6,500 per year for five years. The hope is that this will help pay for a full time position at Purdue, which we will share with Ohio and Kentucky. Perhaps additional funds can be obtained from national. We'll try to get this started in 2012. There is even a possibility that Ted Turner is going to donate a considerable sum to the national which would help in this sort of arrangement.

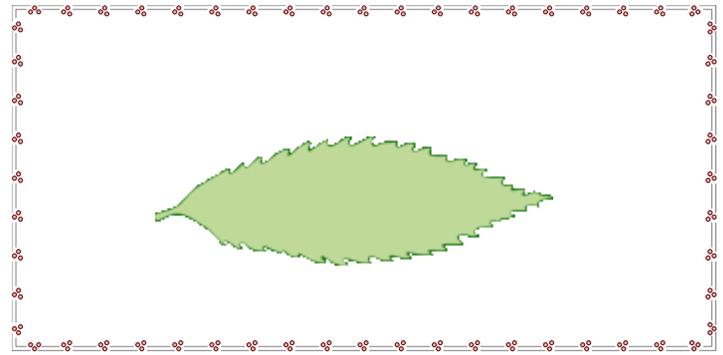
A motion was made by Mike Saunders to accept the treasurers report. It was seconded and approved.

Bryant Marsh said that the hog roast at Potawatomi Park in the spring attracted 27 people and went very well.

Ben Finegan was nominated for president and Walt Beineke was nominated for secretary. Both were elected to those positions.

A discussion of how to handle seedling sales to members was initiated. Twenty five American chestnut seedlings plus several other species are included in each bundle. A tree seedling coordinator is needed to coordinate making the bundles and handling the sales. It was decided that this process should start earlier in the in the year so that the orders are in by October. Therefore, forms need to go out to members in July or August. We sold 16 bundles this past year, but many more will be available in the future. The meeting was adjourned for lunch at 12:05. Lunch was provided by Sally Weeks, which was over the top excellent. She probably should consider an additional career as a caterer. She asked us to donate two dollars, but it was certainly worth \$15.

Walter Beineke, Secretary



Mike Saunders and daughter at the Branch Event hog roast in September.



Walter Beineke, IN TACF's new secretary



60 years of Chestnut Interest

Dr. John Shafer of Logansport has had a life-long love of plants, beginning at his grandfather’s knee in the garden, and then with his father in the timber business. He fostered this interest at Dartmouth College where he received a degree in Botany and later at Cornell, where he completed a Ph.D. in plant physiology, with a minor in plant breeding. The degree in plant breeding began his affair with chestnuts very early on in the quest to breed resistance to chestnut blight in America. As a matter of fact, John was in on the ground floor, when genetic manipulating (double cross corn, etc.) had just begun in agricultural crops. Have I mentioned that John is probably Indiana’s senior-most TACF member—he is 100 years young!

While John was a graduate student at Cornell, he worked in the genetics department on experimental corn and met many of the important plant breeders of the time. Some of the now common breeding techniques were just being developed. John met several times with Charles Burnham and Arthur Graves, discussing the breeding techniques of the time, and began his own breeding program in east Tennessee where his father’s sawmill was headquartered. Some of the earliest backcrossed trees of that era were planted on the Shafer property.

The founder of The American Chestnut Foundation Charles Burnham, used the idea of crossing two chestnut species to move resistance from the Chinese to the American. John was involved in the Northern Nut Grower’s Association before TACF came along, and wrote an article about chestnuts. Burnham read the article, and contacted John about possibly cooperating with him in his chestnut breeding program. John received around 100 F1 hybrids which he grew in the Logansport area. Several of those trees survived for quite some time.

Today, John is pleased with the work Fred Hebard is doing at National, and commends him for fast production of next generations. But he does have some ideas that conflict with the national chapter overall. He was taught a long time ago that if you backcross too many times, you can loose some desirable traits, like root rot. “When you get what you want, stop breeding” he was taught. He also believes that backcrossed trees should have been planted out as they were produced, for we would now have several decades of trees throughout its range. John is also not bashful in telling you that he thinks there are too many restrictions on the backcrossed trees. Signing a germplasm agreement, he says, is like having a tree “on loan” to a person, which is one restriction too many. Trees aren’t things to be loaned out.

Recently, John donated all of his chestnut materials he has saved over the years in TACF, including every newsletter and publication, to our Indiana chapter. Those are currently stored at Purdue University’s West Lafayette campus. I must say that it was a delight to interview John for the newsletter, and if you ever want to talk chestnuts with a plant breeder, John will share his knowledge (and opinions ☺) with you.

Sally Weeks



John Shafer at his home in Logansport, IN

Chestnut nutrition facts

Chestnuts, cooked/4 ounces	
Calories	149
Total fat (g)	1.6
Saturated fat (g)	0.3
Monounsaturated fat (g)	0.5
Polyunsaturated fat (g)	0.6
Dietary fiber (g)	5.7
Protein (g)	2
Carbohydrate (g)	32
Cholesterol (mg)	0
Sodium (mg)	31
Vitamin C (mg)	30
Potassium (mg)	811
Magnesium (mg)	

Check out our website! Although it is in its infancy, we will post work days, meeting dates, and any other pertinent information there. FIND A COLOR COPY OF THIS NEWSLETTER THERE!

<http://www.agriculture.purdue.edu/fnr/intacf/>



IN-TACF Breeding and Restoration Activities—2011

by Jim McKenna and Mike Saunders

With support last year from the Duke Energy Foundation and some other funds from TACF, the IN-TACF, and the HTIRC at Purdue, we were able to accomplish most of our objectives from 2010. Here is a summary of the progress and status of those projects:

Establishment of BC3F3 National progeny tests:

The first planting in Indiana on the western edge of the natural range of chestnut consists of 606 trees comprised of the following types:

- 322 BC3F3 Fully resistant American chestnuts from 13 TACF families from Virginia
- 60 BC3F2 Indiana 15/16 American chestnuts from IN-TACF Indiana
- 66 Pure American chestnut trees - Indiana
- 50 Chinese chestnut trees - Purdue
- 108 Native oaks around the edges (black, scarlet, and northern)

The planting went in very well and the help and cooperation between the Hoosier National Forest staff and Purdue was extraordinary. The site was cleared of non-merchantable standing timber in February and the trees were planted the first week of April. Unfortunately, 11 inches of rain fell for 3 weeks after planting and many trees died due to water-logging. By mid summer, we estimated that we had lost ~ 85 % of all trees. Soil samples were taken to the Plant Diagnostic lab at Purdue and water logged roots and the seedling pathogen *Pythium* were identified as the probable causes of mortality.

Because of our large investment in labor and materials for clearing and deer fencing this one acre site, we will use some of the seedlings we have on hand for the 2nd National Trial to replant there in 2012.

We currently have 439 BC3F3 seedlings from 13 TACF families in the Vallonia nursery for replanting the first Hoosier trial and establishing a second Hoosier NF trial. The 2nd HNF site is a better drained upland site that is currently being cleared. Soil samples tested this summer revealed no *Phytophthora spp.* present.



Figure 1. Planting the 1st Hoosier Ntl. Forest site, April 2011

Monitor and test a control strategy for ambrosia beetle:

With the additional funding we received, we were able to hire a half time technician in early January to take charge of monitoring and spraying for ambrosia beetles. Our main breeding orchard, located just west of the main Purdue campus at the FNR Farm has been particularly hard hit with damaging Asian ambrosia beetles. This year, we were able to mitigate and minimize the loss of trees and fruiting limbs by spraying the entire block every 3 weeks from late March until early September. Only 3 small seedlings and a few sprouts from last year were attacked this year. In addition, we were able to provide weed control and fertilization of the trees and the entire orchard grew very well.



Figure 2. Spraying stems at the BC3 block at Purdue to control ambrosia beetles.



20 members were present at the January 14 meeting of Indiana TACF at the Wright Center, West Lafayette, IN. Pictured is Jim McKenna giving an overview of the breeding progress in 2011.



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Growth of silvicultural research plantings in Indiana:

We were able to measure and summarize the growth and health of 4 different silvicultural out plantings this year. The largest planting is on the Whipperman Farm near South Bend, IN.

South Bend, IN	Species		4-Yr Height (cm)	N	Survival (%)	Browse (%)	Rub (%)	Rabbit (%)	Tip Dieback (%)
	Am. chestnut		240 (75)	177	89	9.6	3.4	0.5	1.1
	Black cherry		249 (78)	164	86	12.9	8.6	0.6	1.2
	Silver maple		325 (120)	168	86	11.9	13.7	0	11.9
	Tulip poplar		310 (94)	177	95	0	6.8	0	3.4
West Pointe, IN	Species	Fert.	2-Yr Height (cm)	N	Survival (%)	Browse (%)	Rub (%)	Rabbit (%)	Tip Dieback (%)
	Black cherry	Yes	253 (69)	49	96	0	2	10.2	0
	"	No	230 (58)	46	92	2.2	2.2	4.3	0
	Am. chestnut	Yes	204 (33)	45	88	0	13.3	4.4	0
		No	179 (45)	36	73	2.8	0	13.9	4.4
	Silver maple	Yes	331 (57)	50	98	4	0	2.2	0
		No	291 (46)	49	98	8.2	2	4.1	
	Tulip poplar	Yes	247 (41)	50	98	0	2	0	0
		No	175 (43)	51	100	2	3.9	3.9	0
	All spp.	yes	259 (53)		95	1	4	4	0
	All spp.	No	219 (54)		91	4	2	7	1
Leopold West, IN	Species		3-Yr Height (cm)	N	Survival (%)	Browse (%)	Rub (%)	Rabbit (%)	Tip Dieback (%)
	BC3 chestnut		82 (31)	33	80	76	12	0	55
	Black Cherry		88 (22)	32	78	81	19	0	38
	Butternut		51 (17)	28	80	76	12	0	76
	N. Red oak		82 (24)	38	93	82	11	0	18
Leopold East, IN	Species	Yr	4 & 5-Yr Height (cm)	N	Survival (%)	Browse (%)	Rub (%)	Rabbit (%)	Tip Dieback (%)
	Am. chestnut	2007	136 (51)	24	80	0	0	0	17
		2008	116 (23)	3	75	0	0	0	0
	BC3 C-nut	2007	123 (60)	72	91	3	0	0	22
		2008	-	-	-	-	-	-	-
	Butternut	2008	76 (24)	5	100	0	0	0	60
	N. Red oak	2008	32 (10)	4	57	0	0	0	100
	Black Walnut	2008	90 (4)	5	100	0	0	0	40

Six other plantings were measured but the data has not been analyzed at this time. They include two 2-year-old mixed plantings of chestnut, red oak, and sugar maple in two forested sites with midstory removal treatment near Purdue; a 5-year-old chestnut, black cherry, and northern red oak competition study at Purdue; 2-to-5-year old enrichment plantings of chestnut into clear cut sites at the Crane Naval base in Dubois County, IN; and two 10-year old pure American chestnut seed orchards in northern Indiana.

Mine-site reclamation research with American chestnut at the Indiana Department of Natural Resources Dugar site near Linton, IN:

This project is investigating the effects of soil replacement method following surface mining on survival and growth of a mixed species hardwood planting, which will include 800 American chestnut seedlings to comprise 25% of the planting mix. Soil replacement methods under study included the currently employed grading treatment compared against a non-graded, loose-dump treatment. Seedlings will be monitored for survival, height growth, diameter growth, biomass accumulation, root development, and moisture stress. Field work on this project has concluded as of Fall 2011, and publication of final results will likely proceed in mid-2012 pending completion of all laboratory and statistical analyses.

An additional component of this project is an investigation of the phytotoxicity and residual herbicide activity associated with weed control for establishment of American chestnut and oaks on reclaimed mine sites. Our Dugar site has been impacted by *Sericea lespedeza* which is a native of eastern Asia and is a problematic exotic invasive forb. This project is designed to examine the effectiveness of metsulfuron methyl (Escort™) for controlling competing vegetation when applied at different times in the planting cycle (pre- vs. post-planting) and at five different rates. Both immediate and residual effects of herbicide treatment on the competing vegetation community will be monitored, as well as any potential effects on planted seedlings, with an emphasis on determining the compatibility of such weed control practices with American chestnut plantations and identifying optimal application rates for use therein. Effects on seedling nutrition, physiology, growth, and survival will be monitored. This project is still in the initiation phase, and initial pre-planting herbicide treatments were applied in August 2011, with planting and post-planting herbicide treatments scheduled to occur in 2012.

Additional Plantings

We provide 1,200 BC3 seedlings to Bryan Kaleb of Duke Energy to include in three reforestation and mine-site reclamation plantings in 2011. His site at Cayuga was planted at the end of March and had a lot of losses due to prolonged saturated soils like our Hoosier NF planting. His site at Universal reclaimed mine site fared better though as it was a better site with better drainage, and planted later. One more site at a TNC property had not been revisited by the time this report was written.

Together with the National TACF, we helped establish 3 plantings of BC3F3 fully resistant chestnut with the Cincinnati Department of Parks planting a pair of trees at three different public arboretums. Initial reports this past summer found the trees to have survived and grown well. These plantings will allow the public of Cincinnati, OH to see American chestnut trees up close.



Continue general breeding efforts:



Figure 3. Jason Cook cross-pollinating a Burk x AB185 tree at the Jackson Washington State Forest in June 2011.



Figure 4. Jim McKenna cross pollinating IW2 x CL50 at the Goshen College Merry Lea BC3 orchard in July 2011.

We continued to make progress on breeding two new lines of BC3F2 seedlings. We have 390 seedlings in the Vallonia nursery for our 2nd line [(IW2 x CL50) X (RL3 x GR97)]. With the 370 seedlings in the nursery, we will be able to plant 2 blocks of 120 seedlings at the Potawatomi northern orchard and 1 additional block at the SIPAC orchard next spring.

This year, we produced an additional 580 seed and are hopefully 75% toward our goal of 1,200 seedlings per BC3F2 line. This year, we were able to begin a 3rd BC3F2 line [(Burk X AB185) x (RL2 x GL367)]. We choose the 3 most resistant parents of the Burk x AB185 family at the Jackson Washington State Forest BC3 orchard and we produced 370 seeds. We harvested a great number of seed from each of our 4 BC3 orchards along with seed from nearly two dozen BC3 families and a large number of pure American families. In total, we sowed 5,000 BC3 and ~ 3,000 pure American seed in the Indiana Division of Forestry nursery at Vallonia. Over 5,000 additional pure American seed were

provided to researchers conducting wildlife and ecology studies at Purdue. TACF cooperators should be able to obtain extra 1-0 bare root pure and BC3 seedlings from us in 2013.

We took some time this year to mow and clean all plantations of unwanted hardwood competitors. In addition, we did fence repairs and rogued out blight-susceptible individuals from the FNR BC3 orchard in August.



Figure 5. The FNR BC3 Orchard at FNR in June of 2011.

In addition to addressing these objectives last year, we dedicated some money towards insecticidal control for ambrosia beetles on our Purdue BC3 block. These beetles are causing limb mortality among our select individuals, which significantly lowers nut production, and killing BC3 individuals that have yet to be screened for blight resistance. Dr. Matt Ginzle of the Department of Entomology helped monitor the beetle population and implement new control strategies.

We will repeat the crosses made this year to add additional individuals to our 2nd and 3rd BC3F2 resistant lines. In 2011, we hope to begin crossing a 4th line if two new parents, in particular a large and heavily flowering, resistant female mother, can be identified. We will also continue inoculating BC3 seedlings at our Merry Lea site in NE Indiana and would like to inoculate several new families at Purdue. Additionally, we would like to inoculate BC3F2 seedlings at the Potawatomi Park in northern Indiana starting in June of 2011, assuming that individuals are large enough.

No new inoculations were made this year. With the growth gains we made by controlling ambrosia beetle problems in the FNR block, we are now poised to be able to inoculate many trees next year.

Assist with the Indiana Chapter's American chestnut distribution:

On March 12 of 2011, the IN-TACF met at the Jasper-Pulaski IN-DNR Division of Forestry nursery near Medaryville, IN and packed trees for distribution to IN-TACF members. 35 bundles were packed, each including 25 American chestnut, 25 white pine, 25 black cherry and 25 tulip poplar trees all provided by the IN-DoF.



Indiana Chapter
The American Chestnut Foundation

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The Indiana Chestnut Tree Newsletter



Breeding Update, contd. From page ?

Duke Energy Grafted American Chestnut orchard

The purpose of this orchard is to provide a new set of pure American chestnut germplasm to allow for a new BC3 line with a different and more resistant Chinese parent to increase the long term genetic diversity of resistance for Indiana BC3 chestnut planting stock. Our initial excellent first year survival and growth of this block is lower this year. We lost 10% of the trees during the winter and an additional 35% during the 2011 growing season. Chestnut has delayed graft incompatibility and that in combination with some ambrosia beetle damage has taken out so many trees. To offset these losses, we are going to fill in empty spots in the orchard with seedlings in 2012 to increase the stocking and ameliorate grafting losses. We have a few new American seedling families this year and others that we collected this fall to direct seed. We expect some more grafts to fail each year but the trees that have survived are doing well and may yet produce enough flowers to establish a new BC3 line.

Chapter Calendar: 2012

- Feb 1 - IN-TACF Newsletter Distribution
- Mar 1st- Seedling Orders Due!
- Mar 13 - Pack trees at the JP Nursery
- Apr 14 - Distribute Trees at Purdue (1st chance)
- Apr 21- Distribute Trees at Purdue (2nd chance)
- June 10-20—Tree inoculation at Purdue University
- Sept late/early Oct.—harvesting
- Nov—rate inoculated trees @ Purdue University
- Dec-IN-TACF Meeting - (the tentative date—not set in stone yet)