

gent management, blight can be minimized. "We are getting much higher yields - 65 pounds of nuts per tree in some cases, and their larger nuts are more marketable," he says. "Consumers want them. We can't grow enough. We need more growers." Being a profitable chestnut grower is a real prospect, but Fulbright cautions that there are things to consider before jumping in with both feet.

Read more about growing chestnuts on Pages 4-5.

UNDER INSPECTION: Shelle Kauffman, Chestnut Growers Inc. manager for the remove any nuts that should not go to consumers.

Microphy Party Mathian Farmer Michigan chestnuts Michigan chestnuts ed nearly to market, and a second away," Fullyight says, strenging D and Joe's The coop University's Res. BLACKWELL that my hade Centor in Clarks a start talling in late has about 35 memb men latera Cleans seeding. September hat their resolvedly incerve between 32 and 33 a pro-tor the Calonial cultiver in the lar ade, as they need atom inac weeks coming in cold storage to and weight. They also have an h Once those trees QUALITY CHECK: Shannon Hughes, who works com MSI and Dennis Fulbright are on the chestrul inspectors line pro-2015 yield lour. Ibanka to a peeling ma- state are exports from Raly and chais the nonpeold Matsent Nut etweshers in Europe Pullinght a Tource farm with a Producers Council purchased asysthese unergenerity which mould be not Statking. Aller yields increased under a structure and post of the council purchased of the structure of th field was alightly down that to winter damage tax TOPS. EUtor culdalanaSe tally. Some cheatouts are also greatised markets with deletiont great www.stock.However. "R" made into chips, while others are or worm infected product." ind and freezen. Somanners are beginning to go This is a positive industry, reform to the chestual, and with adic across the state? and we've able to raise the price a quality product, we are able to fair-runt, each year because of nor-quality," draw mann interest," he says, operation ways Blackwell, who points out Chestroots have a longe ethnic verting is that some retailers reference the conformer base, with large sales there in chestenis. If tak to cooperative in advertising as its into the Dermit area. "They will anyone that has an inferent in hirty 2006 to 32000 percent." BATH Chestruit up 9 reater than 30%." Most of the crop poor freah market, but some ICADY: Chestinuls produce two to three nuts reads a burr, which support the reactive with rollers shows chestinuls to largest roop to the ground when right. Meat chestnots sold in the tree months US Postal Service grouvers. There's more demand to produce glutestree for light, By the bash y you will have a warn o investment from your to plansing. By the sixth y will be in full production 30 to 50 pounds a ten of choice bacases they are not produces. Chorada these, to event dramed andy, where the pP to 50 pounds of other cultivars-However, the Colonial is ter dobacens Chickens breis lao enit chickens breist lao enit chickens breist lao enit chickens breist lao enit bai laver bari canord primi lao laver bari canord primi lao enitaria da la enitaria transferi la la enitaria da la enitaria transferi la la enitaria da la enitaria transferi la la enitaria da la enitaria transferi la enitaria da la enitaria degenera. Basci 4 pusto becarso enitaria In Wiscoman) they are not able to good cheetends ske we can. Really, these is no place in the world with a contributiat clenake mult fairns, cheethnat along the 45th paratter other then right Chestral trees in Mo Chestral trees in Motigan are sourced for about \$25 each from Fornest Keeling Nursery in Missouri, which grows a 8 ting techniques contral called controllence, he says the this becomes pession and the Notified the only good option in Michigan. The Marigoule, a outhout front France. In more writer heatly than Colonsal and has good yields, Fulbroght align: What to In Missouri, Wick grows a 8-brows available that grows the beat chance for sorveal. In the beginning of the realblock second year, it is gothed with the cleaning cultive of choice.
The Colosal cultiver has been the maintain in Michigan know before you plant e." Futbright says. Chestnuts Am # Gotting started HE chestraits a good MacSterraneen tree, which New trees are planed in the full, and Fulbright advises to to not a wate decision Noung trees, in particular, are subceptible to an injury called numeraid, which hap-pens is the winter when the nor Dentitie Futbright robatis they love the field. However, Fullright cautores, Kouween Putriegol Bankhonk, under sin ellimitativ at Micropol yoong tensis ment tapetital and tenstores. "For the for New years, was need to new migrological or some way of analiting, Adv mits, can produce tau and mit an all the tenso get older, they are as the tenso get older, they are the factor years, with 15 to 25 mits of the source o at with any change, do management and sarly delec-tion. If can be minimized. "The chestrick begint picked up a stugger planning. "If you've got Harvest can be by hand for a zouple acres or less. For 2 5 acres, plant an acre or two Announce another each year. You start out will about 60 trees to an acre and then tren it down to 60 as the son care heat up the base of a virus a ten years ago." Fullyingta to 5 scree, hand mechanical state in Lots Monigan. nuls per pound versus the 30 to trees get older and competiti imate Across the lake

Falanta 318 Barrie

CONTACT

receiving operation, works on the inspection belt before the chestnuts are graded to



Yields in 2015

With 2 years of horrible temperatures, the MSU Clarksville plot was down 25% from 2014, but 2014's yield was the highest ever recorded at Clarksville. Even though it was down in 2015 compared to 2014, Clarksville still experienced its second highest yield ever at the Clarksville cultivar trial (most of the trees were Colossal and in their 14th growing season).

The average 'Colossal' tree produced 52 pounds in 2015 and 68 pounds in 2014.

Average number of pounds per tree by cultivar at Clarksville, Michigan for 14 growing seasons by year.

Cultivar	Species	Date planted	05	06	07	08	09	10	11	12	13	14	15
Colossal	Euro/Japanese	2002	2	3	31	27	8	36	30	40	32	68	52
BdB	Euro/Japanese	2006	-	-						11	19	20	18
LD	Japanese	2002	2	1	43	39	7	8	24	10	6	44	19
BH	Chinese	2002	1	1	42	5	5	11	2	23	12	19	30

Abbreviations: BdB ='Bouche de Betizac'; LD = 'Labor Day'; BH = 'Benton Harbor'

Asian Chestnut Gall Wasp

<u>2015</u>

ACGW, *Dryocosmus kuriphilush* was found in Michigan in June 2015 despite a quarantine banning nursery stock from states with ACGW. It was found on Chinese chestnut trees at 10 sites in southwestern Michigan. The presence of new and old galls at multiple sites indicated it has been present for more than two years.

Also verified the presence of the parasitoid *Torymus* spp. in some galls using PCR techniques

Trapping studies revealed that the adults began emerging from the galls in late June/early July and abruptly ended emerging at the end of July.

<u>2016</u>

Expanded its range by 30 miles to the north moving toward South Haven.

European studies indicate that the European X Japanese hybrid cultivar 'Bouche de Betizac' is immune to infestation and the European X Japanese hybrid cultivar 'Colossal' is susceptible but infestations were considered minimal. Marigoule, Marsol and Maraval were heavily infested in Europe.

One year results from Michigan verify— 'Bouche de Betizac' is resistant, however, 'Colossal' has moderate to heavy infestations based on number of galls per branch (not based on yield loss, yet) Marigoule, Marsol and Maraval have very light infestations 'Labor Day' is severely infested. Chinese chestnut seedlings and grafted germplasm such as 'Benton Harbor' are variable. BH has lots of pollen

Rooted Cuttings of Chestnut

- Began attempts to root cuttings in 2015
- Continuing with this work
- Will be limited to certain cultivars at first
- Will attempt to root other cultivars
- Combination of tissue culture and greenhouse work

Rooted cuttings



Dr. Carmen Medina is leading the tissue culture work





Rooting medium



Rooting the tissue cultured plants requires patience during acclimatization to the greenhouse



Mario Mandujano is doing this work



We are attempting to turn the biological control called hypovirulence into an EPA registered biopesticide for public use

Canker treated with hypovirulence has callus at the edges. We use on American chestnut and in the Colossal orchards.

Funded by USDA IR-4 program

Virulent, aggressive, lethal strain of chestnut blight

PCK 364-5 central

Put both together on cultures on or trees and the HV turns the V to HV as virus transfers

> 57554+ 13-8

12/00

Kontrol W/GH2 Hypovirulent, nonaggressive, non-lethal strain of chestnut blight

12/10

31564-3C A





Dr. Josh Springer, treated Bill Nash's American chestnut trees with hypovirulence. You should see some treated cankers on the trunks and the top of the tree is intact.

Harvesting

FACMA Harvester self propelled

- It is now a relatively old fashioned unit as FACMA has made new designs
- Relies less on vacuum and more on mechanical pick up. Brushes push nuts into head that moves the nut to a conveyor. Conveyor takes nuts into the cleaner where vacuums are still used to sort and clean.
- Growers should understand that FACMA units both pickup and clean/sort.
- Still use it, and plan to use again in 2016
- Not too useful in rain
- Sand can build up in the unit. A flat orchard floor with short grass is required.
- Our small self-propelled model can harvest about 3 to 4 tons in a day

