

NUT GROWERS HEAR IT PAYS TO CARE FOR BLACK WALNUT

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Careful attention to walnut trees could pay off in nut yields. Nutrient management and improved nut varieties can make a big difference in black walnut nut production. This was the theme of the 2002 American Black Walnut Conference in Springfield, MO. The conference was sponsored by the Center For Advancement of American Black Walnut and Southwest Missouri RC&D (Resource Conservation and Development, Inc.). This year's conference featured a tour of several landowner properties where improved nut varieties of walnut trees are being managed for nut production. One of the goals of the Center For Advancement of American Black Walnut, said center director Jim Jones, "is to plant 5,000 acres of improved black walnut nut trees for nut production by the end of the year 2007." Producers are adding to those acres by converting their stands developed from seeds of wild trees to stands of grafted trees of improved varieties.

Brian Hammons, president of Hammons Products Company, said that the demand for black walnut nutmeat continues to be about 2 million pounds a year, but this demand could increase if increased nut production could be stabilized. The company purchased its third largest nut crop, over 37.6 million pounds of nuts in 16 states, in 2001. Seventy percent of the crop came from

Missouri, and all about 3,500 pounds of the nuts came from trees growing in the wild. On the average, 2001 nuts from trees of improved varieties had 23 percent more nutmeats than nuts from trees growing in the wild, which averaged 7 percent nutmeats. Nutmeat yields were below normal for a large crop, Hammons said. The company paid about 34 cents per pound for improved variety nuts based on grade and yield compared to 10 cents for other hulled nuts. The company purchased only 18 million pounds of nuts in 2002 because of the smaller crop size compared to the crop of the previous year.

Both Bill Knaust and Gerald Gardner have grafted trees of improved varieties and produce good nut crops annually. Part of Knaust's success, whose farm is near Diamond, is likely due to the attention he gives his trees which are growing in soil not typically suited or would not be recommended for growing black walnut because of the 15-inch thick firm and brittle fragi-

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pan. His one-half acre orchard has 35 trees. He spreads 21 to 28 pickup loads of cow manure around trees annually in early spring. In mid-April, he applies 450 pounds of 13-13-13 fertilizer.

The orchard floor is covered with "cheat" a grass that dies by late June to form a mulch mat that conserves moisture and stops the invasion of other plants. Although restricted by water pressure and only a garden hose available for use, Knaust waters some trees. For this site, the difference in nut production in dry years may mean few or no nuts if trees are not watered. Nutritionally, under good management, the soil quality of the orchard exceeds that of a good soil on the Marcules site (Table 1). Other than to say he raises a lot of nuts on limited land, Knaust would not give production figures. Knaust said he is kept busy from fall into winter cracking nuts, which he sells at \$8.50 a pound.

Like Knaust, Gardner has a profitable nut operation in Sarcoxie. His orchard, also like Knaust, is on soils typically not recommended for walnut.

Gardner plants cheatgrass for weed suppression and maintains soil fertility (Table 1). He said that in some years he has all the nuts he can process without completely harvesting the nut crop. A fall flood in 2001 washed a lot of nuts down the creek. He sells nuts directly to the public.

Among other tour stops was a visit to a young black walnut plantation established on an ideal soil with suitable nutrition at the Marcules site (Table 1), located southeast of Pierce City; young black walnut and pecan plantings of Dr. Howard

Roberts, a retired physician, south of Joplin, where tree protection, grafting, and planting of large seedlings produced by the root production method (RPM) at the Forest Keeling Nursery were discussed; and the University of Missouri Southwest Center. At the center, researchers are looking at dates when different varieties produce nuts, and they are measuring quantity and quality of nuts produced from grafted trees over a period of years to estimate production and to determine if trees bear annually or in alternate years.

More on nut production from trees of improved varieties was presented at the evening banquet by Bill and Geri Hanson of Iowa. They showed a video on their nut operation including tree care (fertilization and pest control), mechanical harvesting, automated processing, and marketing. The Hansons market their nuts through local retail grocery

Table 1. Soil chemistry for the upper six inches of soil at Marcules, Knaust, and Gardner black walnut sites in southwest Missouri¹.

Sites	Depth (in)			Depth (in)			Depth (in)		
	0-2	2-4	4-6	0-2	2-4	4-6	0-2	2-4	4-6
	pH			EC (mmhos cm ⁻¹) ²			% Carbon (OM) ³		
Marcules	7.2	6.7	6.6	127	23	14	2.1	1.0	0.9
Knaust	7.5	7.5	7.4	259	173	109	5.2	2.6	1.1
Gardner	7.5	7.5	7.4	152	144	97	3.5	3.0	2.0
	P (lbs/A)			K (lbs/A)			NO ₃ -N (lbs/A)		
Marcules	195	118	119	648	339	242	12.7	6.3	4.2
Knaust	427	259	114	1339	907	755	25.8	14.7	9.7
Gardner	186	154	148	644	523	426	9.3	8.8	4.7
	Ca (lbs/A)			Mg (lbs/A)			Na (lbs/A)		
Marcules	3627	2565	2571	271	108	89	17.8	13.8	17.3
Knaust	7691	5105	2949	639	373	220	33.3	23.3	23.6
Gardner	4889	4392	3893	536	432	386	18.3	17.5	16.0
	S (lbs/A)			Fe (lbs/A)			Mn (lbs/A)		
Marcules	19.5	12.6	10.7	124	129	126	183	165	123
Knaust	67.7	23.7	14.0	99	88	69	163	170	185 ⁴
Gardner	22.0	20.8	16.3	73	69	59	233	216	198
	Zn (lbs/A)			Cu (lbs/A)			B (lbs/A)		
Marcules	62.3	46.0	39.7	7.2	6.2	7.2	1.4	0.6	0.5
Knaust	42.3	25.7	13.3	4.8	4.6	5.7	2.7	1.4	0.6
Gardner	93.8	90.5	118	6.4	5.7	5.5	2.0	1.6	1.1

¹ Mean of four random samples. The Marcules plantation is located near Pierce City on a bottomland site with deep, nearly level, well drained, Huntington silt loam soil. The Knaust plantation is on an upland near Diamond with deep, moderately sloping, moderately well drain, Crelton silt loam containing a 15-inch thick fragipan. The Gardner site, located near Sarcoxie, is on deep, nearly level to sloping, somewhat poorly drained, Helper silt loam.

² Electrical conductivity is used as an index of the total concentration of dissolved salt.

³ OM=organic matter, P=phosphorus, K=potassium, NO₃-N=nitrate nitrogen, Ca=calcium, Mg=magnesium, Na=sodium, S=sulfur, Fe=iron, Mn=manganese, Zn=zinc, Cu=copper, B=boron.

⁴ Samples are in the correct order.

stores.

Undoubtedly, the organizers of the 2002 Nut Production Conference wanted the 80+ attendees to leave knowing that giving careful attention to black walnuts could be profitable.

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