Pecan

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7. Title

Breeding, Cultural Management, and Post-Harvest Physiology of Pecan

12. Investigator Name(s) (Last Name and Initials)

Graham, C. J.

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Outputs:

Varietal selection and management of fruits and nuts for Northwest LA was discussed at the Louisiana Nursery in Keithville, LA. Antioxidant studies on native and improved varieties of pecan at the LSU Pecan Research Station in addition to information acquired from other sources was presented at the 45th Annual Western Pecan Association Conference at Las Cruces, NM. The benefits of proper fertilization and irrigation to produce a healthy pecan crop was presented at the Louisiana Pecan Growers/Pecan Producers of Louisiana Association Spring Educational Seminar at West Monroe, LA. Site selection and tree establishment for pecan orchards plus crops that could be potentially intercropped in newly established pecan orchards was discussed with a minority farmer contigent from Mississippi. Production and tree growth in the Cultivar Demonstration Orchard, status of the NPACTS orchard in Alexandria, LA, "Retain" growth regulator research, and phosphite research was discussed at the Tri-State Pecan Conference. The use of phosphite compounds as fertilizers and fungicides was discussed at the Alabama Pecan Growers Association Conference in Fairhope, AL. The scientific information developed in the health benefits of pecan nuts was published in the proceedings of the 45th Annual Western Pecan Growers Conference. Articles published in PecanSouth discussed the importance of a good soil, the effects of drought on pecan production, and how pecan shucksplit is influenced by different types of stresses. Cultural management, pecan nut development and abortion, and state crop estimates were outlined in articles for the Horticultural Hints newsletter and In-A-Nutshell newsletter. Outreach materials have been provided to health professionals, Extension Agents, dieticians, and the general public. One-on-one audience contact has been by telephone, fax, station visits, on-farm visits, and during grower meetings.

Outcomes/Impacts:

Research plots for a Specialty Crops grant were established at commercial orchards in Red River and Pointe Coupee parishes. The season long drought was prohibitive to scab lesion formation and very little scab infection developed until late in the season following rains associated with Tropical Storm Lee. Phytochemical levels were evaluated in kernels of native Louisiana selections located across several parishes in Louisiana. New information about the nutritional properties of pecans will encourage health and nutrition professionals to promote the consumption of pecans as a beneficial and nutritional habit. An orchard established in 2006 at the Pecan Research Station tested alternate forms of nitrogen and fertilizer rates on growth, nutrition, and production. A pecan orchard continues to be developed at the Dean Lee Research Station near Alexandria as part of a NPACTS evaluation project. The seedling trees will be grafted to advanced selections from the USDA Pecan Breeding Program and superior native selections collected in Louisiana. It is a non-irrigated site, which resulted in limited growth and the death of several trees during the severe drought conditions of 2011. A cooperative demonstration orchard consisting of Caddo, Desirable, Elliott, Nacono, Oconee, and Pawnee pecan cultivars grafted onto Moore rootstock continues to be developed. Based on trunk cross-sectional area, Oconee is the most vigorous cultivar in the test, followed by Pawnee. The percent of trees with a crop ranged from 50% in Elliott to 83% in Pawnee. Information collected from the orchard will help determine the economic feasibility of current LSU AgCenter pecan production recommendations. Drought conditions in 2011 resulted in a decrease in nut size and caused very late shuck split and sticktight problems in many pecan cultivars.

Publications:

Graham, C.J. 2011. Antioxidant research on pecan: Is it still important? Proceedings of the 45th Annual Western Pecan Growers Association Conference, Las Cruces, NM, March 6-8, 2011. Vol. 45, pp. 35-38.

Graham, C.J. 2011. Aw shucks: this year just aint normal. Pecan South 44(8):6, 10, 19, 25.

Graham, C.J. 2011. How will weather affect this years crop. Pecan South 44(4):8, 10.

Graham, C.J. 2011. The importance of good soil. Pecan South 43(12):8, 11.

Graham, C.J. 2011. How is your pecan crop looking?. In a Nutshell Newsletter. No. 2, pp. 4-5.

Graham, C.J. 2011. Pecan nut development and causes of nut abortion. Horticulture Hints, Summer Edition, pp. 6-7.

Graham, C.J. 2011. Cultural management of pecans in the homescape. Horticulture Hints, Spring Edition, pp. 8-9.

Graham, C.J. 2011. Pecans: What can we expect in 2011. In: (ed) Guidry, K.M., LSU AgCenter Agricultural Outlook.

Graham, C.J. 2011. Pecans. 2011 LSU AgCenter Agriculture Summary.

Participants:

Charles Graham (PI), LSU AgCenter; Roger Wilson, Honey Bayou Farm, Harmon, LA; and Verl Day production orchard near Batchelor, LA.

Target Audiences:

Target audiences included both commercial and residential pecan growers in Louisiana and across the Southeastern US pecan belt. The scientific information developed in the areas of pecan genetics, pecan husbandry, and the health benefits of pecan nuts is aimed at the scientific community.

Project Modifications:

Nothing significant to report during this reporting period.

Approved (Signature)	Title	Date