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7. Title

Influence of Cultural Practices on Grain Sorghum and Small Grain Production on Northeast Louisiana Alluvial and Loessial Silt Loam Soils

POSTED

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

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20. Termination Date 09/30/2012	40. Period Covered (mo/da/year): 10/01/2007 TO 09/30/2012

Outputs:

Findings from this project were disseminated at producer/consultant meetings, field days, and research/extension venues. Annual reports have been posted on the LSU AgCenter's web page to aid producers in making crop management decisions, including hybrid/variety selection. Yield, agronomic traits, cultural information, and weather for all sorghum locations, is also posted on the web page.

Outcomes/Impacts:

Field experiments evaluated the influence of cultural practices involving row configuration (RC) and seeding rate (SDR) on grain sorghum yield. Single rows (SR) were centered and twin rows (TR) centered, 9.5-inches apart, on 40-inch wide raised beds. Treatments also included four 16-inch rows (narrow rows, NR) planted on 80-inch wide raised beds. SDR treatments were 52,500, 78,500, 104,500, and 130,800 seed/acre, which are equivalent to 4, 6, 8, and 10 seed/ft for SR and 2, 3, 4, and 5 seed/ft for TR and NR. In several of the trials, yields were low due to a multiplicity of factors, including high rains from tropical storms and high insect pressure. In a year with good yield potential (with and without irrigation), yield responses to RC had the following rank: SR=TR>NR, regardless of irrigation treatment. In irrigated trial, optimum SDR was 6 seed/ft for SR and 3 seed/ft for TR and NR treatments. Field experiments also evaluated the influence of seedbed (SB), row spacing (RS), and SDR on the yield performance of five wheat varieties. SB treatments were the conventional flat SB and 80-inch wide, raised beds. SDR treatments were 12 and 24 seed/linear ft, which are equivalent to a seeding rate of 50 and 100 lb seed/acre. Yields were generally higher on the raised SB treatment, particularly in years with excessive winter rainfall. There were very small yield differences between treatments involving RS, SDR, and variety. Grain sorghum hybrid performance was evaluated at two locations (non-irrigated and irrigated trials). At the NERS, average yield across hybrids was 5,645 lb/acre in non-irrigated trials and 5,773 lb/acre in irrigated trials. At the MRRS, average yield across hybrids was 3,846 lb/acre. Wheat variety trials were conducted at the NERS and at the MRRS. Average yield across varieties was 65.0 bu/acre at the NERS and 72.6 bu/acre at the MRRS. Oat variety performance trials were conducted on Gigger silt loam at the MRRS. Average yield across varieties was 86.8 bu/acre. This and other information may enhance yield potential and profitability for feed grain and small grain producers in northeast Louisiana.

Publications:

Mascagni, H.J., Jr., R. Bell, K. Arceneaux, M. Deloach, R. Ferguson, D. Groth, D. Harrell, J. Hayes, S. Harrison, C. Hollier, D. Lanclos, R. Leonard, J. Leonards, S. Moore, B. Padgett, C. Roider, R. Regan, and G. Schexnayder. 2008. Performance of grain sorghum hybrids in Louisiana, 2008. LAES Research Summary No. 179 (on-line).

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Mascagni, R., S. Harrison, K. Arceneaux, and B. Bell. 2010. Influence of raised beds, row spacing, and seeding rate on wheat produced on alluvial soil. LA Agric. 53 (1):28-29.

Padgett, B., M. Purvis, S. Harrison, R. Mascagni, and C. Hollier. 2010. Disease management in Louisiana wheat. LA Agric. 53 (3):12-13.

Harrison, S., K. Arceneaux, L. Bissett, S. Blanche, T. Brown, G. Close, P. Colyer, M. Delaoach, J. Fluitt, D. Groth, D. Harrell, J. Leonards, H. Mascagni, K. McCarthy, B. Padgett, M. Purvis, R. Regan, S. Viator, and G. Williams. 2012. Small grain performance trials, 2011-2012. LAES Research Summary No. 194 (on-line).

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Participants:

H.R. Mascagni (PI), LSU AgCenter.

Target Audiences:

Target audiences for this project include crop producers and colleagues who evaluate agronomic practices that may enhance feed grain and small grain production and profitability.

Project Modifications:

Not relevant to this project.

Approved (Signature)	Title	Date
		