Texas A&M AgriLife Extension

Department of Soil and Crop Sciences

Texas Wheat Producers Board and Association

2016-2017 Winter Wheat Winter Lentil Crop Rotation trial in the Rolling Plains of Texas

*The trial was a randomized complete block design with 4 replications. **NO MARKET IS YET AVAILABLE FOR LENTIL IN OUR REGION.**

Background information

Trial location: Chillicothe, TX

Precipitation during Sep-May:

Soil type: Abilene clay loam

Planting date: 9/30/2016

Harvesting date: 6/5/2017

Variety: TAM 114 (Winter wheat, WW), HY Class (Winter canola, WC), and Morton (Winter lentil, WL)

Seeding rates (lb/ac) : WW (60), WC (5), and WL (25)

Take-home message: WL is a cool-season annual grain legume for human consumptions as well as livestock feeds. WL was slow to establish until soil temperature warmed up in the spring. Grain yield was 39, 8.3, and 7.4 bu/ac for WW, WL, and WC, respectively (Fig 1). WL yield was low with the seeding rate utilized in the trial (25 lb/ac). Seeding rate trial was also conducted to determine the best seeding rates for WL (Fig 2). The 40 lb/ac produced 20 bu/ac of WL yield. Second year trial is on-going to evaluate the effect of WL on WW yield.

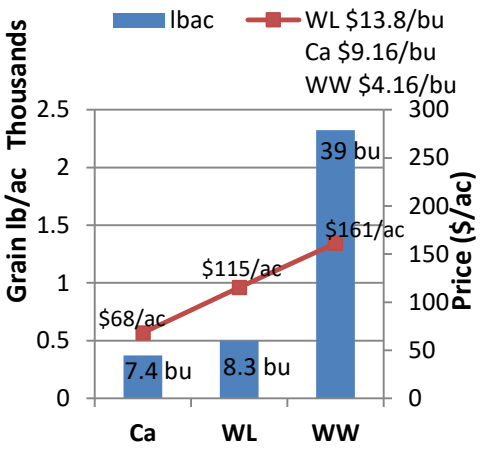

Fig1. Grain yield and values as of June 2016.

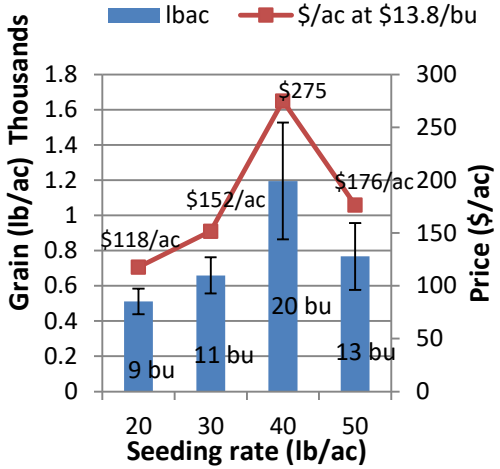

Fig2. Grain yield and values of WL among four seeding rates.

Photos of the trial from planting to harvesting

21 Day After Planting (DAP) (Oct)

51 DAP (Nov)

Note on the slow growth on WL as compared to WW and WC. WC covered ground quickly before the first killing frost.

153 DAP (Mar)

Note on the freeze injury on WC (left) and no freeze injury on WW and WL. Although WL was slow to establish, it was more cold tolerant than WC.

200 DAP (Apr)

Note on the vigorous growth of WL.

248 DAP (Jun)

Dried WL pots. No desiccation was applied. WL pots were tightly sealed; therefore, WC was more susceptible to shattering than WL.

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