

# Wheat and Durum Variety Trial in Poston, 1989

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A wheat and durum variety trial was initiated on the Bruce Church Ranch in Poston as part of an ongoing effort to establish long-term yield data for commercial varieties in Arizona. A secondary objective of this work was to compare varieties in terms of tissue nitrate concentration.

Five wheat, seven durum, and one oat variety were planted on December 13, 1988, in 1/4-acre strip plots. The trial was bordered by wheat variety WestBred Baker. Stem samples were collected at the joint and boot plant growth stages for all varieties. Crop history is presented below.

Yield data is presented in Table 1. Wheat yields varied considerably among replications and no statistically significant differences were detected. The highest yielding durum cultivars were Yavaros, Aldente, WestBred Imperial, and WestBred Turbo. The durum yields correspond to long-term yield averages, in general, except in the case of Aldura, which is usually higher-yielding. The oat variety Cayuse yielded 8.2 tons of hay per acre.

Stem nitrate interpretations are presented in the figure below. All varieties tested had excessive nitrogen as indicated by stem nitrate concentrations. The oat variety was Cayuse and the white wheat variety was Klasic.

## Crop History

Planting date: December 13, 1988  
 Soil type: sandy loam  
 Seeding rate: 120 lbs seed/A  
 Fertilizer: 155 lbs N/A as urea preplant, 58 lbs. P<sub>2</sub>O<sub>5</sub> and 6 lbs N as 11-52-0 preplant, and 40 lbs N as UN32 in the irrigation water on January 25, February 24, March 9 and March 23. Total nitrogen application equals 321 lbs N/A.  
 Irrigation: 4 inches of water applied on November 29, December 13, January 25, February 3, February 24, March 9, March 23, April 1, April 12, and April 21 for a total of 40 inches.  
 Crop data: Jointing on February 19, boot on March 9, heading March 23 to April 1.  
 Harvest date: May 30, 1989.

Table 1. Grain yields for each variety

| Crop*   | Variety        | Grain yield (lb/A) | Crop  | Variety           | Grain yield (lb/A) |
|---|----------------|--------------------|-------|-------------------|--------------------|
| Wheat   | Klasic         | 6160               | Durum | Aldente           | 6500               |
|   | Probrand 775   | 6210               |       | Aldura            | 5490               |
|   | Topaz          | 4760               |       | Nudura            | 5240               |
|   | WestBred Baker | 6700               |       | WestBred 881      | 5350               |
|   | Yecora rojo    | 5430               |       | WestBred Imperial | 6240               |
|   |                | WestBred Turbo     |       | 6020              |                    |
|   |                | Yavaros            |       | 6620              |                    |
| Least significant difference (5% level of confidence) |                | NS                 |       |                   | 546                |

\* Grain yields of the wheat varieties varied considerably among replications and may not accurately reflect variety

## 1989 Bruce Church Variety Trial Stem NO<sub>3</sub> Interpretations

