Kansas River Valley Experiment Field

Introduction

The Kansas River Valley Experiment Field was established to study management and effective use of irrigation resources for crop production in the Kansas River Valley (KRV). The Paramore Unit consists of 80 acres located 3.5 miles east of Silver Lake on U.S. Highway 24, then 1 mile south of Kiro, and 1.5 miles east on 17th Street. The Rossville Unit consists of 80 acres located 1 mile east of Rossville or 4 miles west of Silver Lake on U.S. Highway 24.

Soil Description

Soils on the two fields are predominately in the Eudora series. Small areas of soils in the Sarpy, Kimo, and Wabash series also occur. Except for small areas of Kimo and Wabash soils in low areas, the soils are well drained. Soil texture varies from silt loam to sandy loam, and the soils are subject to wind erosion. Most soils are deep, but texture and surface drainage vary widely.

2024 Weather Information

The year was generally about average with some extremes mixed in, with rainfall 4-6 inches lower for the year and below average for four and five months of the six-month growing season at Paramore (Topeka) and Rossville, respectively. The frost-free season was 176 days at Rossville and 192 days at Paramore (average = 173 days), with 9 and 13 days in the single digits or lower at Rossville and Paramore, respectively. The last spring freeze was April 21 at Rossville and April 5 at Paramore (average = April 21), and the first fall freeze was October 14 (average = October 11). There were 46 and 39 days above 90°F, and one day above 100°F at Paramore and Rossville, respectively. Precipitation was below normal at both fields for 9 and 8 months at Rossville and Paramore, respectively**.** Irrigation for corn started June 11, much earlier than normal, up to 7.5 inches for the corn. Irrigation for soybeans started June 14, much earlier than normal with up to 5.8 inches from mid-June through mid-September.

The corn and soybean yields were some of the best seen at KRV in spite of the lack of rain and green snap in some corn at Rossville. The corn performance trials averaged 264 bu/a for the irrigated and 239 for the dryland. The soybean performance trials averaged 79.2 bu/a for the irrigated and 63.4 bu/a for the dryland. The sudden death syndrome foliar symptoms were first seen in early-August in most fields in 2024, causing yield loss in susceptible soybeans in both the irrigated and dryland trials due to the disease. The dryland soybean yields were reduced somewhat by the lack of moisture during the grain-fill period.

Table 1. Precipitation at the Kansas River Valley Experiment Field

	Rossville Unit		Paramore Unit	
Month	2024	30-year avg. 1991-2022	2024	30-year avg. 1991-2022
	---------- in. ----------		---------- in. ----------	
January	2.08	0.74	2.10	0.89
February	1.03	1.18	0.89	1.31
March	0.83	2.08	0.94	2.25
April	3.30	3.48	4.09	3.81
May	2.66	5.06	4.34	5.17
June	4.47	5.11	4.14	4.92
July	5.44	4.32	6.42	3.99
August	2.57	4.60	2.02	4.55
September	0.85	3.75	0.87	3.52
October	2.11	2.71	1.26	2.85
November	4.48	1.67	4.90	1.78
December	0.39	1.37	0.37	1.49
Total	30.21	36.07	32.34	36.53