
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.

2023 Weather Information

The year was generally somewhat warmer in the winter and summer than last year, with rainfall 8–10 inches lower for the year and below average for every month of the growing season at Paramore (Topeka). The frost-free season was 157 days at both Rossville and Paramore units (average = 173 days), with 10 and 9 days in the single digits or lower at Rossville and Paramore, respectively, which was less than in most years. The last spring freeze was May 3 for both Rossville and Paramore (average = April 21), and the first fall freeze was October 7 (average = October 11). There were 42 and 37 days above 90°F, and 4 and 5 days above 100°F at Paramore and Rossville, respectively. Precipitation was much below normal at both fields for the year (Table 1), with 8 and 9 months below average at Rossville and Paramore, respectively. Irrigation for corn started in mid-June, much earlier than normal, up to 8.5 inches for the corn. Soybeans were irrigated much earlier than normal with up to 6.7 inches from late June through early September. The corn performance trials averaged 239 bu/a for the irrigated and 185 for the dryland. The soybean performance trials averaged 75.4 bu/a for the irrigated and 51.6 bu/a for the dryland. The sudden death syndrome foliar symptoms were first seen in mid-August in most fields in 2023, causing yield loss in susceptible soybeans in the irrigated trial due to the disease. The dryland soybean yields were reduced considerably by the lack of moisture during the grain-fill period.

Table 1. Precipitation at the Kansas River Valley Experiment Field

Month	Rossville Unit		Paramore Unit	
	2023	30-year avg. 1991–2022	2023	30-year avg 1991–2022
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January	0.39	0.74	1.39	0.89
February	2.77	1.18	2.54	1.31
March	1.43	2.08	1.33	2.25
April	1.67	3.48	1.51	3.81
May	6.26	5.06	4.04	5.17
June	2.67	5.11	2.89	4.92
July	4.95	4.32	3.47	3.99
August	1.39	4.60	2.03	4.55
September	1.33	3.75	1.20	3.52
October	1.53	2.71	1.40	2.85
November	1.37	1.67	1.46	1.78
December	2.10	1.37	2.89	1.49
Total	27.86	36.07	26.15	36.53