Rattlesnake CIG-NRCS Summary 2021/2022 Comparisons

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2021
28 Fields, 14 Farms (19 Corn, 2 Milo, 4 Soy, 1 Bermuda, 1 Rye, 1 Alfalfa)
2022
32 Fields, 13 Farms (18 Corn, 4 Milo-Feed Sorghum, 9 Soy, 1 Bermuda, , 1 Cotton, 3 Wheat, 1 Grass Hay)
5 Split crops
2023
37 fields, 17 farms

Water Use
2021
Corn; 11-21 inches/acre, Soy; 10.4-16", Milo 6-7.4", Alfalfa; 14.4", Bermuda 9.1"
2022
Corn; 12-24 inches/acre, Soy; 13-24", Milo 7-12", Wheat 9-11", Bermuda 16",Cotton 12"
Most permits would have overpumped, but had Savings account, CKWBA, or started or had existing MYFA. A few stayed within their allotment. A brutal summer.

Yields Much bigger range in 2022. A few corn fields went to sileage
2021 Corn 170-280 Bushels/acre Soy 57-87 B/acre
2022 Corn 98-250 Soy 38-84

Water Duty Bushels/acre per inch of Irrigation
2021
Corn 10.1-20.2, Soy 3.8-8.4
2022
Corn 5-12, Soy 2.8-4.9, Wheat 4.8-8.5, Feed Sorghum 0.5-0.6 tons/inch

Irrigation Number/average Depth

2022 25/0.72" Range 0.4"- 1.1"

Total ET, EvapoTranspiration. Wide range of numbers to choose from; ET0,ETp, ET crop, kc, kp, etc.
ET0 grass reference, ETcrop, ETp Alfalfa reference
2021
ET0 grass Corn 120 day (May 10 – Sept 10) 25" ET corn 20" ET Soy 19"
2022
ET0 grass Corn 120 day 30" ET corn 24" ET Soy 23"

ET 0 Grass Reference April 1 to Sept 30 Average of 12 GMD5 Stations
2021 37" (35-39.5)
2022 43" (40-46)

KS Mesonet St John 1NW
ET0
2021 41.7" 10% higher than GMD5
2022 47.8"
ETp Alfalfa reference

2021 57” 35% higher than ET0 GMD5
2022 67”

RainFall – Gross

GMD5 April 1 to Sept 30
2021 14.3-20.3
GMD 5 Macksville May 1-June 7 4.6”
June 8-Sept 30 11.2”

2022 7.3-12.3
GMD Trousdale May 1 to June 7 6”
June 8-Sept 30 2.6”

ET crop = ET0 * kc crop coefficient Kansched Rattlesnake used 1.2 for Corn. 1.1 looks more accurate
10% higher.Soybeans 1.15 in past 1.05 or even 1.0 now
Aquifer Fatigue. Significant decline in 2022 Pumping water levels compared to 2021. Some as much as 20 ft.
Static water levels 3-6 ft. less in Fall 2022 vs. Spring 2021. Led to air pumping and in 1 case the well quit pumping.