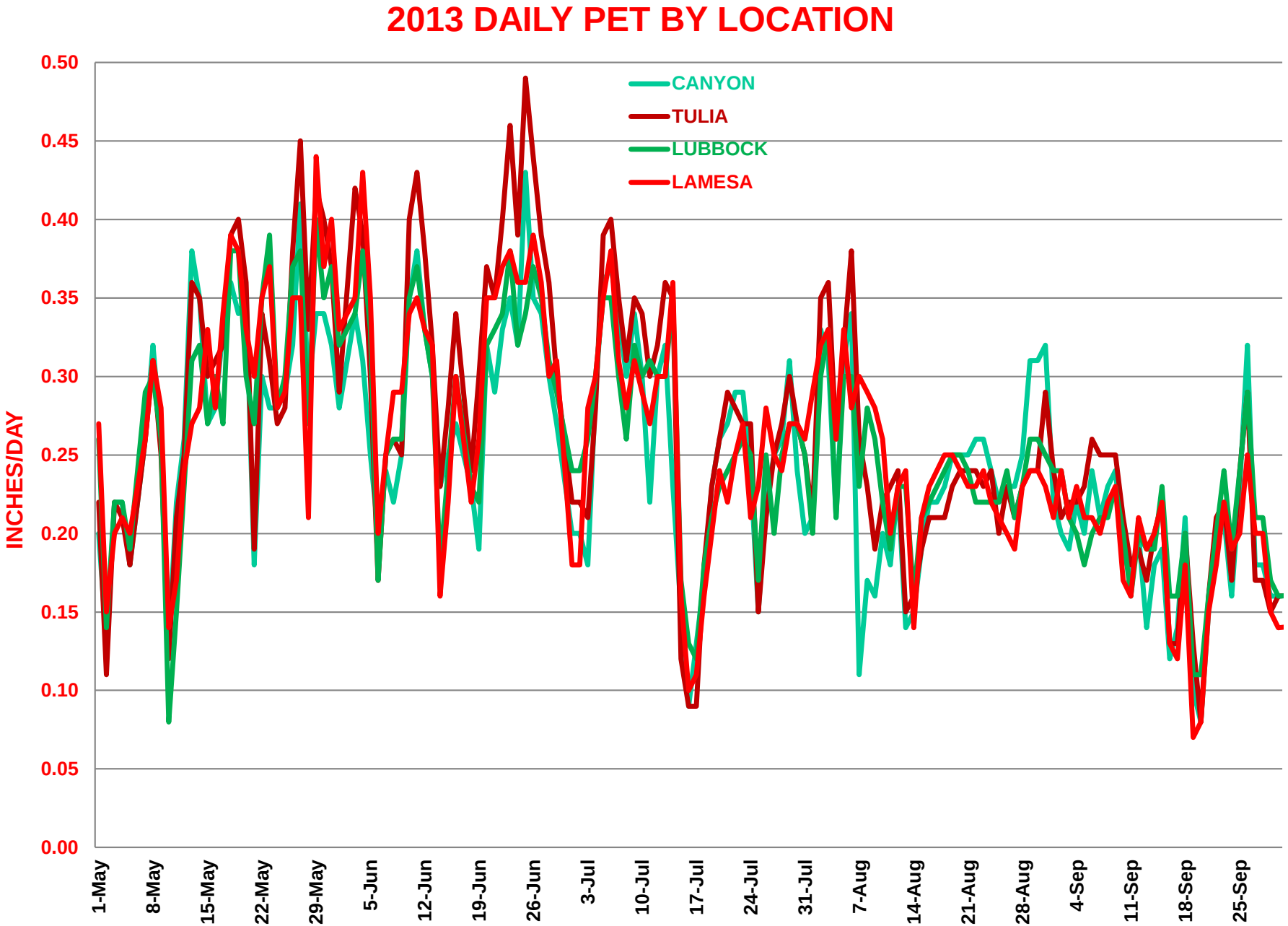
IRRIGATION WATER SUPPLY

27,225 gallons/acre inch

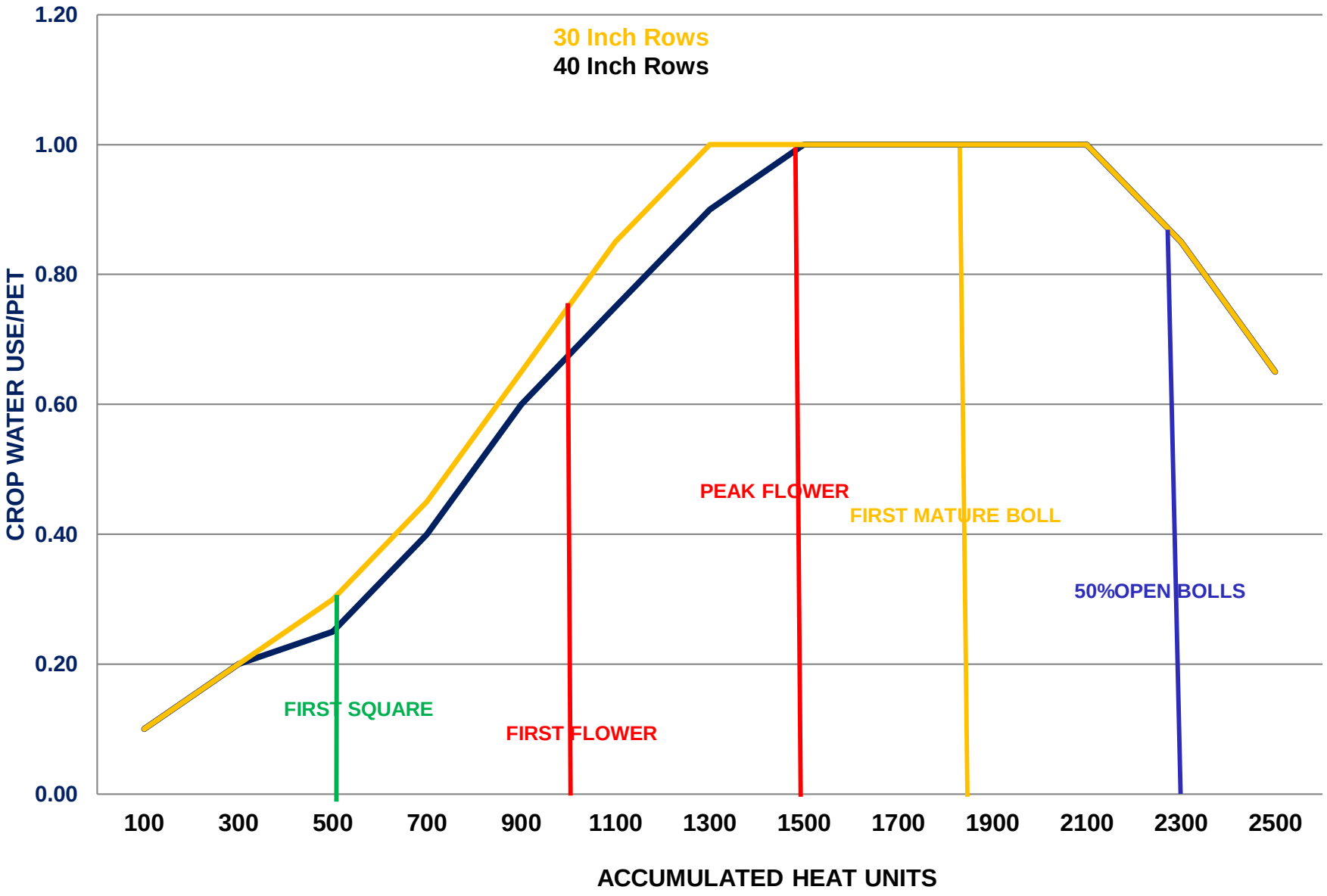
Gallons/Min/Acre	Acre Inches/Day
1.0	0.053
2.0	0.107
3.0	0.160
4.0	0.214
5.0	0.267
6.0	0.320
7.0	0.373

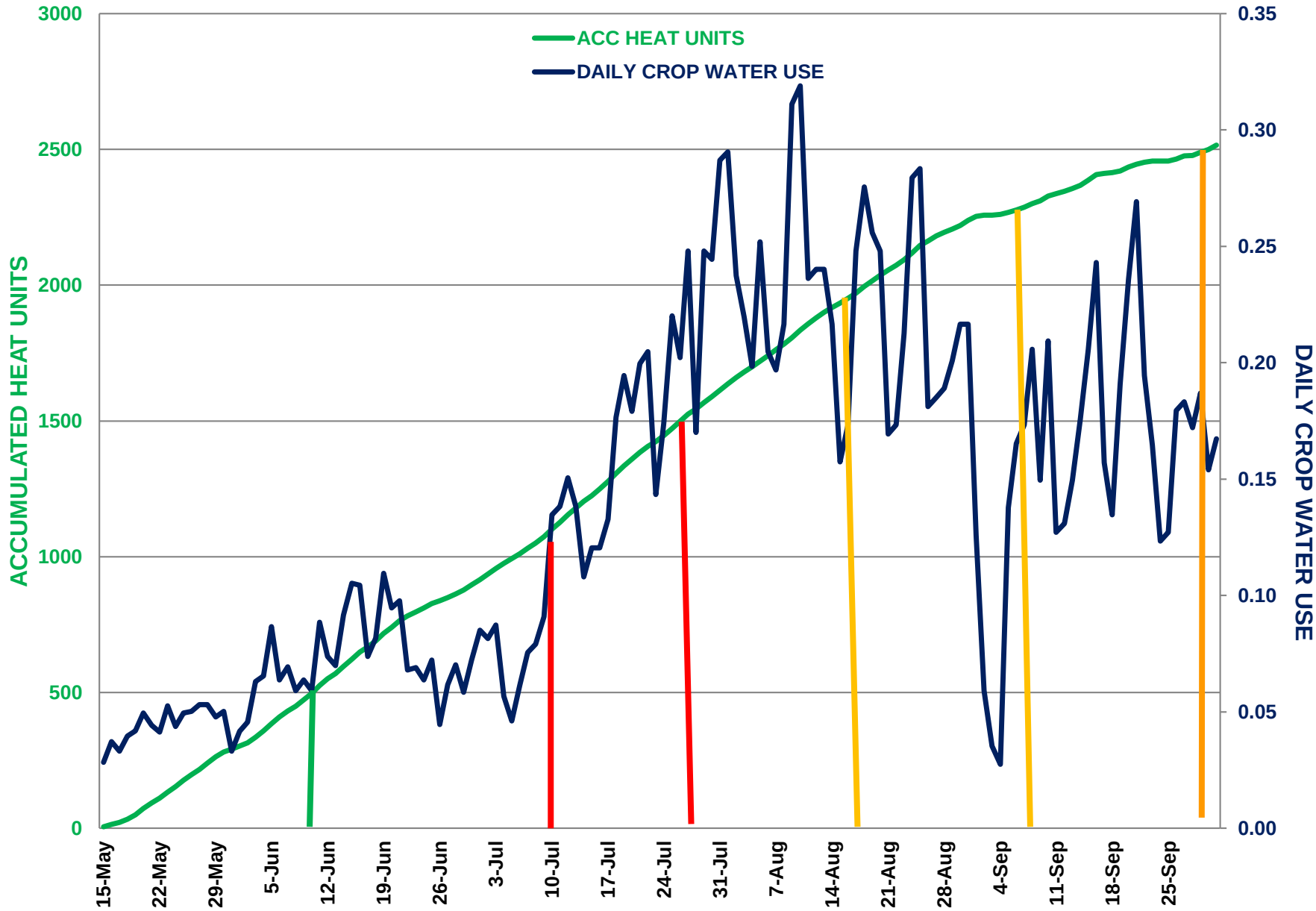
SOIL WATER DATA

TEXTURE	FIELD CAPACITY Inches/foot	PERMANENT WILTING POINT Inches/foot	PLANT AVAILABLE WATER Inches/foot	INITIATION OF STRESS 60% depletion of PAW	INFILTRATION RATE Inches/hour
PULLMAN CLAY LOAM	4.38	3.05	1.33	0.80	0.21
OLTON LOAM	3.86	2.36	1.50	0.90	0.77
ACUFF LOAM	3.25	2.03	1.22	0.73	1.28
AMARILLO FINE SANDY LOAM	2.88	1.90	0.98	0.59	1.84
PATRICIA & AMARILLOL OAMY FINE SAND	2.60	1.62	0.98	0.59	5.79

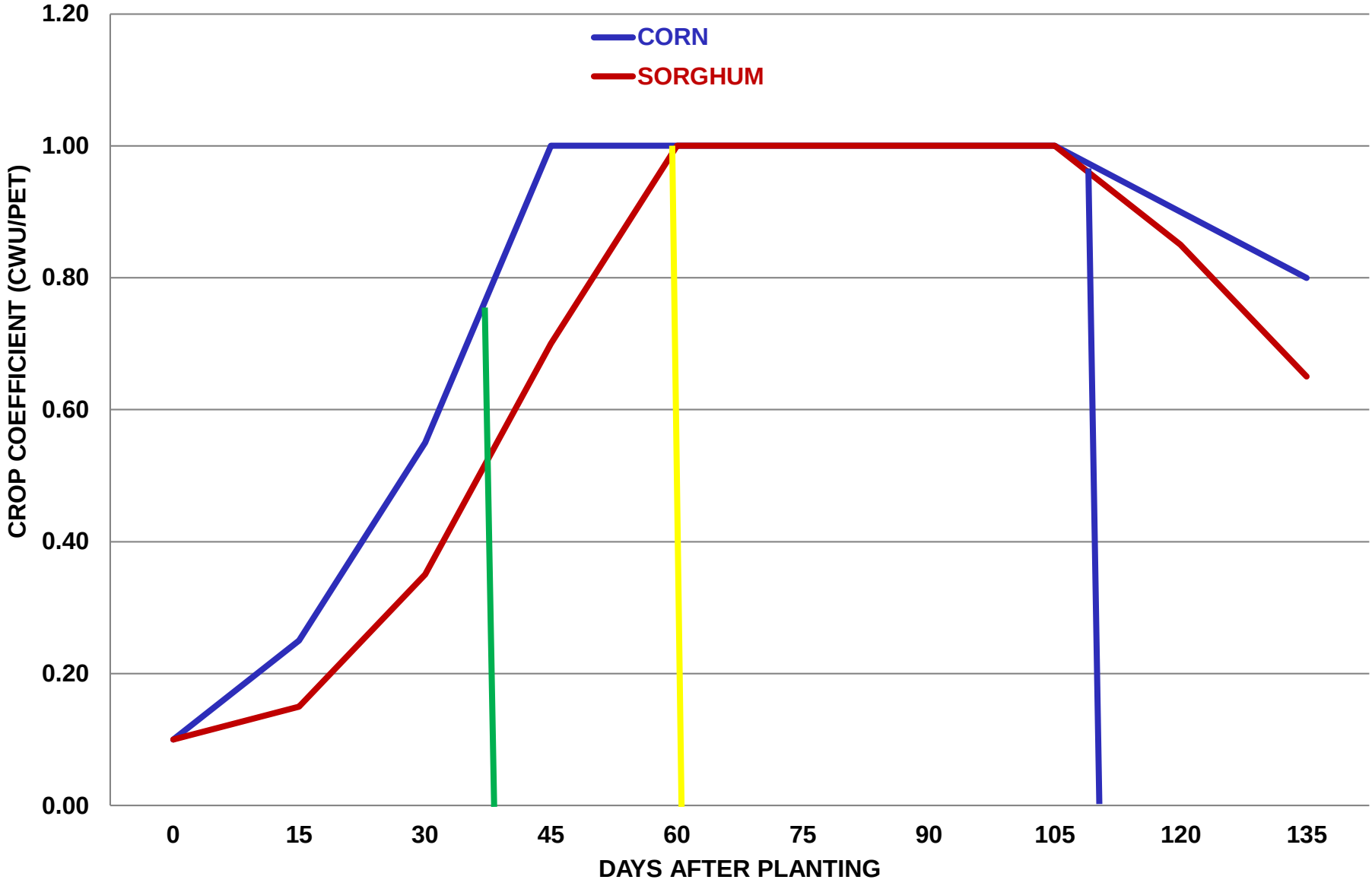

2013 DAILY PET BY LOCATION
INCHES/DAY
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
CANYON
TULIA
LUBBOCK
LAMESA
1-May
8-May
15-May
22-May
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
17-Jul
24-Jul
31-Jul
7-Aug
14-Aug
21-Aug
28-Aug
4-Sep
11-Sep
18-Sep
25-Sep

CROP COEFFICIENTS-COTTON




2013 COTTON WATER USE
ACC HEAT UNITS
DAILY CROP WATER USE
ACCUMULATED HEAT UNITS
DAILY CROP WATER USE
3000
2500
2000
1500
1000
500
0
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
15-May
22-May
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
17-Jul
24-Jul
31-Jul
7-Aug
14-Aug
21-Aug
28-Aug
4-Sep
11-Sep
18-Sep
25-Sep

CORN & SORGHUM CROP WATER USE



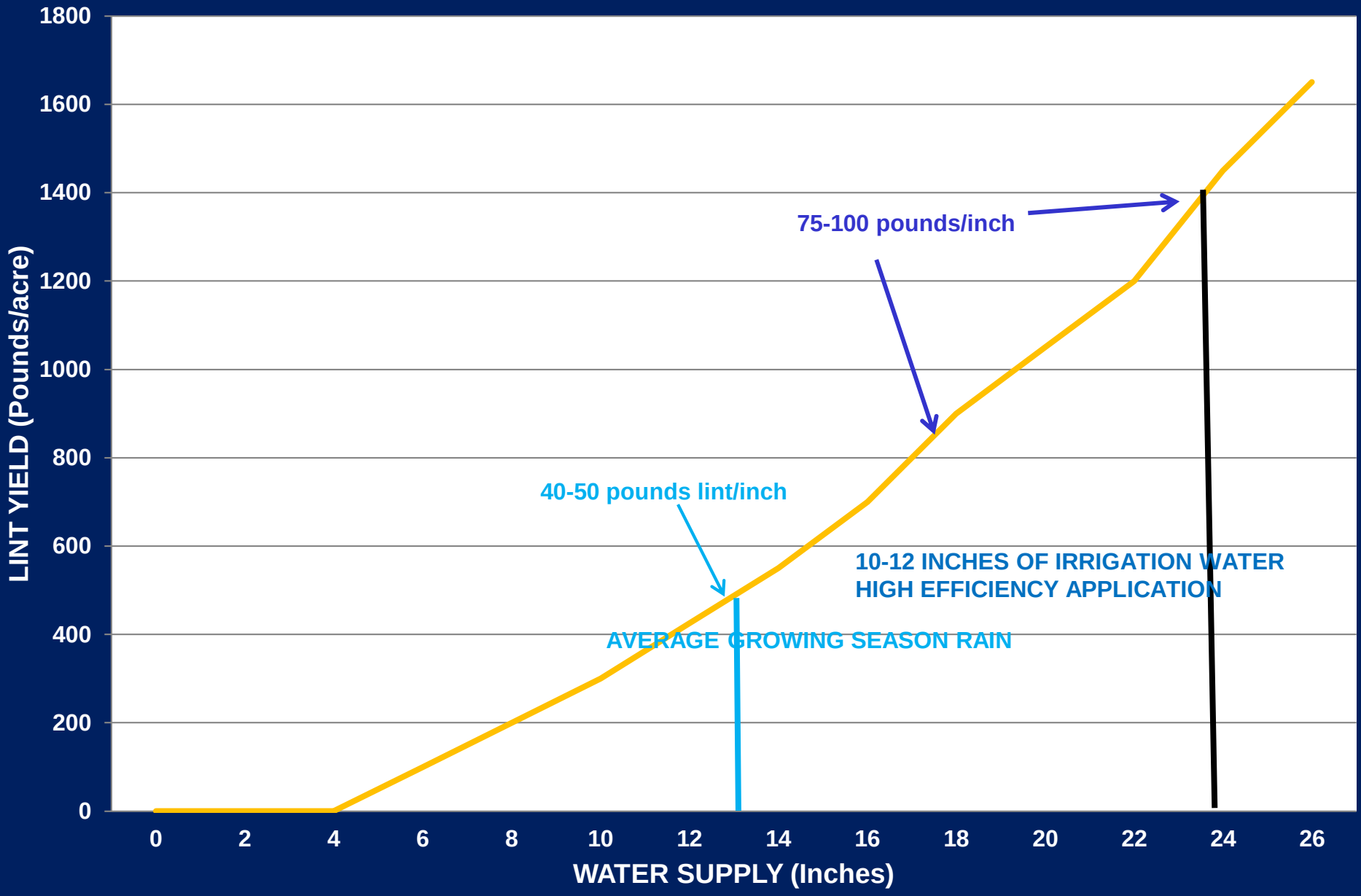
DAILY & SEASONAL CROP WATER USE

CROP	MAXIMUM DAILY WATER USE (Inches)	VOLUME REQUIREMENT (GPMA)	DURATION (Days)	SEASONAL WATER USE (Inches)
COTTON	0.25	5	40	22-24
CORN	0.35	7	60	32-35
SORGHUM	0.30	6	40	28-30
WHEAT	0.25	5	75	20-22
PEANUTS	0.30	6	70	30-32

Critical Developmental Stages

- **Corn:** Two weeks prior to tasseling is the most critical period when establishing number of rows and kernels/row Tasseling & Silking, Water Stress and High Temperature desynchronize pollen shed and silk receptivity Early seed fill, Reduced supply of photosynthate results in kernel abortion
- **Cotton:** First square to first flower establishes number of harvestable fruit. First flower through fourth week of flowering establishes harvestable boll number Bolls less than 5 days old are sensitive to water and nutrient stress causing abortion
- **Sorghum:** Panicle initiation through boot and heading affects seed/head, Water Stress during early grain fill through dough stage affects seed size
- **Peanuts:** Dry surface soil at pegging affects pod number, Water Stress during Pod Fill affects kernel number and size

COTTON WATER USE EFFICIENCY
TEXAS HIGH PLAINS



BIOLOGICAL-ECONOMIC
WATER USE EFFICIENCY

CROP	INTERCEPT	SLOPE	$ /INCH
COTTON	4	160 SEED COTTON (65-70 Lint)	~50
CORN	10	600	~50
SORGHUM	6	480	~35
WHEAT	4	200	~27
PEANUTS	6	250	~50

NiTROGEN REQUIREMENTS/INCH OF IRRIGATION WATER

CORN=10bu/in at 1.0-1.25 #N/bu =10-12#N/Inch

SORGHUM= 8 bu/in at 0.81#N/bu =6-7#N/Inch

COTTON = 65-75# Lint/in at 3-4 #N/100#

=5-7 #N/Inch