CC-TR21-4/81

CONSUMPTIVE USE RATES FOR ALFALFA

ROSWELL FIELD OFFICE

	CU - IN./DAY			CIR - IN/DAY			ACIR - IN/DAY		
MONTH	PEAK	MEAN	LOW	PEAK	MEAN	LOW	PEAK	MEAN	LOW
APRIL	.14	.12	.05	.12	.10	.04	.13	.11	.04
MAY	.24	.20	.08	.19	.16	.06	.22	.18	.07
JUNE	.32	.27	.11	.28	.23	.09	.30	.25	.10
JULY	.35	.29	.12	.28	.23	.09	.31	.26	.10
AUG.	.30	.25	.10	.24	.20	.08	.28	.23	.09
SEPT.	.20	.17	.07	.14	.12	.05	.17	.14	.06
OCT.	.12	.10	.04	.07	.06	.02	.10	.08	.03

YEARLY VOLUME AT 100% EFFICIENCY		
CU	CIR	ACIR
41.7"	33.1"	37.4"

Consumptive use studies conducted on alfalfa at Fort Sumner, Portales, and Lovington by the SCS have given us a refined data base on which to make consumptive use computations.

Alfalfa, cut for hay once a month during the growing season, has a variable daily consumptive use rate which reaches a peak value just prior to cutting and a low value which occurs immediately after cutting.

To obtain a consumptive use value for planning or sizing a system, the mean value shown in the table should be used.

For irrigation depth and frequency determinations, the peak daily value is approximately 1.2 times the mean value, while the low value of daily consumptive use is approximately .4 times the mean daily value.

Alfalfa grown for seed production will have a consumptive use value equal to the peak value during full cover until the middle of full bloom.

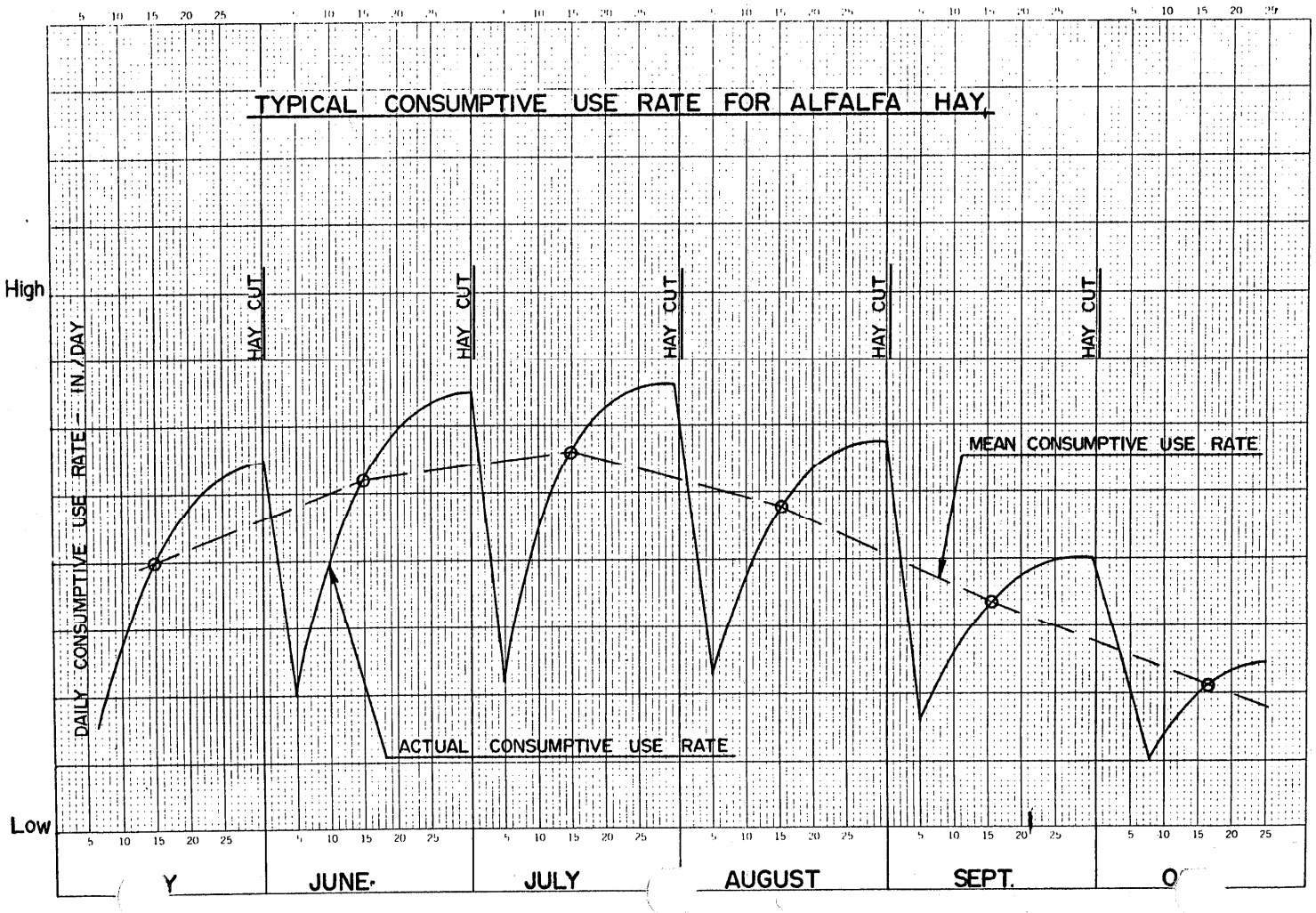
As irrigation pumping costs have increased, and many water supplies have dwindled, many alfalfa hay growers are aiming not at maximum hay production per acre, but rather at a maximum hay production per acre-inch of water applied. In areas where this is the grower's objective, a planning or sizing value of .85 to .9 times the mean is applicable to a system devoted to alfalfa hay.

The yearly volumes shown for CU, CIR, and ACIR are calculated using the mean value.

(Over)

K&E 6 MONTHS BY DAYS X 1/5 DIVISIONS
KEUFFEL & ESSER CO.

46 2610



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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Tabular Computations

CONSUMPTIVE USE REQUIREMENTS CC-TR21-4/81

FOR

ROSWELL FIELD OFFICE

CROP	MONTH	CU "/DAY	CIR "/DAY	ACIR "/DAY		TOTAL CU "/YEAR	TOTAL CIR "/YEAR	TOTAL ACIR "/YEAR
Cool								
Season	MAR.	.05	.03	.04		37.8	28.4	33.1
Irrigated	April	.10	.08	.09				
Pasture	May	.17	.14	.16				
	June	.22	.18	.20				
	July	.24	.18	.21				
	Aug.	.22	.17	.20				
	Sept.	.15	.10	.13				
	Oct.	.08	.04	.06				
	NOV.	.04	.03	.04				
Warm								
Season								
Irrigated	April	.10	.08	.09		35.2	26.6	30.9
Pasture	May	.17	.14	.16				
	June	.22	.18	.20				
	July	.24	.18	.21				
	Aug.	.22	.17	.20				
	Sept.	.15	.10	.13				
	Oct.	.08	.04	.06				

The consumptive use of irrigated pasture follows the same general fluctuations during the growing season as those shown for alfalfa, except that these changes are due to not only cutting for hay, but also grazing. Since the grazing intensity can vary greatly from farm to farm, no attempt has been made to plot these fluctuations. Therefore, the above data reflects the mean monthly or yearly values for the consumptive use of irrigated pasture.

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CROP	MONTH	CU "/DAY	CIR "/DAY	ACIR "/DAY		TOTAL CU "/YR	TOTAL CIR "/YR	TOTAL ACIR "/YR
COTTON	MAY	.01	—	—		18.6	10.2	14.4
	JUNE	.06	.02	.04				
	JULY	.15	.09	.13				
	AUG.	.24	.19	.22				
	SEPT.	.13	.08	.11				
	OCT.	.04	—	.02				
CHILE	MAY	—	—	—		17.4	10.3	13.9
	JUNE	.03	—	.02				
	JULY	.16	.10	.13				
	AUG.	.30	.25	.28				
	SEPT.	.08	.03	.06				

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CROP	MONTH	CU "/DAY	CIR "/DAY	ACIR "/DAY		TOTAL CU "/YR	TOTAL CIR "/YR	TOTAL ACIR "/YR
GRAIN SORGHUM	MAY	.12	.09	.11		28.3	21.6	25.0
	JUNE	.26	.22	.24				
	JULY	.27	.21	.24				
	AUG.	.19	.14	.17				
	SEPT.	.05	—	.03				
CORN (GRAIN)	MAY	.11	.08	.10		30.5	24.1	27.3
	JUNE	.23	.19	.21				
	JULY	.29	.23	.26				
	AUG	.25	.20	.23				
	SEPT.	.08	.03	.06				
CORN SILAGE	MAY	.10	.07	.09		29.4	23.0	26.2
	JUNE	.20	.16	.18				
	JULY	.29	.23	.26				
	AUG	.27	.22	.25				
	SEPT.	.08	.03	.06				
SPRING SMALL GRAIN	FEB.	.02	.01	.02		14.1	11.2	12.7
	MAR.	.07	.05	.06				
	APRIL	.16	.14	.15				
	MAY	.15	.12	.14				

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CROP	MONTH	CU "/DAY	CIR "/DAY	ACIR "/DAY		TOTAL CU "/YR	TOTAL CIR "/YR	TOTAL ACIR "/YR
WINTER SMALL GRAIN	SEPT.	.10 3.0	.05	.08		21.5	15.8	18.7
	OCT.	.11 3.3	.07	.09				
	NOV.	.07 2.1	.06	.07				
	MAR.	.10 3.0	.08	.09				
	APRIL	.16 4.8	.14	.15				
	MAY	.11 3.0	.08	.10				
PECANS 20-30' TOP DIA.	APRIL	.01	—	—		30.4	21.8	26.1
	MAY	.10	.07	.09				
	JUNE	.22	.18	.20				
	JULY	.23	.17	.20				
	AUG.	.21	.16	.19				
	SEPT.	.16	.11	.14				
	OCT.	.09	.05	.07				
PECANS 50'+ TOP DIA.	APRIL	.02	—	—		46.7	38.1	42.4
	MAY	.12	.09	.11				
	JUNE	.30	.26	.28				
	JULY	.37	.31	.34				
	AUG.	.34	.29	.32				
	SEPT.	.26	.21	.24				
	OCT.	.15	.11	.13				

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