

SOIL WATER BALANCE SHEET

Record crop, field name, and emergence date

Field **#5** Crop **CORN** Emergence date **13 May**
 Pumping Capacity **5** gpm per acre = **.23** net application inches per day
 Available Water Capacity **3.5** inches in root zone of **18** inches

Estimated net application amount **Table 1.**

Growth Stage **Vegetative** **Critical Growth** **Maturing**
 Allowable **6%** **3%** **6%**
 Soil Water Deficit **2.25** inches **1.25** inches **2.25** inches

Available water in root zone, **Table 15**

Allowable deficits for various crop growth stages.

Week after emergence date and growth stage.

Maximum temperature is recorded and water use estimated from **Tables 2-9.**

Water deficit is estimated each day by adding daily crop water use to previous day's balance and subtracting rain and irrigation.

Make a copy or cut appropriate water use chart from **Tables 2-9,** and place here before making copies of this page.

Week after emergence	Date	Soil water field reading	Maximum temperature	Add		Subtract		Soil water deficit	
				Crop water use	Rainfall	Net irrigation	A	B	
									INITIAL value →
5	6-10	50CBS						.70	.70
	11		63	.08				.78	.78
	12		64	.08				.86	.86
	13		68	.08				.94	.94
	14		77	.10				1.04	1.04
	15		73	.10	1.40			0	0
6	16		78	.10				0	0
	17		87	.15				.15	.15
	18		85	.15				.30	.30
	19		70	.12				.42	.42
	20		72	.12				.54	.54
	21		86	.15				.69	.69
7	22		85	.15				.84	.84
	23	70/80CBS	81	.15				.99	.99
	24		71	.15				1.14	1.14
	25		84	.18		.92		.40	1.32
	26		93	.21				.61	1.53
	27		70	.15				.76	1.68
8	28		67	.11				.87	.87
	29		68	.11		.92		.06	.98
	30		74	.15				.21	1.13
	7-1		81	.20				.41	1.33
	2		85	.20				.61	.61
	3		79	.16				.77	.77
9	4	40/70CBS = 8	90	.24		.92		.09	1.01
	5		75	.16				.25	1.17
	6		81	.20				.45	1.37
	7		89	.20				.65	1.57
	8		95	.26	.50			.41	.41
	9		85	.22				.63	.63
Silking	10		82	.22		.92		0	.85
	11		88	.22				.15	1.07
	12		79	.17				.32	1.24
	13		87	.22				.54	.54
	14		90	.26				.80	.80

Two locations in the field, **Figure 1.**

Initial deficits based on in-field measurements **Table 12 or 13.**

If rainfall exceeds previous day's deficit, soil water deficit may be held at zero for one or two extra days.

Soil water deficit should be regularly compared to in-field measurement and adjusted if different.

Irrigation is started early enough so deficit at end of field (b) does not exceed allowable deficit.

Table 2. Average water use for CORN in inches/day

Temperature °F	Week after emergence																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
50-59	.01	.02	.03	.04	.05	.06	.08	.09	.10	.10	.10	.09	.07	.06	.05	.04	.03	
60-69	.02	.03	.04	.05	.06	.08	.11	.12	.13	.14	.14	.13	.11	.09	.07	.06	.04	
70-79	.03	.04	.05	.07	.10	.12	.15	.16	.17	.19	.19	.18	.17	.14	.11	.09	.07	
80-89	.03	.05	.07	.10	.13	.15	.18	.20	.22	.24	.23	.22	.21	.17	.14	.11	.09	
90-99	.04	.06	.08	.11	.15	.18	.21	.24	.26	.28	.27	.26	.25	.20	.17	.13	.11	
Corn growth stages		↑ 3 leaf			↑ 8 leaf			↑ 1st tassel	↑ silk		↑ blister kernel			↑ early dent	↑ dent			