Table S1. Default and used values of crop parameters in Soil and Water Assessment Tool (SWAT) for long-term simulations.

No.	Parameter	Description	Default Value	Used Value	Source
		1. Irrigated grain corn scenario			
1	BLAI	Max leaf area index (m^2/m^2)	6	5.85	Measured *
2	FRGRW1	Fraction of the plant growing season corresponding to the first point on the optimal leaf area development curve	0.15	0.17	[1]
3	DLAI	Fraction of the plant growing season when leaf area begins to decline	0.7	0.85	[1]
4	RDMX	Maximum rooting depth	2.0	1.8	[1]
		2. Irrigated winter wheat scenario			
1	BIO_E	Biomass/energy ratio [(kg ha^{-1})/(MJ m^{-2})]	30	35	[2]
2	HVSTI	Harvest index [(kg ha^{-1})/(kg ha^{-1})]	0.4	0.45	[2]
3	BLAI	Max leaf area index (m^2/m^2)	4	6	Measured
		3. Irrigated cotton scenario			
1	BIO_E	Biomass/energy ratio [(kg ha^{-1})/(MJ m^{-2})]	15	17	[3]
2	HVSTI	Harvest index [(kg ha^{-1})/(kg ha^{-1})]	0.4	0.5	[4]
3	BLAI	Max leaf area index (m^2/m^2)	4	3.38	Measured
4	FRGRW1	Fraction of the plant growing season corresponding to the 1st point on the optimal leaf area development curve	0.15	0.18	[5]
5	DLAI	Fraction of the plant growing season when leaf area begins to decline	0.95	0.71	[5]
6	RDMX	Maximum rooting depth	2.5	2.0	[6]
		4. Irrigated soybean scenario			
1	HVSTI	Harvest index [(kg ha^{-1})/(kg ha^{-1})]	0.31	0.28	[5]
2	BLAI	Max leaf area index (m^2/m^2)	3	5.0	[5]
3	FRGRW2	Fraction of the plant growing season corresponding to the 2nd point on the optimal leaf area development curve	0.5	0.73	[5]
4	DLAI	Fraction of the plant growing season when leaf area begins to decline	0.6	0.89	[5]
		5. Irrigated sunflower scenario			
1	BIO_E	Biomass/energy ratio [(kg ha^{-1})/(MJ m^{-2})]	46	35	[7]
2	BLAI	Max leaf area index (m^2/m^2)	3	5.5	Measured
3	FRGRW2	Fraction of the plant growing season corresponding to the second point on the optimal leaf area development curve	0.5	0.70	[5]
4	DLAI	Fraction of the plant growing season when leaf area begins to decline	0.62	0.80	[5]
5	RDMX	Maximum rooting depth	2.0	2.2	[6]
		6. Irrigated grain sorghum scenario			
1	HVSTI	Harvest index [(kg ha^{-1})/(kg ha^{-1})]	0.45	0.50	[5]
2	BLAI	Max leaf area index (m^2/m^2)	3	3.5	Measured
3	FRGRW1	Fraction of the plant growing season corresponding to the first point on the optimal leaf area development curve	0.15	0.20	[5]

4	DLAI	Fraction of the plant growing season when leaf area begins to decline	0.64	0.70	[5]
5	RDMX	Maximum rooting depth	2.0	1.5	[6]
		7. Dryland winter wheat scenario			
1	BLAI	- -	4.0	5.0	Measured
		8. Dryland cotton scenario			
1	BLAI	- -	4.0	1.12	Measured
2	FRGRW1	- -	0.15	0.14	[8]
3	FRGRW2	- -	0.5	0.33	[8]
4	DLAI	- -	0.95	0.43	[8]
5	RDMX	- -	2.5	2.0	[6]
		9. Dryland soybean scenario			
1	BLAI	- -	3	1.95	Measured
2	DLAI	- -	0.6	0.7	[8]
		10. Dryland sunflower scenario			
1	BIO_E	- -	46	30	[7]
2	HVSTI	- -	0.3	0.22	[8]
3	BLAI	- -	3	2	Measured
4	FRGRW2	- -	0.5	0.70	[8]
5	DLAI	- -	0.62	0.80	[8]
6	RDMX	- -	2.0	2.2	[6]
		11. Dryland grain sorghum scenario			
1	BLAI	- -	3	2.62	Measured
2	FRGRW1	- -	0.15	0.17	[8]
3	FRGRW2	- -	0.5	0.42	[8]
4	DLAI	- -	0.64	0.62	[8]
5	RDMX	- -	2.0	1.5	[6]

* Field measured maximum leaf area index.

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