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ACRONYMS, ABBREVIATIONS AND DEFINITIONS

ABA	Abscisic acid
ACC	1- aminocyclopropane –1- carboxylic acid
Aerated solution	aeration in solution
Aerenchyma formation	intercellular space in the root tissue
ADH	alcohol dehydrogenase
Anoxia	complete lack of O ₂
CGR	crop growth rate; g /m ² /day or g /plants /day
GGR	grain growth rate; g /m ² /day or g /plants /day
Hypoxia	low, but not zero O ₂
LDH	lactate dehydrogenase
LGR	leaf growth rate; g /m ² /day or g /plants /day
LCE	leaf chlorophyll efficiency
NR	nitrate reductase
PPFD	photosynthetic photon flux density; μmole /m ² /s
RGR	root growth rate; g /m ² /day or g /plants /day
StGR	stem growth rate; g /m ² /day or g /plants /day
Stagant solution	unstirred solution
Transient waterlogging	saturated soil water holding for 2-3 days

Listings of the definitions and symbols in the simulation model :

ActTemp	the actual air temperature at the time; °C
AerPhs	photosynthetic rate under aerated solution; μmoleCO ₂ /m ² /day
ConVCO ₂	to convert kg CO ₂ /ha /hr to g CO ₂ /m ² /hr
ConVertDM	the conversion to dry matter; g glucose /m ² /hr
ConvPAR	the conversion to PAR ; joules /m ² /s

GrossPhs	the rate of gross photosynthesis; kg CO ₂ /ha /hr
Initial_TDM	the initial total dry matter of plants; g /plants /day
LeafTFct	the fraction of leaf photosynthetic rate depended on temperature levels
MaxDailyTemp	the daily maximum air temperature; °C
Model	a simplified representation of a system. A submodel is a model of a subsystem.
Module	A set of statements in a computer language that together describes a system or a large part of a system.
NetGlu	net glucose concentration converted from CO ₂ fixation process; mole glucose /m ² /hr
PAR	photosynthetically active radiation; W /m ²
PhsAssimHr	net photosynthetic rate; g /m ² /day
PhsBar	selection of photosynthetic rate depended on water treatments
PhsRate	the actual photosynthetic rate; g /plants /day
PLEA	initial efficiency use absorbed light by individual leaves at the optimum temperature; (kg CO ₂ / ha /hr) / (J /m ² /s)
PLMX	the maximum rate of leaf photosynthesis of individual leaves at the optimum temperature at 340 ppm CO ₂ ; kg CO ₂ /ha /hr
Q ₁₀	Q ₁₀ of maintainece respiration sensitivity to temperature
RtDM	the root dry matter accumulation; g /plants /day
RtGRate	the rate of root dry matter accumulation; g /plant/day
RtParFct	the ratio of dry matter partitioning to the roots
RtResMain	the effect of temperature on the root respiration maintenance
ShDM	the shoot dry matter accumulation; g /plants /day
ShGRate	the rate of shoot dry matter accumulation; g /plants/day
ShParFct	the ratio of dry matter partitioning to the shoots
ShResMain	the effect of temperature on the shoot respiration maintenance
Simulation model	A module that represents the relevant processes of a system,

	usually in the form of a computer program.
SolarChmbFct	the fraction of PAR changes in the growth chambers
TempChmbFct	the fraction of air temperature changes in the growth chambers
The Sellar [®] program	a program for simulation models
VS_SolarRad	visual solar radiation on the leaves; $\mu\text{mole quanta /m}^2 /s$
VS_SolarRadiation	the daily maximum PAR in growth chamber; $\mu\text{mole quanta /m}^2 /s$
Water_treatment	the selected option for water treatments in the program
WLPPhs	the photosynthetic rate under hypoxia; $\text{mole CO}_2 /m^2 /day$



the connector; the job of the connector is to connect elements, such as converter to flow, stock to flow and stock to converter.



Variable1

the converter; to serve a utilitarian role in the software. It holds values for constants, calculates algebraic relationships, and serves as the repository for graphical function.



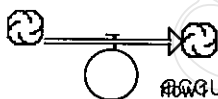
Variable2

the star inside the converter, means must input data as independent variable.



Stock1

the accumulated stock type. If it has a star inside the stock, it means to be independent stock which must input the data.



accumulation.

the flow rate; it is the job of flows is to fill and drain

The unfilled arrow head on the flow pipe indicates the direction of the flow.