

Supplementary Table XX. Parameter values and their units as used in the two crop simulation model scenario in the greenhouse and plant factory set-up

Description	Parameter	Unit	Value	Scenario
<b>Crop</b>				
Fraction dry matter harvested product	$\Theta_d$	-	0.048	3,4
Target harvest fresh weight	$FW_t$	g plant <sup>-1</sup>	100	3,4
plant density	$\rho_p$	-	36	3,4
Maximum leaf area index	$LAI_{max}$	-	1.6	3,4
Superficial chlorophyll density	$\rho_{chl}$	-	0.45	3,4
Fraction PAR absorbed by non-photosynthetic parts	$\Theta_{PAR}$	-	0.1	3,4
<b>Climate</b>				
Setpoint minimum daily light integral greenhouse	$DLI_{set,GH}$	mol m <sup>-2</sup> d <sup>-1</sup>	12	3
Setpoint minimum daily light integral plant factory	$DLI_{set,VF}$	mol m <sup>-2</sup> d <sup>-1</sup>	20	4
Setpoint temperature heating day	$T_{h,d}$	°C	18	3,4
Setpoint temperature heating night	$T_{h,n}$	°C	16	3,4
Setpoint temperature ventilation day	$T_{v,d}$	°C	22	3
Setpoint temperature ventilation night	$T_{v,n}$	°C	22	3
Setpoint temperature cooling	$T_c$	°C	18.5	4
Setpoint maximum humidity	$RH_s$	%	82.5	3,4
Setpoint daytime minimum CO <sub>2</sub>	$C_s$	μmol mol <sup>-1</sup>	700	3,4

Cultivation				
LED light energy conversion	$I$	$\text{mol J}^{-1}$	2.4	3,4
Fraction diffuse light transmission greenhouse	$\Theta_{I,Tr}$	-	0.8	3
Net crop production area greenhouse	$A_{\text{crop,GH}}$	$\text{m}^2$	70	3
Net crop production area plant factory	$A_{\text{crop,VF}}$	$\text{m}^2$	70	4
Heights vertical production layer	$h_{VF}$	m	0.5	4
Number vertical production layers	$N_{VF}$	-	4	4
Total volume production unit greenhouse	$V_{GH}$	$\text{m}^3$	280	3
Total volume production unit plant factory	$V_{VF}$	$\text{m}^3$	60	4