

### List of variables used in SUCROS-Cotton

| Variable   | Description   | Unit   |
|------------|---|--|
| AFGEN      | FST function for linear interpolation   |  |
| AGE        | Fruit age: square, 1-22; flower, 23-25; small boll, 26-33; big boll, 34-74; green boll, 60-74   | d after squaring   |
| AMAX       | Actual CO <sub>2</sub> assimilation rate at light saturation for individual leaves  | kg CO <sub>2</sub> ha <sup>-1</sup> leaf h <sup>-1</sup> |
| AMPDT      | Factor accounting for effect of physiological development time (PDT) on AMX   | -  |
| AMPDTT     | Table of AMPDT as function of PDT   | -  |
| AMTMP      | Factor accounting for effect of daytime temperature on AMX  | -  |
| AMX        | Potential CO <sub>2</sub> assimilation rate at light saturation for individual leaves   | kg CO <sub>2</sub> ha <sup>-1</sup> leaf h <sup>-1</sup> |
| AOB        | Intermediate variable   | -  |
| AROOT      | Actual root weight  | kg DM ha <sup>-1</sup>                                   |
| ARRAY      | FST function for an array   | -  |
| ARRAY_SIZE | FST function for array size   | -  |
| ARSUMM     | FST function for summation of array elements  | -  |
| ASHOOT     | Actual shoot weight   | kg DM ha <sup>-1</sup>                                   |
| ASIN       | Fortran function arcsine  | -  |
| ASRQ       | Factor accounting for physiological development temperature (PDT) on assimilate (CH <sub>2</sub> O) requirement for dry matter production             | kg CH <sub>2</sub> O kg <sup>-1</sup> DM                 |
| ASRQTB     | Table of ASRQ as function of PDT  |  |
| ASSIMS     | Subroutine to perform a Gaussian integration over depth of a canopy by selecting three different LAIs and computing assimilation at these LAI levels. |  |
| ASTRO      | Subroutine to calculate day length  |  |
| ATMTR      | Atmospheric transmission coefficient  | -  |
| BALNCE     | Check   | -  |
| BBOLL      | Number of Big boll per plant  | no plant <sup>-1</sup>                                   |
| BIOMUP     | Dry matter of shoot   | kg DM ha <sup>-1</sup>                                   |
| BOLL       | Array of fruit number, from first stages(1,square) to the last stage (74, boll at one day before open)  | no plant <sup>-1</sup>                                   |
| BOLL0      | Initialization of number of open boll   | no   |
| BOLLI      | Initialization of number of fruit array   | no   |
| BOLLW      | Array of fruit weight, from first stages(1,square) to the last stage (74, boll at one day before open)  |  |
| BOLLW0     | The initial weight of fruit   | g fruit <sup>-1</sup>                                    |
| BOLTOT     | Total number of fruit per plant   | no plant <sup>-1</sup>                                   |
| CBOLL      | Concentration of number of boll   | -  |
| CLUSTF     | Cluster factor  | -  |

|         |   |   |
|---------|---|---|
| CNTR    | FST variable for country name (in WEATHER)  | -   |
| CORRV1  | Intermediate variable   | -   |
| CORRV2  | Intermediate variable   | -   |
| COS     | Fortran function cosine   | -   |
| COSLD   | Intermediate variable in calculating solar height   | -   |
| COTGRE  | Seed cotton yield of green boll   | kg seedcotton ha <sup>-1</sup>  |
| COTOUT  | Seed cotton yield of open boll  | kg seedcotton ha <sup>-1</sup>  |
| COTR    | Ratio of total seed cotton yield in total boll weight, another part is shell weight                           | -   |
| COTT    | Seed cotton of total fruit from 1 to 74 stages  | kg seedcotton ha <sup>-1</sup>  |
| COTTON  | Seed cotton yield including open boll and green boll  | kg seedcotton ha <sup>-1</sup>  |
| CUT     | The day that cut the top of plant to stop growth  | d   |
| CUTOFF  | Switch of Cut, 0 is not cut , 1 is cut the top  | -   |
| CWBOLL  | Concentration of fruit weight   | -   |
| DAYL    | Day length  | h d <sup>-1</sup>   |
| DEC     | Declination of the sun  | radians   |
| DELT    | Time interval of integration  | d   |
| DENOM1  | Intermediate variable   | -   |
| DENOM2  | Intermediate variable   | -   |
| DLTB    | Table for effect of relative photoperiod in relation to day length  | -   |
| DOY     | Day number of year since 1 January (is day 1)   | d   |
| DSINBE  | Integral of SINB over the day, with a correction for lower atmospheric transmission at lower solar elevations | s d <sup>-1</sup>   |
| DTGA    | Daily total gross CO2 assimilation of the crop  | kg CO <sub>2</sub> ha <sup>-1</sup> ground d <sup>-1</sup>  |
| DTR     | Daily solar radiation   | J m <sup>-2</sup> d <sup>-1</sup>   |
| DYNAMIC | FST function for dynamic part of the simulation   |   |
| EFF     | Initial light conversion factor for individual leaves   | kg CO <sub>2</sub> ha <sup>-1</sup> leaf h <sup>-1</sup><br>(J m <sup>-2</sup> leaf s <sup>-1</sup> ) <sup>-1</sup> |
| ENDJOB  | FST function ends the simulation  |   |
| ETA1    | Intermediate variable   | -   |
| ETA2    | Intermediate variable   | -   |
| EXP     | Fortran for exponential function  |   |
| FAL2TB  | Table for effect of abscission because of pests in relation to PDT  | -   |
| FAL3TB  | Table for effect of abscission in relation to high temperature (TAV)  | -   |
| FALL1   | Abscission due to dry matter stress   | -   |
| FALL2   | Abscission due to pest injury   | -   |
| FALL3   | Abscission due to high temperature  | -   |
| FALLBL  | Total number of abscission fruit per plant  | no plant <sup>-1</sup>  |
| FALLTB  | Table for effect of abscission in relation to dry matter stress   | -   |

|        |  |  |
|--------|--|--|
| FBA    | Actual fruit branch number   | no plant <sup>-1</sup>   |
| FBAD   | Differential fruit branch number   | no plant <sup>-1</sup>   |
| FBAP   | Potential fruit branch number  | no plant <sup>-1</sup>   |
| FBAV   | Actual fruit branch number calculated according to the relation with leaf number | no plant <sup>-1</sup>   |
| FBAV1  | Intermediate variable  | -  |
| FBLTB  | Table of fraction of shoot dry matter allocated to fruit as function of PDT      | -  |
| FFB    | The number of main stem leaf after which the first fruit branch initiates        | -  |
| FGL    | CO <sub>2</sub> assimilation rate at one depth in the canopy                     | kg CO <sub>2</sub> ha <sup>-1</sup> leaf h <sup>-1</sup><br>kg CO <sub>2</sub> ha <sup>-1</sup> ground h <sup>-1</sup> |
| FGROS  | Instantaneous canopy CO <sub>2</sub> assimilation                                | 1  |
| FGRS   | Intermediate variable for calculation of assimilation of sunlit leaves           | -  |
| FGRSH  | CO <sub>2</sub> assimilation rate at one depth in the canopy for shaded leaves   | kg CO <sub>2</sub> ha <sup>-1</sup> leaf h <sup>-1</sup>   |
| FILM   | Effect of film mulching, 0 is non film, 1 is with film                           | -  |
| FINTIM | FST variable for finish time of simulation                                       | -  |
| FLOW   | Flow by which a state variable is change   | -  |
| FLOWER | Number of flower per plant   | no plant <sup>-1</sup>   |
| FLT    | Effect of temperature  | -  |
| FLT1   | Intermediate   | -  |
| FLT2   | Intermediate   | -  |
| FLV    | Fraction of shoot dry matter allocated to leaves                                 | -  |
| FLVTB  | Table of FLV as function of PDT  | -  |
| FN     | Number of fruit node per plant   | no plant <sup>-1</sup>   |
| FNAVM  | Maximum number of fruit node per plant   | no plant <sup>-1</sup>   |
| FNTB   | Table of fruit node as a function of number of fruit branch                      | -  |
| FRDF   | Fraction diffuse in incoming radiation   | -  |
| FSLLA  | Fraction of sunlit leaf area   | -  |
| FSMTB  | Table of fraction of shoot dry matter allocated to stem as function of PDT       | -  |
| GAMMA  | Developmental width of fruit in boxcar train                                     | -  |
| GF     | Total Development stage of fruit in boxcar train                                 | -  |
| GI     | Initialization of G  | -  |
| G      | Actual development stage of fruit in boxcar train                                | -  |
| GLAI   | Net growth rate of leaf area index   | ha leaf ha <sup>-1</sup> ground d <sup>-1</sup>  |
| GOTGRN | Lint percentage of green boll  | -  |
| GOTOUT | Lint percentage of open boll   | -  |
| GPHOT  | Daily total gross CH <sub>2</sub> O assimilation of the crop                     | kg CH <sub>2</sub> O ha <sup>-1</sup> ground d <sup>-1</sup>   |
| GREBL  | Number of green boll per ha  | no ha <sup>-1</sup>  |
| GREBLW | Total weight of green boll per ha  | kg DM ha <sup>-1</sup> ground  |

|         |   |   |
|---------|---|---|
| GREENB  | Number of green boll per plant  | no plant <sup>-1</sup>                        |
| GROWTH  | Available dry matter for daily growth related long term pool                                      | kg DM ha <sup>-1</sup> ground d <sup>-1</sup> |
| GTW     | Gross growth rate of crop dry matter, including translocation                                     | kg DM ha <sup>-1</sup> ground d <sup>-1</sup> |
| HEIGHT  | Plant height  | cm  |
| HOUR    | Selected hour during the day  | h   |
| I1, I2  | Do-loop counters  | -   |
| IABS    | Instantaneous radiation absorbed  | J m <sup>-2</sup> ground s <sup>-1</sup>      |
| IABSD   | Irradiation absorbed of a daily total   | J m <sup>-2</sup> ground d <sup>-1</sup>      |
| IABSL   | Instantaneous radiation absorbed per unit leaf area   | J m <sup>-2</sup> leaf s <sup>-1</sup>        |
| IABSUN  | Direct flux absorbed by leaves perpendicular on direct beam and assimilation of sunlit leaf area  | J m <sup>-2</sup> leaf s <sup>-1</sup>        |
| IE      | Coefficient for air temperature compensation due to soil temperature increase under film mulching | -   |
| IGAUSS  | Do-loop counter   | -   |
| ILAI    | Initial leaf area index   | ha leaf ha <sup>-1</sup> ground               |
| INFL    | Inflow in the boxcar  |   |
| INITIAL | FST function for initialization   |   |
| INSW    | FST function for input switch   |   |
| INTERC  | Wheat-cotton intercropping system (1: intercropping; 0: monoculture)                              |   |
| INTGRL  | FST function for integration  |   |
| IREFL   | Reflected flux by leaves  | J m <sup>-2</sup> s <sup>-1</sup>             |
| IROOT   | Initialization of root dry matter   | kg DM ha <sup>-1</sup>                        |
| ISHOT   | Initialization of shoot dry matter  | kg DM ha <sup>-1</sup>                        |
| ISOIL   | Reflected flux by soil  | J m <sup>-2</sup> s <sup>-1</sup>             |
| ISTEM   | Initialization of stem dry matter   | kg DM ha <sup>-1</sup>                        |
| ISTN    | FST variable for station number (in WEATHER)  | -   |
| ITOT    | Instantaneous total radiation   | J m <sup>-2</sup> s <sup>-1</sup>             |
| IW      | Initialization of total dry matter  | kg DM ha <sup>-1</sup>                        |
| IWBOLL  | Initialization of fruit dry matter  | kg DM ha <sup>-1</sup>                        |
| IWLV    | Initialization of stem dry matter   | kg DM ha <sup>-1</sup>                        |
| IYEAR   | FST variable for initial year (in WEATHER)  | -   |
| KBL     | Extinction coefficient for direct component of direct PAR flux                                    | ha ground ha <sup>-1</sup> leaf               |
| KDF     | Extinction coefficient for leaves   | ha ground ha <sup>-1</sup> leaf               |
| KDRT    | Extinction coefficient for total direct PAR flux  | ha ground ha <sup>-1</sup> leaf               |
| LAI     | Leaf area index   | ha leaf ha <sup>-1</sup> ground               |
| LAIC    | Leaf area index above selected height in canopy   | ha leaf ha <sup>-1</sup> ground               |
| LAT     | Latitude of the weather station   | degrees                                       |
| LDTB    | Table effect of daylength as a function of daylength  | -   |
| LEAFA   | Actual leaf number  | no plant <sup>-1</sup>                        |

|        |   |   |
|--------|---|---|
| LEAFD  | Differential leaf number  | no plant <sup>-1</sup>                                |
| LEAFM  | Maximum leaf number after plant cut                                       | no plant <sup>-1</sup>                                |
| LEAFP  | Potential leaf number   | no plant <sup>-1</sup>                                |
| LINT   | Lint yield per ha   | kg lint ha <sup>-1</sup>                              |
| LINTG  | Lint yield per ha contributed by green boll                               | kg lint ha <sup>-1</sup>                              |
| LINTM  | Lint yield of open boll per Chinese mu, 1 ha=15 mu                        | kg lint mu <sup>-1</sup>                              |
| LINTO  | Lint yield per ha contributed by open boll                                | kg lint ha <sup>-1</sup>                              |
| LINTT  | Total Lint yield per mu including green and open boll                     | kg lint mu <sup>-1</sup>                              |
| MAINT  | Maintenance respiration rate of the crop                                  | kg CH <sub>2</sub> O ha <sup>-1</sup> d <sup>-1</sup> |
| MAX    | Fortran function to choose maximum value                                  | -   |
| MIN    | Fortran function to choose minimum value                                  | -   |
| MINTS  | Maintenance rate of plant in different organs                             | kg CH <sub>2</sub> O ha <sup>-1</sup> d <sup>-1</sup> |
| MNPDT  | Effect of Maintenance rate on related to PDT                              | -   |
| MNPDTT | Table of effect to maintenance as a function of PDT                       | -   |
| MNTE   | Effect of maintenance rate on related to temperature                      | -   |
| N      | Array size  | -   |
| NETFLO | Net inflow to boxcar  | -   |
| NOTNUL | FST function to avoid division by zero                                    | -   |
| OPENBL | Open boll number per ha   | no ha <sup>-1</sup>                                   |
| OPENBW | Open boll dry matter per ha   | kg DM ha <sup>-1</sup>                                |
| OUTFL  | Out flow of boxcar  | -   |
| PAR    | Instantaneous flux of photosynthetically active radiation                 | J m <sup>-2</sup> ground s <sup>-1</sup>              |
| PARDF  | Instantaneous diffuse flux of incoming PAR                                | J m <sup>-2</sup> ground s <sup>-1</sup>              |
| PARDR  | Instantaneous direct flux of incoming PAR                                 | J m <sup>-2</sup> ground s <sup>-1</sup>              |
| PDT    | Physiological development time: Physiological day under optimal condition | -   |
| PI     | Ratio of circumference to diameter of circle                              | -   |
| PIROOT | Partitioning index for total dry matter allocated to root                 | -   |
| PISHOT | Partitioning index for total dry matter allocated to shoot                | -   |
| PLANTS | Plant density   | plant   |
| POOL   | Long-term pool  | kg DM ha <sup>-1</sup>                                |
| PRDEL  | FST variable for printing interval  | -   |
| PRINT  | FST function for output   | -   |
| RAD    | Factor to convert degrees to radians                                      | radians degree <sup>-1</sup>                          |
| RBOLL  | The rate of development fruit array in boxcar                             | -   |
| RCGRE  | Ratio of seed cotton to dry matter of green boll                          | -   |
| RCOUT  | Ratio of seed cotton to dry matter of open boll                           | -   |
| RDD    | Total daily global radiation (from WEATHER)                               | J m <sup>-2</sup> d <sup>-1</sup>                     |
| RROOT  | Relative root decease rate  | d <sup>-1</sup>                                       |

|        |   |  |
|--------|---|--|
| RDTB   | Table of RDROOT as a function of PDT  | -                                      |
| REFH   | Reflection coefficient for diffuse PAR  | -                                      |
| REFS   | Reflection coefficient for direct PAR   | -                                      |
| RFBR   | Initiate rate of fruit branch   | no plant <sup>-1</sup> d <sup>-1</sup> |
| RFBR1  | Intermediate variable   | -                                      |
| RFBR2  | Intermediate variable   | -                                      |
|        | Relative thermal effectiveness under film                                       |  |
| RFEE   | mulching  | -                                      |
| RFNR   | Initiate rate of fruit node   | no plant <sup>-1</sup> d <sup>-1</sup> |
| RFNR1  | Intermediate variable   | -                                      |
| RFNR2  | Intermediate variable   | -                                      |
|        | Actual rate of root dry matter growth related to                                |  |
| RGRA   | RDROOT  | kg DM ha <sup>-1</sup> d <sup>-1</sup> |
| RGRM   | Potential rate of root dry matter growth  | kg DM ha <sup>-1</sup> d <sup>-1</sup> |
| RGUP   | Rate of shoot dry matter growth   | kg DM ha <sup>-1</sup> d <sup>-1</sup> |
| RHOS   | Fraction of soil reflection of radiation flux                                   | -                                      |
| RHR    | Rate of plant height growth   | cm d <sup>-1</sup>                     |
| RHR1   | Intermediate variable   | -                                      |
| RHR2   | Intermediate variable   | -                                      |
| RLDR   | Relative LAI decrease rate  | d <sup>-1</sup>                        |
| RLDR1  | Leaf decrease rate  | no plant <sup>-1</sup> d <sup>-1</sup> |
| RLDRTB | Table of RLDR as a function of PDT  | -                                      |
| RLINT  | Average lint percentage   | -                                      |
| RLR    | Actual rate of leaf number development  | no plant <sup>-1</sup> d <sup>-1</sup> |
| RLR1   | Intermediate variable   | -                                      |
| RLR2   | Intermediate variable   | -                                      |
| RLR3   | Intermediate variable   | -                                      |
| RMBOLL | Relative growth rate of fruit to the age of fruit                               | age <sup>-1</sup>                      |
| ROOT   | Potential root weight related to RGRM   | kg DM ha <sup>-1</sup>                 |
| ROOTA  | Actual root weight related to RGRA  | kg DM ha <sup>-1</sup>                 |
| ROOTTB | Table of RGRM as a function of PDT  | -                                      |
| RPBO   | The dry matter accumulation due to supply is higher than demand of fruit organs | kg DM ha <sup>-1</sup> d <sup>-1</sup> |
| RPDT   | Rate of PDT development   | PDT d <sup>-1</sup>                    |
| RPE    | Relative photoperiod effectiveness  | -                                      |
| RPUP   | Rate of long term pool growth   | kg DM ha <sup>-1</sup> d <sup>-1</sup> |
| RTE    | Relative thermal effectiveness  | -                                      |
| RTEBOL | RTE effect in boll maturing stage in the boxcar                                 | -                                      |
| RTEBTB | Table of RTEBOL as a function of temperature                                    | -                                      |
| RTEE   | RTE before emergence  | -                                      |
| RTEE1  | RTE related soil temperature without film                                       | -                                      |
| RTEFSB | Table of RTEE1 as a function of soil temperature                                | -                                      |
| RTESTB | Table of RFEE as a function of soil temperature with film mulching              | -                                      |
|        | Table of RTE after emergence as a function of air temperature                   |  |
| RTETB  |   | -                                      |

|        |   |   |
|--------|---|---|
| RWB    | Array of dry matter demand of fruit   | kg DM d <sup>-1</sup>                         |
| RWBAGE | Rate of fruit dry matter growth against fruit age   | g DM age <sup>-1</sup>                        |
| RWBL   | Rate of fruit dry matter growth   | kg DM ha <sup>-1</sup> d <sup>-1</sup>        |
| RWBOL  | Array of fruit dry matter growth rate   | -   |
| RWBT   | Daily dry matter demand of total fruit growth   | -   |
| RWLV   | Rate of leaf dry matter growth  | kg DM ha <sup>-1</sup> d <sup>-1</sup>        |
| RWSM   | Rate of stem dry matter growth  | kg DM ha <sup>-1</sup> d <sup>-1</sup>        |
| SBOLL  | Number of small boll per plant  | no plant <sup>-1</sup>                        |
| SC     | Solar constant, corrected for varying distances between sun-earth   | J m <sup>-2</sup> s <sup>-1</sup>             |
| SCP    | Scattering coefficient of leaves for PAR  |   |
| SCR    | Rate of dry matter used from long term pool   | kg DM ha <sup>-1</sup> d <sup>-1</sup>        |
| SEDCOT | Array of seed cotton dry matter against fruit array   | g plant <sup>-1</sup>                         |
| SHELL  | Array of shell dry matter against fruit array   | g plant <sup>-1</sup>                         |
| SIN    | Fortran function for sine   | -   |
| SINB   | Sine of solar elevation   | -   |
| SINLD  | Intermediate variable in calculating solar declination  | -   |
| SLA    | Specific leaf area  | m <sup>2</sup> (ha) leaf g <sup>-1</sup> leaf |
| SLATB  | Table for relationship SLA and PDT  |   |
| SQRT   | Fortran function for square root  |   |
| SQUARE | Number of squares per plant   | no plant <sup>-1</sup>                        |
| SQV    | Intermediate variable in calculation of reflection coefficient  | -   |
| STOP   | FST variable to stop the simulation   |   |
| STRBL1 | Intermediate variable   |   |
| STRBOL | Ratio of dry matter supply and demand for fruit growth and development  | -   |
| STRESS | Array of stress of dry matter boll filling  | -   |
| STTIME | FST variable to start the simulation  |   |
| TAV    | Average air temperature   | degree C                                      |
| TAV1   | Average air temperature plus compensation effectiveness due to film mulching  | degree C                                      |
| TDRW   | Total dry matter  | kg DM ha <sup>-1</sup>                        |
| TETMP  | Intermediate variable in calculation of IE  | -   |
| TIME   | FST variable of time  | -   |
| TIMER  | FST function for time   | -   |
| TIN    | Daily average temperature in wheat-cotton intercropping systems   | degree C                                      |
| TIPLUS | The compensation to air temperature due to film mulching and increase of soil temperature in wheat-cotton intercropping systems | degree C                                      |
| TISAV  | Soil temperature in wheat-cotton intercropping systems  | degree C                                      |
| TISCAV | Soil temperature with covering plastic film in wheat-cotton intercropping systems   | degree C                                      |

|         |   |  |
|---------|---|--|
| TMMN    | Daily minimum temperature (from WEATHER)  | degree C                               |
| TMMN1   | Daily minimum temperature under film mulching   | degree C                               |
| TMMX    | Daily maximum temperature (from WEATHER)  | degree C                               |
| TMMX1   | Daily maximum temperature under film mulching   | degree C                               |
| TMIN    | Daily maximum temperature in wheat-cotton intercropping systems                           | degree C                               |
| TNIN    | Daily minimum temperature in wheat-cotton intercropping systems                           | degree C                               |
| TOTASS  | FORTTRAN subroutine to calculate gross CO <sub>2</sub> assimilation of the crop           | -                                      |
| TPLUS   | The compensation to air temperature due to film mulching and increase of soil temperature | degree C                               |
| TSAV    | Average soil temperature  | degree C                               |
| TSCAV   | Average soil temperature under film mulching  | degree C                               |
| VI      | Variety maturity index  | -                                      |
| VISD    | Absorbed direct component of direct flux per unit leaf area (at depth LAIC)               | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| VISDF   | Absorbed diffuse flux per unit leaf area (at depth LAIC)                                  | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| VISPP   | Absorbed light flux by leaves perpendicular on direct beam                                | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| VISSHD  | Total absorbed flux for shaded leaves per unit leaf area (at depth LAIC)                  | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| VISSUN  | Total absorbed flux for sunlit leaves in one of three Gauss point classes                 | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| VIST    | Absorbed total direct flux per unit leaf area (at depth LAIC)                             | J m <sup>-2</sup> leaf s <sup>-1</sup> |
| WBAGE   | Array of single fruit weight  | g DM fruit <sup>-1</sup>               |
| WBBO    | Weight of open boll   | kg DM ha <sup>-1</sup>                 |
| WBMAX   | Maximum single boll weight  | g DM fruit <sup>-1</sup>               |
| WBOLL   | Array of fruit weight in boxcar   | g DM plant <sup>-1</sup>               |
| WBOLLP  | Array of potential weight of fruit in boxcar  | g DM plant <sup>-1</sup>               |
| WBOUT   | Weight of open boll per plant   | g DM plant <sup>-1</sup>               |
| WBP     | Total dry matter demand   | kg DM ha <sup>-1</sup>                 |
| WBSUM   | Total dry matter of fruit   | kg DM ha <sup>-1</sup>                 |
| WBTOT   | Total dry matter of fruit except open boll  | g DM plant <sup>-1</sup>               |
| WEATHER | FST function to call weather subroutine   | -                                      |
| WFLO    | Weight of flowers per plant   | g DM plant <sup>-1</sup>               |
| WFLOW   | Flow of fruit dry matter in boxcar  |  |
| WGAUSS  | Array containing weights to be assigned to Gauss points                                   | -                                      |
| WGREEN  | Weight of green boll  | kg DM ha <sup>-1</sup>                 |
| WINFL   | Inflow of fruit dry matter in boxcar  |  |
| WLEAF   | Total dry matter of leaves  | kg DM ha <sup>-1</sup>                 |
| WNETFL  | Net flow of fruit dry matter in boxcar  |  |
| WOUTFL  | Out flow of fruit dry matter in boxcar  |  |

|        |  |                           |
|--------|--|---------------------------|
| WSBO   | Total dry matter of small bolls                    | kg DM ha <sup>-1</sup>    |
| WSOUT  | Total dry matter of open bolls                     | kg DM ha <sup>-1</sup>    |
| WSQU   | Total dry matter of squares                        | kg DM ha <sup>-1</sup>    |
| WSTEM  | Total dry matter of stem                           | kg DM ha <sup>-1</sup>    |
| WTRDIR | FST variable for weather directory                 | -                         |
| XGAUSS | Array containing Gauss points                      | -                         |
| YIELDB | Total number of boll those contribute to yield     | no fruit ha <sup>-1</sup> |
| YIELDW | Total dry matter of boll those contribute to yield | kg DM ha <sup>-1</sup>    |
| ZERO   | Initial value of zero in an integration            |                           |