



# Manual: Initialization of stands

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## 2. Introduction

Initialization is separated from simulation. If it is necessary to initialize one stand or several stands then:

- Simulate the model with an explicit initialization sim-file (flag\_stand=2 or flag\_stand=0).  
A file <name>.ini and <name>.initctrl (only for information) is generated.
- Use the generated ini-file in a new sim-file as input for a simulation with flag\_stand=1.
- If an initialization file with several ini-data sets is used and flag\_multi = 1, the number of the used initialization is required in the sim-file (row 7 below the row ! \*\* input).

## 3. Several stands with averaged stand data (number > 1)

It requires flag\_stand = 2 in the simulation control file.

### 3.1. Dialogue

```
C:\D:\4c_v1.1\4c1.3\4C\4C\debug\4c.exe

>>>FORESEE message: Cannot find data of litter initialisation - internal calculation

Stand initialization file not exists!
Stand initialization with new file
Creating new file (y/n): y

*** Choice of forest stand data set:
1 - Datenspeicher Waldfond
2 - single tree data; classification must be performed (e.g. SILVA data)
3 - Level2-data
4 - already existing class file
5 - FORGRA data
6 - Bavarian inventory data
***Make your choice: 1

peitz150_2_61eb1
Forest stand data set: Datenspeicher Waldfond
choose data set (multi/singl):
multi
file name (with directory):
input/peitz150.dat
```

### 3.2. Structure of the input file

Example for three stands (txt-file, numbers separated by space):

|   |   |   |   |   |   |   |    |    |     |     |      |       |   |   |
|---|---|---|---|---|---|---|----|----|-----|-----|------|-------|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 62 | 1.0 | 9.2 | 10.4 | 29.5  | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 67 | 1.0 | 9.9 | 11.4 | 31.01 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 62 | 1.0 | 9.0 | 10.8 | 21.3  | 0 | 0 |

Column 1: number of the stand

Columns 2 – 6: zero (not used)

Column 7: number of rows per stand, in the case of mono-species stand 1, for a mixed stand >1; the mixed stand is described by one row per species

Column 8: species type (see Table 1)

Column 9: age

Column 10: patch size (ha)

Column 11: mean height (m)



Column 12: mean DBH [cm]

Column 13: basal area (m<sup>2</sup>)

Columns 14-15: 0

In the special case of initializing trees (saplings) without diameter and therefore without basal area the value of DBH has to be zero (DBH=0) and the value of basal area is the number of trees (saplings). In this case the model generates cohorts of saplings with the mean height and a total number of saplings given in column 13.

**Table 1 Species type code in column 8**

| Species type number | species            | Taxid in 4C<br>(species.par) | species            |
|---------------------|--------------------|------------------------------|--------------------|
| 1                   | Abies alba         | 14                           | spruce             |
| 2                   | Acer platanoides   | 1                            | beech              |
| 3                   | Acer               | 1                            | beech              |
| 4                   | Alnus glutinosa    | 5                            | birch              |
| 5                   | birch              | 5                            | birch              |
| 6                   | Carpinus betulus   | 1                            | beech              |
| 7                   | Castanea sativa    | 4                            | oak                |
| 8                   | Beech              | 1                            | beech              |
| 9                   | Frax. excelsior    | 4                            | oak                |
| 10                  | Spruce             | 2                            | spruce             |
| 11                  | pine               | 3                            | pine               |
| 12                  | Populus tremula    | 8                            | aspen              |
| 13                  | Quercus petrea     | 4                            | oak                |
| 14                  | Quercus pub.       | 4                            | oak                |
| 15                  | oak                | 4                            | oak                |
| 16                  | Tilia cordata      | 1                            | beech              |
| 17                  | Ulmus glabra       | 4                            | oak                |
| 21                  | Douglasie          | 10                           | Douglas fir        |
| 23                  | Pinus strobus      | 7                            | Pinus ponderosa    |
| 24                  | larix              | 10                           | Douglas fir        |
| 30                  | Eucalyptus glob.   | 12                           | Eucalyptus glob.   |
| 31                  | Eucalyptus grandis | 13                           | Eucalyptus grandis |



### 3.3. Output

In the input directory the resulting ini-file is stored, in the case of the example it contains three initializations:

```
1 -99. != volume function, patch size
! data source= D source file= input/peitz150.dat
! sapwood fraction and form factor now dynamic per cohort
! 4C Tree Initialization File (Stand)
!
! contains the following data (single tree values):
!
! x_Ahb: cross sectional area of heartwood at stem base (cm**2)
! height: tree height (cm)
! x_hbole: bole height (cm)
! x_age: tree age (years)
! n: number of trees
! sp: species (integer number)
! DC: diameter at crown base
! DBH: diameter at breast height
!
! x_fol x_frt x_sap x_hrt x_Ahb height x_hbole age n sp DC DBH
1 10000.00 stand identifier, stand area
0.70841 0.70841 5.24632 2.82494 40.14457 860. 662. 62 602 3 4.29339 7.48289
0.90351 0.90351 7.54647 4.06348 48.97933 989. 763. 62 623 3 4.84511 8.45072
1.12823 1.12823 10.47202 5.63878 59.20908 1118. 865. 62 561 3 5.40435 9.44331
1.37929 1.37929 14.03830 7.55908 70.64241 1245. 964. 62 419 3 5.96350 10.44129
1.64671 1.64671 18.12082 9.75737 82.81343 1364. 1056. 62 312 3 6.50443 11.40866
1.94359 1.94359 22.93710 12.35074 96.31477 1480. 1146. 62 271 3 7.05613 12.39447
2.27304 2.27304 28.58420 15.39149 111.26393 1595. 1234. 62 208 3 7.62122 13.40385
2.62625 2.62625 34.95127 18.81991 127.26677 1704. 1317. 62 143 3 8.18532 14.40769
3.01102 3.01102 42.18682 22.71598 144.67072 1811. 1398. 62 85 3 8.75958 15.42706
3.41182 3.41182 49.98800 26.91661 162.78668 1909. 1471. 62 46 3 9.32173 16.42174
```



|         |         |           |          |           |       |       |    |    |   |          |          |
|---------|---------|-----------|----------|-----------|-------|-------|----|----|---|----------|----------|
| 3.81805 | 3.81805 | 58.22078  | 31.34965 | 181.11896 | 1998. | 1538. | 62 | 32 | 3 | 9.86036  | 17.37187 |
| 4.25874 | 4.25874 | 67.59649  | 36.39811 | 200.97351 | 2085. | 1605. | 62 | 17 | 3 | 10.41388 | 18.34706 |
| 4.71262 | 4.71262 | 77.52253  | 41.74290 | 221.42387 | 2170. | 1665. | 62 | 2  | 3 | 10.95478 | 19.30000 |
| 5.16239 | 5.16239 | 87.64429  | 47.19308 | 241.66017 | 2250. | 1720. | 62 | 1  | 3 | 11.46559 | 20.20000 |
| 5.57939 | 5.57939 | 97.09858  | 52.28385 | 260.43759 | 2310. | 1765. | 62 | 2  | 3 | 11.91967 | 21.00000 |
| 6.31979 | 6.31979 | 114.74910 | 61.78798 | 293.61395 | 2415. | 1845. | 62 | 2  | 3 | 12.68594 | 22.35000 |
| 7.10632 | 7.10632 | 133.50533 | 71.88748 | 328.99533 | 2510. | 1910. | 62 | 1  | 3 | 13.45220 | 23.70000 |
| 7.40932 | 7.40932 | 141.30211 | 76.08575 | 342.49506 | 2550. | 1940. | 62 | 1  | 3 | 13.73600 | 24.20000 |

-99.9

2 10000.00 stand identifier, stand area

|         |         |           |          |           |       |       |    |     |   |          |          |
|---------|---------|-----------|----------|-----------|-------|-------|----|-----|---|----------|----------|
| 0.67687 | 0.67687 | 5.24507   | 2.82427  | 40.99206  | 860.  | 662.  | 67 | 654 | 3 | 4.22645  | 7.48226  |
| 0.86314 | 0.86314 | 7.54202   | 4.06109  | 50.00311  | 989.  | 763.  | 67 | 674 | 3 | 4.77069  | 8.44926  |
| 1.07978 | 1.07978 | 10.49826  | 5.65291  | 60.53798  | 1119. | 865.  | 67 | 588 | 3 | 5.32513  | 9.45034  |
| 1.31929 | 1.31929 | 14.05975  | 7.57063  | 72.20179  | 1246. | 964.  | 67 | 459 | 3 | 5.87192  | 10.44597 |
| 1.58098 | 1.58098 | 18.24033  | 9.82172  | 84.94003  | 1367. | 1058. | 67 | 330 | 3 | 6.41174  | 11.43515 |
| 1.86308 | 1.86308 | 23.03374  | 12.40278 | 98.65436  | 1482. | 1148. | 67 | 296 | 3 | 6.94448  | 12.41351 |
| 2.17683 | 2.17683 | 28.67710  | 15.44151 | 113.88295 | 1597. | 1235. | 67 | 210 | 3 | 7.49293  | 13.41810 |
| 2.50081 | 2.50081 | 34.77378  | 18.72434 | 129.58844 | 1701. | 1315. | 67 | 139 | 3 | 8.01875  | 14.38201 |
| 2.85424 | 2.85424 | 41.70235  | 22.45511 | 146.69318 | 1803. | 1393. | 67 | 85  | 3 | 8.55520  | 15.36471 |
| 3.25111 | 3.25111 | 49.77486  | 26.80185 | 165.87625 | 1906. | 1470. | 67 | 54  | 3 | 9.12054  | 16.39815 |
| 3.68089 | 3.68089 | 58.89715  | 31.71385 | 186.61624 | 2007. | 1545. | 67 | 31  | 3 | 9.69815  | 17.44839 |
| 4.05919 | 4.05919 | 67.07206  | 36.11573 | 204.88364 | 2085. | 1602. | 67 | 13  | 3 | 10.17947 | 18.32308 |
| 4.62100 | 4.62100 | 79.73067  | 42.93190 | 231.93358 | 2195. | 1680. | 67 | 2   | 3 | 10.85624 | 19.55000 |
| 5.15564 | 5.15564 | 91.83128  | 49.44761 | 257.67346 | 2280. | 1745. | 67 | 2   | 3 | 11.46149 | 20.65000 |
| 5.79870 | 5.79870 | 107.07757 | 57.65715 | 288.50201 | 2380. | 1820. | 67 | 1   | 3 | 12.15216 | 21.90000 |
| 5.90509 | 5.90509 | 109.40089 | 58.90817 | 293.62674 | 2390. | 1830. | 67 | 1   | 3 | 12.26268 | 22.10000 |
| 6.64856 | 6.64856 | 127.80443 | 68.81777 | 329.31650 | 2495. | 1900. | 67 | 2   | 3 | 13.01173 | 23.45000 |

-99.9

3 10000.00 stand identifier, stand area

|         |         |          |         |          |       |       |    |     |   |         |          |
|---------|---------|----------|---------|----------|-------|-------|----|-----|---|---------|----------|
| 0.70968 | 0.70968 | 5.25960  | 2.83209 | 40.20183 | 860.  | 662.  | 62 | 451 | 3 | 4.29688 | 7.48958  |
| 0.90324 | 0.90324 | 7.54253  | 4.06136 | 48.96976 | 989.  | 763.  | 62 | 449 | 3 | 4.84466 | 8.44944  |
| 1.13088 | 1.13088 | 10.50996 | 5.65921 | 59.32653 | 1120. | 866.  | 62 | 395 | 3 | 5.41045 | 9.45443  |
| 1.37846 | 1.37846 | 14.02761 | 7.55333 | 70.60268 | 1245. | 963.  | 62 | 299 | 3 | 5.96177 | 10.43812 |
| 1.65127 | 1.65127 | 18.19434 | 9.79695 | 83.02018 | 1366. | 1057. | 62 | 225 | 3 | 6.51336 | 11.42445 |



|         |         |           |          |           |       |       |    |     |   |          |          |
|---------|---------|-----------|----------|-----------|-------|-------|----|-----|---|----------|----------|
| 1.93902 | 1.93902 | 22.86356  | 12.31115 | 96.10162  | 1479. | 1145. | 62 | 209 | 3 | 7.04762  | 12.37990 |
| 2.26848 | 2.26848 | 28.52081  | 15.35736 | 111.04946 | 1594. | 1233. | 62 | 146 | 3 | 7.61392  | 13.39041 |
| 2.63195 | 2.63195 | 35.04168  | 18.86860 | 127.53353 | 1705. | 1318. | 62 | 103 | 3 | 8.19414  | 14.42330 |
| 2.99481 | 2.99481 | 41.85144  | 22.53539 | 143.93817 | 1805. | 1395. | 62 | 62  | 3 | 8.73573  | 15.38548 |
| 3.43399 | 3.43399 | 50.43755  | 27.15868 | 163.76839 | 1914. | 1476. | 62 | 40  | 3 | 9.35170  | 16.47500 |
| 3.86293 | 3.86293 | 59.12800  | 31.83815 | 183.15358 | 2006. | 1545. | 62 | 19  | 3 | 9.91815  | 17.47368 |
| 4.26010 | 4.26010 | 67.60942  | 36.40507 | 201.04858 | 2087. | 1604. | 62 | 10  | 3 | 10.41555 | 18.35000 |
| 4.66391 | 4.66391 | 76.51435  | 41.20004 | 219.21188 | 2165. | 1660. | 62 | 2   | 3 | 10.89802 | 19.20000 |
| 5.11140 | 5.11140 | 86.68941  | 46.67892 | 239.27341 | 2240. | 1720. | 62 | 1   | 3 | 11.40883 | 20.10000 |
| 6.17920 | 6.17920 | 111.26530 | 59.91208 | 287.32614 | 2390. | 1830. | 62 | 1   | 3 | 12.54404 | 22.10000 |
| 6.98688 | 6.98688 | 130.64087 | 70.34509 | 323.63596 | 2500. | 1900. | 62 | 1   | 3 | 13.33868 | 23.50000 |



## 4. Single stand with averaged stand data

Flag\_stand = 2 in the simulation control file

### 4.1. Dialogue

```
CA: D:\4c_v1.1\4c1.3\4C\4C\debug\4c.exe
egrandis

>>>FORESEE message: Cannot find data of litter initialisation - internal calc
ulation

Stand initialization with new file
Creating new file (y/n): y

*** Choice of forest stand data set:
1 - Datenspeicher Waldfond
2 - single tree data; classification must be performed (e.g. SILVA data)
3 - Level2-data
4 - already existing class file
5 - FORGRA data
6 - Bavarian inventory data
***Make your choice: 1

peitz150_2_61eb1
Forest stand data set: Datenspeicher Waldfond
choose data set (multi/singl):
singl
file name (with directory):
input/test_ini_e.dat
```

### 4.2. Input file

Example, similar to the structure of multi stand file, but only one row, and 14 columns (txt-file, numbers separated by space):

```
1 0 0 0 0 0 1 8 30 11.2 11.6 7.0 0 0
```

Column 1: number of the stand

Columns 2 – 6: zero (not used)

Column 7: number of rows per stand, in the case of mono-species stand 1, for a mixed stand >1; the mixed stand is described by one row per species

Column 8: species type (see Table 2)

Column 9: age

Column 10: mean height (m)

Column 11: mean DBH [cm]

Column 12: basal area (m<sup>2</sup>)

Columns 14-15: 0



**Table 2 Species type code in column 8 (single initialization)**

| Species type number | species            | Taxid in 4C<br>(species.par) | species            |
|---------------------|--------------------|------------------------------|--------------------|
| 14                  | Silver fir         | 14                           | Silver fir         |
| 8                   | Beech              | 1                            | beech              |
| 10                  | Spruce             | 2                            | spruce             |
| 11                  | pine               | 3                            | pine               |
| 12                  | Douglasie          | 10                           | Douglas fir        |
| 15                  | oak                | 4                            | oak                |
| 30                  | Eucalyptus glob.   | 12                           | Eucalyptus glob.   |
| 31                  | Eucalyptus grandis | 13                           | Eucalyptus grandis |

Without explicit information on patch size, patch size is assumed 1 ha.

In the case of two species:

1 0 0 0 0 2 5 17 8.60 7.50 2.05 0.00 0.00 11 17 8.60 7.50 2.05 0.00 0.00

Column 7: 2 (means 2 species)

Column 8: 5 (first species birch)

Column 15: 11 (second species pine)

.....

### 4.3. Output file

Similar to the multi stand ini-file with only one initialization data set.

## 5. Initialization by planting using stand data

This method should be applied for stands with low DBH and age. The method of generating tree with Weibull distributions, used for initialization from averaged stand data, does not work very well in this case. Therefore an easier approach is recommended, which assumed planting of tree cohorts with fixed DBH but varying height.

Flags: flag\_reg=20; flag\_stand = 0





## 5.1. Dialogue

```
C:\D:\4c_v1.1\4c1.3\4C\4C\debug\4c.exe
>>>FORESEE message: Cannot find data of RedN - internal calculation for
pinep
>>>FORESEE message: Cannot find data of RedN - internal calculation for
aspen
>>>FORESEE message: Cannot find data of RedN - internal calculation for
pineh
>>>FORESEE message: Cannot find data of RedN - internal calculation for
dougfir
>>>FORESEE message: Cannot find data of RedN - internal calculation for
robinia
>>>FORESEE message: Cannot find data of RedN - internal calculation for
eglobulus
>>>FORESEE message: Cannot find data of RedN - internal calculation for
egrandis

>>>FORESEE message: Cannot find data of litter initialisation - internal calc
ulation

>>> Start FORESEE-Simulation site          1

*** Planting of small trees ***
Input directory and file for planting: input/veracel_pl.prn_
```

## 5.2. Input file

Example for a single stand (textfile, numbers separated by space):

```
1 1111 13 16.6 7 13.3 -99.9
```

Column 1: number of stand

Column 2: number of plants per ha

Column 3: species type – corresponds to the taxid number in 4C

Column 4: mean sapling height (m)

Column 5: age

Column 6: mean DBH (cm)

Column 7: bole height, if not available -99.9

It is also possible to plant several stands by a number of rows > 1

## 5.3. Output file

10 cohorts are initialised with varying height and equal DBH. In the case of a single stand initialization the first row ( 1 10000) should be removed.

Example:

```
1 10000. != volume function, patch size
! data source= source file= input/veracel_pl.prn
! sapwood fraction and form factor now dynamic per cohort
! 4C Tree Initialization File (Stand)
!
! contains the following data (single tree values):
!
```



! x\_fol: foliage biomass (kg)  
! x\_frt: fine root biomass (kg)  
! x\_sap: sapwood biomass (kg)  
! x\_hrt: heartwood biomass (kg)  
! x\_Ahb: cross sectional area of heartwood at stem base (cm\*\*2)  
! height: tree height (cm)  
! x\_hbole: bole height (cm)  
! x\_age: tree age (years)  
! n: number of trees  
! sp: species (integer number)  
! DC: diameter at crown base  
! DBH: diameter at breast height  
!

| ! | x_fol    | x_frt   | x_sap    | x_hrt    | x_Ahb    | height | x_hbole | x_age | n   | sp | DC       | DBH      |
|---|----------|---------|----------|----------|----------|--------|---------|-------|-----|----|----------|----------|
| 1 | 10000.00 |         |          |          |          |        |         |       |     |    |          |          |
|   | 4.96394  | 4.96394 | 32.95486 | 7.02160  | 79.13116 | 1328.  | 531.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 34.89244 | 7.41983  | 76.48411 | 1370.  | 581.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 36.83001 | 7.83187  | 74.38439 | 1411.  | 630.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 38.76759 | 8.25384  | 72.67826 | 1452.  | 680.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 40.70516 | 8.68320  | 71.26458 | 1494.  | 729.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 42.64274 | 9.11819  | 70.07415 | 1536.  | 779.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 44.58032 | 9.55760  | 69.05796 | 1577.  | 828.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 46.51789 | 10.00051 | 68.18037 | 1619.  | 878.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 48.45547 | 10.44625 | 67.41488 | 1660.  | 927.    | 7     | 111 | 13 | 10.26346 | 13.30000 |
|   | 4.96394  | 4.96394 | 50.39305 | 10.89434 | 66.74127 | 1702.  | 977.    | 7     | 111 | 13 | 10.26346 | 13.30000 |



## 6. Initialization with single tree data

### 6.1. Simulation file

The initialisation flag is set flag\_stand = 2.

Example:

```
1 ! Run option 0 = single run, 1-6 multi run
1 !
! *** simulation specifications *****
1 ! number of simulation years
1990 ! start year for simulation
2500.0 ! patch size [m²]
50.0 ! thickness of foliage layers [cm]
7 ! time step photosynthesis calculations [d]
! *** choice of model options *****
1 ! mortality flag (flag_mort)
0 ! regeneration flag (flag_reg)
0 ! use FORSKA environmental factors and regeneration (flag_forska)
2 ! initialization flag (flag_stand)
0 ! soil vegetation flag (flag_sveg) !!! new !!!
0 ! management flag (flag_mg)
0 ! disturbance flag (flag_dis)
4 ! light algorithm number (flag_light)
1 ! foliage-height relationship (flag_folhei)
1 ! volume function (flag_volfunc)
0 ! respiration flag (flag_resp)
15 ! limitation flag (flag_limi)
1 ! decomposition model (flag_decomp)
0 ! root activity function flag (flag_sign)
1 ! soil water uptake flag (flag_wred)
1 ! root distribution flag (flag_wurz)
0 ! heat conductance flag (flag_cond)
0 ! interception flag (flag_int)
0 ! evapotranspiration flag (flag_eva)
0 ! CO2 flag (flag_CO2)
0 ! dummy flag (flag_dum1)
0 ! dummy flag (flag_dum2)
0 ! dummy flag (flag_dum3)
! *** output specifications *****
1 ! Yearly output flag
end
0 ! Daily output flag
end
0 ! cohort output flag
```



```
end
  2 ! summation output flag
!*****
input/species_neu.par
Zvirgzde11
input/Liep.cli
input/Zvir.sop
input/Ebw1617.soi
input/zvirgzde11.ini      ! name of the new generated initialization file
9999
input/ebw03_h95.man
input/dummy.dep
input/dummy.red
input/dummy.lit
```

## 6.2. File with tree data

Example of an initialization file (txt-file with space separated numbers). If the bole height is not available (-99.9) it is estimated by a function in 4C.

```
Liepaja
26880 m²    ! plot size
NR   BA   BHD   H   KA   AL   ! tree number, species type, BHD (mm), H (m), bole
                                height (m), age
1    3    27    2.3 -99.9  10
2    3     8    1.62 -99.9  10
5    3    22    1.7 -99.9  10
7    3     5    1.35 -99.9  10
9    3     6    1.4 -99.9  10
.
.
.
```

The species number in this file corresponds to the species number in species\_neu.par.

If the stand consists of several species, the tree must be sorted according to the species type and the trees must be separated by a line starting with -9999.

Example:

```
Patchsize [m²]
3200
nr   BA   BHD   H   KA   AL
.
229  3   301  24.3 -99.9  77
230  3   220  21.2 -99.9  77
-9999 3    0    0     0    77
7    5   253  23.4 -99.9  77
```



19 5 324 24.2 -99.9 77

.....

### 6.3. Initialisation dialog

Answers are necessary to the following questions:

1.question: Y

2. question: 2

3.question: 2

4. question: 2

Input directory and file: input/<name>.prn

See

The prn-file is placed in the input directory

```
D:\4c_v1.1\4c1.3\4C\4C\debug\4c.exe
birch
>>>FORESEE message: Cannot find data of RedN - internal calculation for
pinet
>>>FORESEE message: Cannot find data of RedN - internal calculation for
pinet
>>>FORESEE message: Cannot find data of RedN - internal calculation for
aspen
>>>FORESEE message: Cannot find data of RedN - internal calculation for
pinet
>>>FORESEE message: Cannot find data of RedN - internal calculation for
dougfir
>>>FORESEE message: Cannot find data of RedN - internal calculation for
robinia
>>>FORESEE message: Cannot find data of RedN - internal calculation for
eglobulus
>>>FORESEE message: Cannot find data of RedN - internal calculation for
egrandis

>>>FORESEE message: Cannot find data of litter initialisation - internal calc
ulation

Stand initialization with new file
Creating new file (y/n): y

*** Choice of forest stand data set:
1 - Datenspeicher Waldfond
2 - single tree data; classification must be performed (e.g. SILVA data)
3 - Level2-data
4 - already existing class file
5 - FORGRA data
6 - Bavarian inventory data
***Make your choice: 2

Zvirgzde11
If you want to use SILVA data, type: 1
If you want to use levelII data from Sachsen, type: 2
If you want to use single tree data with tree class information, type: 3

if you want to use data like level II single tree data and generate one tree
cohorts, type: 4
2
Forest stand data set: levelII Sachsen (classification must be performed)

Do you want to read the input file from
1 - the Standard 4C stand directory on data/safe/4C/4C_input/stand
2 - or do you want to specify another directory?
***Make your choice: 2
Input directory and file: input/zvirgzde11.prn
```



## 6.4. Result

A file <name>.ini file is produced in the input directory.

In the case of the example the file zvrgzde11.ini is produced.

## 7. Initialization with dbh class data

### 7.1. Simulation file

The initialisation flag is set flag\_stand = 2.

The sim-file has the same structure as described in 6.1.

### 7.2. File with dbh class data

Example of an initialisation file (Brasschaat, Cermak 1998)

|       |      |       |      |   |
|-------|------|-------|------|---|
| S     | 3    | 0.300 |      | ! code S species type (pine), rsap (estimate) |
| 10000 |      |       |      | ! patch size (m <sup>2</sup> )                |
| 542   | 17   | 66    |      | ! number of trees, number of classes, age     |
| 166   | 17.5 | 0.004 | 15.4 | ! dbh (mm), Height (m), share, bole height    |
| 186   | 18.3 | 0.026 | 15.7 |   |
| 203   | 19.3 | 0.081 | 16.5 |   |
| 222   | 19.6 | 0.116 | 16.5 |   |
| 242   | 20.1 | 0.170 | 16.7 |   |
| 261   | 20.5 | 0.173 | 16.8 |   |
| 280   | 20.8 | 0.153 | 17   |   |
| 300   | 21.1 | 0.118 | 17   |   |
| 315   | 22.3 | 0.037 | 17.5 |   |
| 339   | 22.3 | 0.052 | 17.4 |   |
| 361   | 22   | 0.035 | 17   |   |
| 381   | 22.8 | 0.020 | 17.2 |   |
| 394   | 21.9 | 0.006 | 17.1 |   |
| 420   | 23.2 | 0.004 | 15.9 |   |
| 438   | 22.2 | 0.002 | 17.6 |   |
| 460   | 20.9 | 0.002 | 16.8 |   |
| 484   | 23.3 | 0.002 | 15.4 |   |

Share: 0. < value <1 share of dbh class on the whole stem number

### 7.3. Initialisation dialog

1. Question: y
2. Question: 4
3. Question: S



#### 4. Question: filename

```

C:\D:\4c_v1.1\4c1.4\4C1.4\4C\debug\4c.exe
>>>foresee message: now reading species parameter file...
>>>foresee message: Filetest - file d:\4c_v1.1\input/species_neu.par
exists!

>>>foresee message: reading file d:\4c_v1.1\input/species_neu.par completed

>>>foresee message: Filetest - file d:\4c_v1.1\input/Kranzb.sop exists!
***** Reading soil parameter from file
d:\4c_v1.1\input/Kranzb.sop
...

>>>FORESEE message: Now reading DEPOSITION data from file, please wait...

>>>FORESEE message: Now reading RedN data from file, please wait...

>>>FORESEE message: Cannot find data of litter initialisation - internal calc
ulation
Stand initialization file not exists!
Stand initialization with new file
Creating new file (y/n): y

*** Choice of forest stand data set:
1 - Datenspeicher Waldfond
2 - single tree data; classification must be performed (e.g. SILVA data)
3 - Level2-data
4 - already existing class file
5 - FORGRA data
6 - Bavarian inventory data
***Make your choice: 4

brastest4

Do you want to use the standard procedure - type: S
or Manfred Lexers input format - type: L
S
Input file: brassch.prn_
```

### 7.4. Result

A file <name>.ini file is produced in the input directory.