# Seed Handling Manual

## Guidelines and Logbook for Seed Processing

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# SEEDLOT DIARY

*Seed source (no. and name):* .....
*Species:* ..... *Seed lot no:* .....

# 1. Seed Maturity

**a. Maturity criteria**: .

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

**b. Cutting test to determine maturity**: yes ❒ no ❒

Date of sampling: .....
Sample size (no. of seeds): ..... Percentage mature: ..... %

**c. Estimated mature seeds (without sampling)**: ..... %

**d. Cutting test**: yes ❒ no ❒

Date of sampling: ..... Date of testing: .....

Sample size (no. of seeds): .....
% filled and good: ..... %
% empty: ..... %
% damaged/dead: ..... %
% immature or not developed: ..... %

**e. Moisture content**: yes ❒ no ❒

Date of sampling: ..... Date of testing: .....
Method: .....
No. of replicates: ..... Size of replicate: .....
Material (fruit/seed): .....
.....
.....

Moisture content: ..... % (fresh weight basis)

# 2. Collection

**a. Collection dates**: .....

**b. Collection method**: from the tree ❒ from the ground ❒
from a cover on the ground ❒

If from a cover on the ground, state maximum number of days from shedding to collection: ..... days

**c. Describe the method of collection and the material collected** (e.g. clusters of pods, fleshy fruits):

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

**d. No. of trees collected from**: ..... **Mixed in the field**:……..

**e. Is the size of the crop**: Good ❒ Intermediate ❒ Poor ❒

**f. Condition of the material** (e.g. pests, mechanical damage, maturity):

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

**g. Describe any selection/cleaning of collected material done at this stage**:

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

**h. Yield**:

Total quantity collected: ..... unit (litres, kg, other): .....

Total quantity of fruit collected: ..... unit (litres, kg, other): .....

Quantity of seed (or other unit ready for selling): ..... kg

# 3. Transport/storage before processing

**a.** If any **processing steps** (item 4) were made **in the field** state their numbers (see numbers in diagram, item 4): .....

**b. Number the processing steps done at the central unit** i.e. where the seed will be finally stored (see numbers in diagram, item 4): .....

**c. Temporary storage and transport conditions**

| *Temporary storage (TS) & transport (T)* | *Duration (dates)* | *Container type* | *No. of kg per container* | *Temp./ °C* | *Air exchange possible (Yes/No)* |
|---|---|---|---|---|---|
| *TS between collection and processing in field or transport* | | | | | |
| *TS after processing in field and before transport* | | | | | |
| *T to central seed centre* | | | | | |
| *TS at seed centre before processing* | | | | | |

# 4. Processing

**a**. **Type of storage physiology** (known or suspected):

Recalcitrant ❒ Intermediate ❒ Orthodox ❒ Unknown ❒

**b. Initial testing before processing**:

| Date of sampling | Seed mc/% | Normal seed-lings/% | Abnor-mal seedl.% | Empty seeds/% | Fresh seeds/% | Insect attacked seeds/% | Other/ % | Days to 50% germ. |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

| *STEP* | *DATE(S)* | *MACHINE/METHOD* |
|---|---|---|
| **c. Pre-cleaning** | | |
| **d. After-ripening** | | .....% mature ..... % filled and good |
| **e. CONES** | | |
| **1.** Drying cones | | |
| **2.** Tumbling cones | | |
| **3.** Dewinging seed | | |
| **4.** Other | | |

| *STEP* | *DATE(S)* | *MACHINE/METHOD* |
|---|---|---|
| **f. FRUITS, DRY** | | |
| **1.** Drying fruits<br>**2.** Threshing<br>**3.** Separation<br>**4.** Dewinging<br>**5.** Other | | |
| **g. FRUITS, WET** | | |
| **1.** Soaking<br>**2.** Maceration<br>**3.** Washing (state whether sinkers/ floaters are removed) | | |
| **h. Drying of seed** (or other unit stored/sold) | | |
| **i. Cleaning** | | |
| **j. Upgrading** | | |

# 5. Testing during processing

**a. Moisture content**:

Method: .....
No. of replicates: ..... Size of replicate: .....

Subsequent determinations of moisture content:

| *Date of sampling* | *Step no* | *Moisture content/%* |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**b. Cutting tests**

Sample size (no. of seeds): .....

Filled and good: F
Empty: E
Damaged/dead: D
Immature or not developed: I

| *Date of sampling* | *F%* | *E%* | *D%* | *I%* | *During/after step no* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# 6. Pretreatment

**a. Type of dormancy** (known or suspected):

Physical (water-impermeable) ❒ Chemical ❒ Mechanical ❒

Embryo dormancy ❒ Not dormant ❒ Unknown ❒

**b. Method of pretreatment before germination testing** (describe details e.g. temperature, duration, machine):

**c. Other pretreatment methods tested and their applicability**:

# 7. ISTA-testing after processing, before storage/selling

**a.** Date of sampling: ..... **b.** Date for initiation of germination test: .....

**c.** Moisture content: ..... % **d.** 1000 seed weight: ..... no./kg

**e.** Purity: ..... %

**f.** Germination capacity: ..... % normal germinants ..... % abnormal
..... % fresh not germinated ..... % insect attacked ..... % empty
..... % other

**g.** Germination speed:
First germinant: ..... days (after initiation of germination test)
Last germinant: ..... days 50% germination: ..... days

# 8. Evaluation of seed quality

Very good ❒ Satisfactory ❒ Not satisfactory ❒ Poor ❒

Conclusions, causes of dissatisfactory results, procedures to be changed, tests/research to be made:

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

# 9. Storage conditions

| Date for initiation of storage | Container type | Seed per container/kg | Temperature/ °C | Seed moisture content/% |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

# 10. Pesticide treatment or other precautions

Method: . . . . . .
. . . . . .
. . . . . .
. . . . . .

Applied during/after step:..... Date of treatment: .....

# 11.Testing during storage

| *Date* | *MC/%* | *Normal seed-lings/%* | *Abnormal seedl.%* | *Empty seeds/%* | *Fresh seeds/%* | *Insect attacked seeds/%* | *Other/ %* | *Days to 50% germ.* |
|---|---|---|---|---|---|---|---|---|
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**Evaluation of storability**

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. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

# 12. Comments



Seedlot no. .....