



NUCLEUS, FOUNDATION AND MOTHER UNITS

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1. SITE ASSESSMENT

- 1.1 Plant Improvement Organisations (PIOs) annually screen sites with the potential to be selected.
- 1.2 The potential sites are assessed by the PIO inspectors on the basis of compliance with the scheme requirements.
- 1.3 The findings are recorded and filed by the PIO.
- 1.4 PIOs apply annually, before **31 December**, in writing to the Vine Improvement Association (VIA) for the registration of the premises approved by the PIO.
- 1.5 Each application must include:
 - a) an application form (**VIA C-3-6**);
 - b) a location map and GPS coordinates that clearly indicate where the premises are located;
 - c) a laboratory report on the nematode status of the unit (all laboratory results for the establishment of a unit must be confirmed with a unique reference number);
- 1.6 In the case of a new producer, the relevant PIO provides the necessary information to Plant SA, if all the requirements are met, the premises are registered and a certificate number is allocated.

2. ESTABLISHMENT AND REGISTRATION OF UNITS

The Scheme requirements for the registration of units are set out in **Article 6** of the Scheme.

- 2.1 PIOs apply annually in writing to the VIA, for the registration of all new nucleus, foundation and mother units established during the year.
- 2.2 Each application must include:
 - a) an application form (**VIA C-3-6**);
 - b) the certificate number and graft combination number of the nursery where the vines were propagated must be supplied on the application form;
 - c) an issuance in cases where plant material for the establishment of a new unit is not provided by a nursery;

- d) a site plan that clearly indicates the block number, rows, planting width and number of plants per scion and/or rootstock clone;
 - e) a return with full particulars of each scion and/or rootstock clone established on the unit, as prescribed (**VIA C-3-8**).
- 2.3 If the application for registration of a table- or drying grape unit includes a special request to propagate directly from a source plant from a recognised evaluation program:
 - a) the source plant must comply with the requirements of Phase 2 of clone evaluation; and
 - b) the PIO must test and treat the source plant as if it is a nucleus plant until a true nucleus plant has been successfully established or until the clone is scrapped after five years.
- 2.4 Applications for registration, with provisional approval by the Secretary, are submitted to the Technical Committee for confirmation and subsequent recording in the relevant registers.
- 2.5 New block units added to the register must, where possible, be tested for fanleaf during the first growing season or alternatively in the second year.
- 2.6 Vines in the new units must be declared true to type as soon as practically possible, if there are cases where the varietal authenticity cannot be confirmed by the second growing season, the relevant PIO must apply in writing for an extension. Reasons for the application to extend must be provided.
- 2.7 A block unit that does not meet these requirements will be scrapped unless written authorisation for an extension has been provided.

3. RE-REGISTRATION OF A UNIT

- 3.1 Should a unit undergo a change of ownership, the PIO concerned must apply in writing to the VIA for re-registration of the site in the name of the new owner.
- 3.2 The full name and address of the new producer and the name of the farm where the unit is situated must be supplied, as prescribed (**VIA C-3-6**).
- 3.3 Applications for re-registration of units are confirmed by the Secretary and presented to the Technical Committee for information purposes.

4. SCRAPPING OF A UNIT

- 4.1 PIOs can, throughout the year, submit written applications to the VIA requesting the scrapping of units that no longer comply with the scheme requirements. Full particulars of the units as well as reasons for the request must be submitted as prescribed (**VIA C-3-8**).
- 4.2 After verification by the Secretariat, the unit is provisionally scrapped. All applications for the scrapping of units are submitted to the Technical Committee for approval.
- 4.3 After approval, the full particulars of the scrapped units are transferred to the register for scrapped units.

5. NUCLEUS UNITS

5.1 Requirements for nucleus units

The Scheme requirements for nucleus units are set out in **Schedule 1** of the Scheme.

5.1.1 Access control

To ensure that the unit complies with all the requirements of an insect proof tunnel/greenhouse, the unit must have:

- a) a covering of insect-proof netting with a prescribed minimum pore size of 192 microns;
- b) a pre-entry sanitation area isolated with double doors, that close tightly as well as:
 - permanent hand wash facilities;
 - lab coats;
 - dispensers with sterilisation solution for surface sterilisation of equipment and plants;
 - a foot bath containing a liquid solution for the sterilisation of footwear; and
 - the above-mentioned rules, displayed visibly at the entrance.
- c) access control, allowing only authorised and trained personnel, with doors that can be locked;

- d) authorised personnel conducting their work inside the tunnels should not have any contact with outside plantings and personnel;

5.1.2 Candidate nucleus plants

Candidate nucleus plants are allowed in a nucleus unit, but must be clearly separated from registered nucleus plants.

5.2 Establishment requirements for nucleus units

The Scheme requirements for the establishment of nucleus units are set out in **Articles 11 and 12** of the Scheme.

5.3 Inspection of nucleus units

In terms of the Scheme, nucleus units must be inspected by the particular PIO at the following prescribed times, namely:

- a) early active growth stage;
- b) early leaf drop stage;
- c) dormancy.

5.4 Requirements for nucleus plant material

- a) PIOs inspect nucleus units during the growing season. Vines which deviate from viticulture and phytosanitary norms are removed.
- b) After the first growth season, nucleus plants must test free of the prescribed viruses, before any plant material can be issued.
- c) The details of the prescribed virus tests for nucleus plants are set out in **VIA C-2-4**.
- d) Plant material from nucleus plants sold to another PIO must be certified.

6. FOUNDATION UNITS

6.1 Requirements for foundation units

The requirements for foundation units are set out in **Schedule 1** of the Scheme.

- 6.1.1 If the premises were utilised as a foundation unit or foundation nursery before:

- a) soil samples with live vine roots must be collected to test for the presence of *Xiphinema index*;
- a) as much as possible of the remaining roots must be removed; and
- b) the site must lie fallow for at least one year.

6.1.2 Absence of mealybugs

Foundation units must be free of mealybugs or signs of mealybugs.

6.1.3 Weed Control

Weeds may not be permitted to grow uncontrolled in foundation units.

6.2 Establishment requirements for foundation units

The Scheme requirements for the establishment of foundation units are set out in **Articles 11** and **12** of the Scheme.

6.3 Maintenance of foundation units

6.3.1 Removal of vines

Vines that are visually infected or test positive as well as deviating vines must be removed continuously.

6.3.2 Mealybug control

a) Monitoring for mealybugs in low-risk units (LR):

- place one pheromone trap for every five hectares;
- start monitoring on 15 November and continue until 15 January;
- replace the sticky pads of the pheromone traps once a month;
- do not fold the sticky pads and hand in at a laboratory for the counting of male mealybugs present under a microscope;
- as soon as mealybugs are detected, the unit must be degraded to a risk unit and the prescribed procedure must be followed accordingly;

b) Risk units (R):

In risk units where mealybugs are present, no monitoring action is required, but an intensive spray program must be followed.

c) Upgrading from Risk (R) to Low-Risk units (LR)

In the event of a foundation unit being degraded from a low-risk unit to a risk unit due to the presence of mealybugs, the unit can be upgraded again if:

- the standard program for the monitoring of mealybugs in low-risk foundation units was followed for a period of two growing seasons and no presence of mealybugs was found;
- the vines with leafroll symptoms and vines that tested positive has been removed; and
- the remaining vines test negative for leafroll on a vine-by-vine basis in the next two autumn testing seasons.

6.3.3 Control of Ants

The uncontrolled presence of ants within a foundation unit is not permitted.

Monitoring: Monitoring of ants may be done at the same time as monitoring for mealybug. Should no ants be present at the time, it will be necessary to monitor again in Spring when it is warmer and the ants are more active. Should ants occur in the Spring, they will have to be monitored again later in the season.

Treatments:

- a) Baits - Directions as granted by IPW concession, must be followed.
- b) Stem treatment - Prescribed sprays and dosages must be applied.
- c) Dormant applications - Prescribed sprays and dosages must be applied.

Ants must be controlled as they move into the vines. Should the infestation be so intense that large numbers are seen moving over the ground, a second stem application must be made later in the season. The second application must only be made if ants are present on the vines.

6.3.4 Weed Control

Weeds may not be permitted to grow uncontrolled in foundation units and a specific weed control programme must be followed.

6.3.5 Cultivation practices

Should it become necessary to move people and instruments between vineyards on the same farm, the following precautions are recommended:

- a) Spray cleaning of tractors and implements;
- b) Disinfect pruning shears;
- c) Change protective clothing.

6.4 Inspection of foundation units

In terms of the Scheme, foundation units must be inspected by the particular PIO at the following prescribed times, namely:

6.4.1 Normal inspections

- a) early active stage of growth;
- b) early leaf drop stage;
- c) dormancy.

6.4.2 Additional inspections

a) Fanleaf

All foundation units must be tested once, one year after planting, on a vine-by-vine basis for fanleaf.

b) Leafroll associated viruses

Foundation units must be tested vine by vine with the prescribed ELISA test for Leafroll associated viruses:

- i) risk units of high demand varieties and units from which mother blocks will be established must be tested annually;
- ii) low risk units and all other foundation units must be tested at least once in a three-year cycle;
- iii) the only exceptions are **Cabernet Franc, Cabernet Sauvignon, Durif, Malbec, Merlot, Pinotage, Pinot Noir, Ruby Cabernet and Shiraz** where visual inspection will be equivalent to “tested with ELISA”.

6.5 Requirements for foundation unit plant material

- 6.5.1 PIOs inspect foundation units during the growing season. Vines which deviate from viticulturally and phytosanitary norms are removed.

- 6.5.2 Vines in foundation units must test free of viruses, using the prescribed tests, before plant material may be issued;
- 6.5.3 The details of the prescribed virus tests for foundation plants are set out in **VIA C-2-4**.

7. MOTHER UNITS

7.1 Requirements for mother units

The Scheme requirements for mother units are set out in **Schedule 1** of the Scheme.

7.1.1 History of previous vineyard

- a) If a vineyard or nursery was previously established on the land, as much as possible of the remaining roots must be removed before planting of the new vines;
- b) the land must lie fallow for at least one year.

7.1.2 Mother units must be established on land that tests free of *Xiphinema index*.

7.1.3 Weed Control

Weeds may not be permitted to grow uncontrolled in mother units.

7.2 Establishment requirements for mother units

The Scheme requirements for the establishment of mother units are set out in **Articles 11 and 12** of the Scheme.

7.3 Maintenance of mother units

7.3.1 Removal of vines

- a) Vines showing visual symptoms of Leafroll and vines testing positive for Leafroll must be marked:
 - i) Before harvesting of any propagation material, the infected vine and the two vines immediately adjacent to it must be pruned;
 - ii) In low-risk units, vines must be removed.
- b) Deviating vines

Deviating vines must be continually marked and must be pre-pruned, as is the case with all marked vines.

7.3.2 Absence of Mealybugs

No mealybug or visual signs of mealybugs may appear on the vines used to collect plant material.

7.3.3 Monitoring for mealybugs

Choose 20 sections of five vines each, spread proportionately throughout the unit. Should the area exceed two hectares, the number of sections should be increased pro-rata.

Draft a site plan of the mother unit with a clear indication of each row and the number of sections per row.

a) Risk units:

- Start monitoring in the beginning of October and continue until the end of March;
- Monitor the bunch zone of each of the five vines in each section twice a week;
- Indicate only the presence or absence of mealybugs on each vine;
- The total number of infested vines will indicate the percentage of mealy bug infestation in the mother unit.

b) Low-Risk units:

- Start monitoring from 15 November and continue until 15 January;
- Monitor the bunch zone of each of the five vines in each section twice a week;
- Indicate only the presence or absence of mealybugs on each vine;
- The total number of infested vines indicates the percentage of mealybug infestation for the unit;
- As soon as mealybugs are detected, the unit must be degraded to a Risk unit and the prescribed procedure must be followed accordingly.

c) Upgrading from Risk (R) to Low-Risk units (LR)

Where a mother unit was degraded from a low-risk unit to a risk unit due to the presence of mealybugs, the unit can be upgraded again if:

- the standard program for the monitoring of mealybugs in low-risk mother units was followed in the following two growing seasons and no presence of mealybugs was found;
- the vines with leafroll symptoms and vines that tested positive has been removed;
- the remaining vines tested negative for leafroll on a vine-by-vine basis in the following two autumn testing seasons.

d) Control of Mealybugs

As soon as a mealybug infestation is detected, the entire mother unit must be sprayed with a registered contact or systemic mealybug insecticide, applied in accordance with the directions for use.

7.3.4 Control of Ants

The uncontrolled presence of ants within a mother unit is not permitted.

Monitoring: Monitoring for ants may be done at the same time as monitoring for mealybug. Should ants not be present, it will be necessary to monitor again in Spring when the weather is warmer and the ants more active. Should there be no ants in Spring, monitoring will have to be done again later in the season.

7.3.5 Weed control

Weeds may not be permitted to grow uncontrolled in a unit and a specific weed control programme must be followed.

7.3.6 Cultivation practice

Should it become necessary to move people or implements between vineyards on the same farm, the following is compulsory:

- a) Spray cleaning of tractors and implements;
- b) Disinfect pruning shears;
- c) Wear clean protective clothing.

7.3.7 When applying cultivation, spraying or other viticultural practices, the implements and people must move from the youngest to the oldest unit.

7.4 Inspection of Mother units

In terms of the Scheme, mother units must be inspected by the particular PIO at the following prescribed times, namely:

7.4.1 Normal inspections (Scion and rootstock units)

The inspections must be done once a year alternately at the following times:

- a) early active growing stage;
- b) early leaf-drop stage (scion units only);
- c) dormant stage.

7.4.2 Additional inspections

a) Fanleaf

All mother units must be tested for fanleaf on a statistical basis, one year after planting.

b) Leafroll (scion units only)

Autumn inspections for visual leafroll symptoms on all red varieties are compulsory, as is the case with the white varieties, Chardonnay, Cape Riesling, Semillon and Dauphine.

7.4.3 Inspections must be conducted according to the evaluation form as prescribed **VIA C-3-12** and **VIA C-3-13**.

7.4.4 The details of the prescribed virus tests for mother units are set out in **VIA C-2-4**.

7.4.5 PIOs must submit a summarised report to the VIA of the inspections that was carried out, namely:

- a) a summer inspection report on **30 June**;
- b) a combined Autumn and Winter inspection report on **30 September**.

7.5 Requirements for plant material from mother units

7.5.1 PIOs inspect the mother units during the growing season. Vines that visually deviate from viticulture and phytosanitary norms must be marked.

7.5.2 PIOs mark vines that are visually infested with mealybug.

7.5.3 Units are scrapped when the number of vines deviating from the norm plus vines that test positively for Grapevine Leaf Roll in the prescribed ELISA tests, as well as vines with visual symptoms, exceed **5%**.

- 7.5.4 Before the collection of cuttings, PIOs must check whether the shoots of all the marked vines, as well as those of the two adjacent vines have in fact been pruned and the cut-off material effectively removed from the unit or destroyed.
- 7.5.5 PIOs check whether, according to IPW records, the more intensive spray programme for the control of mealybug has been followed.
- 7.5.6 Autumn inspections of mother units are compulsory on all red varieties and on the white varieties, Chardonnay, Cape Riesling, Semillon and Dauphine.
- 7.5.7 No mealybug or sign of mealybug may be present on vines used for the collection of plant material.

8. DETERMINING THE STATUS OF PLANT MATERIAL

- 8.1 PIOs must, annually, before **31 December**, submit a return to the Secretariat indicating any changes in the risk profiles of their units as well as the test results for Grapevine Fanleaf.
- 8.2 PIOs must, annually, before **31 May**, submit a return to the Secretariat with the leafroll test and/or inspection results of their units.
- 8.3 The classification of the status of the plant material in the units must be determined annually before **30 June**, using the following guidelines, namely:

Unit requirements:

- a) L = Low-risk units

These are units where no Grapevine Fanleaf or Leafroll vectors occur, and in which the monitoring action of the unit did not indicate the presence of any vectors.

- b) R = Risk units

All other units.

- 8.4 Rootstocks of *Vitis vinifera* crossings includes the following varieties:

143 B, Jacquez and US 8-7.

- 8.5 For fanleaf, the *X. index* as well as the fanleaf test results are used to determine the status of the unit. For leafroll, the results of the current year's leafroll tests / inspections are used to determine the status of the units.

- 8.6 The status of foundation units in low-risk areas is determined according to the leafroll test results obtained in the previous three-year cycle. Plant material from all other foundation units not tested for leafroll in the previous testing period, can be utilised with W1 status for commercial propagation.
- 8.7 Plant material can be issued by PIOs before **31 May**.

9. ISSUING OF PLANT MATERIAL

- 9.1 Nurseries must apply for plant material before **15 April** annually.
- 9.2 Plant SA submits a report to DALRRD of the units of each PIO that complies with the Scheme's requirements before **30 June**, annually.
- 9.3 Plant SA issues certification labels to members in accordance with the numbers ordered.
- 9.4 PIOs, in consultation with the mother block producers involved, estimate the number of bundles per clone.
- 9.5 A certification label must be attached to each bundle of plant material issued to a nurseryman to testify to the certification of the plant material concerned according to the following categories:

Green label	=	uncut bundles of plant material
Yellow label	=	pre-cut grafting shoots
Brown label	=	pre-cut planting shoots

In the event where the plant material is intended for the exclusive use of the nursery only and:

- a) the plant material will not leave the farm, it is not necessary to attach certification labels to the bundles before or after cutting the plant material;
 - b) delivered to a contractor, the nursery has to notify the PIO and apply for the necessary labels to be attached to the bundles before the plant material leave the farm. The same labels as attached to the original bundles of plant material have to be attached by the contractor to the bundles after the processing of the plant material and prior to returning the plant material to the nursery.
- 9.6 PIOs supply the plant material to the nurseries as ordered.
- 9.7 It is accepted that the numbers in uncut bundles cannot be determined with accuracy.

- a) In cases where nurserymen utilize more plant material out of uncut bundles than is indicated on the delivery note, the additional quantity must be declared to the PIO concerned before **15 October**.
 - b) Additional issuances to growers must be rectified in writing between the PIO and the mother block producers.
 - c) PIOs must present full details of their issuances to the VIA before **15 November**
- 9.8 In case of new or scarce plant material from foundation units not yet two years old, such plant material can, with the written consent of the Executive Board be utilized by a PIO as candidate plant material in a foundation nursery, provided that:
- a) the PIO has applied in writing to the VIA;
 - b) the unit has been established on virgin soil that test free of *X. index*;
 - c) the plant material at least complies with the requirements for candidate status.
- 9.9 In case of new or scarce plant material from mother units not yet two years old, such plant material can, with the written consent of the Executive Board be utilized by a PIO as candidate plant material in a nursery, provided that:
- a) the PIO has applied in writing to the VIA;
 - b) the unit has been established on virgin soil that test free of *X. index*;
 - c) the plant material at least complies with the requirements for candidate status.
- 9.10 PIOs make out issuance certificates with the full details of the plant material issued and check bundle sizes and cutting procedures followed by producers and nurserymen on an ad hoc basis.
- a) The sale and exchange between nurserymen of certified bundles of plant material with the original certification labels must be recorded throughout on the prescribed **form** and reported to the PIO by the nurserymen concerned before **15th October**.
 - b) The sale and exchange of plant material between nurserymen must be corrected with the appropriate documentation by the PIO and nurserymen involved, so that the PIOs are enabled to declare the total number of issuances to the VIA by **15th November**.
 - c) The PIOs follow up on complaints and provide advice to the mother block producers where necessary.

- d) Delivery notes must accompany each consignment and the driver of the vehicle must be able to present it.
- 9.11 The percentage of plant material in pre-cut as well as uncut bundles that may deviate from the physical standards may not exceed three percent. No deviations may occur in the numbers of plant material in pre-cut bundles.
- 9.12 PIOs collect the unused and damaged certification labels, together with the delivery notes from the mother block producers and check the number of bundles issued against the number of certification labels used.
- 9.13 PIOs must make a full declaration to the VIA before **15th November** of all material issued, including all corrections and exchanges of material between nurseries.

10. CERTIFICATION OF PLANT MATERIAL ISSUED

- 10.1 A complete return of plant material numbers issued per clone, as prescribed in **VIA C-3-9** and **VIA C 3-10** must be submitted by each PIO to the VIA before **15 November**.
- 10.2 Each issuance must be accompanied by a declaration from the PIO inspector, as prescribed in **VIA C-3-11**, that the plant material issued on behalf of the PIO concerned, complied with the requirements of the Scheme.
- 10.3 PLANT SA verifies all issuances against the block registers of the relevant PIO, and confirms the certification status of the plant material.

11. MEASUREMENT OF SHOOT DIAMETER

- 11.1 Measurement of shoot diameter at the narrowest limit

- a) Circular measuring-instrument

In accordance with the requirements of the Scheme, shoots of which the thinnest internode cannot fit into a round hole with a diameter of 4, 6 or 7 mm, qualifies.

- b) Slot measuring-instrument

According to the requirements of the Scheme a shoot qualifies if it cannot, in any way, fit into a slot with two evenly spaced sides, 4mm, 6mm or 7 mm apart.

11.2 Measurement of the shoot diameter at the widest limit

a) Circular measuring-instrument

Shoots qualify if the thickest internode can fit into a round hole with a diameter of 12mm.

b) Slot measuring-instrument

A shoot qualifies only if the thickest internode can fit, in every way, into a slot with two evenly spaced sides 12mm apart.

12. CUTTING OF ROOTSTOCK PLANT MATERIAL

12.1 Rootstock cuttings must meet the minimum physical requirements of the Scheme.

12.2 Rootstock cuttings must be labelled with the yellow labels of the Scheme.

12.3 Rootstocks are sold at a price determined by the PIO supplying the cuttings.