

The AEGIS Safety duplication Policy

Introduction

With the inclusion of the first accessions into the European Collection, the European Collection of genetically unique and important germplasm accessions is existing and operational as of December 2011. An important aspect of an effective and reliable conservation system is the safety of the European Accessions that are being maintained in a dispersed manner across the European genebanks. Conscious duplication of accessions for their safety in another genebank is an internationally recognized and recommended approach and has been widely practiced. In “A Strategic Framework for the Implementation of a European Genebank Integrated System (AEGIS) – A Policy Guide” (2009), it was foreseen that “A safety-duplicate of each European Accession will be stored at one or more collaborating and agreed European genebank(s) or institution(s) and/or at the Svalbard Seed Vault”. This aspect is reflected accordingly in the Memorandum of Understanding (MoU) that has been concluded with all AEGIS member countries and accordingly, the safety duplication of European Accessions has been included as a responsibility for the Associate Members of AEGIS.

This policy addresses the obligations and procedures of the Associate Members of AEGIS with respect to the safety duplication of the European Accessions they hold. The policy is presented below, following the presentation of principles that underpin the safety duplication concept. As a number of misperceptions and widely used inadequate safety duplication practices are still encountered, these are listed in the Appendix with the intention of addressing and correcting in the genebanks of Associate Members’ and other institutions.

Principles that should underpin the safety duplication

As a technical context for the safety duplication of European Accessions, practical principles are presented that could provide additional guidance in optimizing this important step of effectively and efficiently conserving unique and important accessions maintained in a dispersed manner across Europe. These principles include:

1. An adequate genetically representative sample of each accession of the European Collection is stored/maintained for safety reasons only, under similar or better storage or maintenance conditions than those of the original sample, at another Associate Member genebank, preferably in another country, and under a black box arrangement.
2. In case the duplicating and receiving genebanks agree on an approach that differs from the standard black box arrangement (see below), it is recommended that these agreed and deviating conditions are adequately reflected in a separate agreement between the two institutions.
3. The current international standards as drafted by the FAO for orthodox and non-orthodox seed germplasm and for field genebank accessions state that:
 - a. A safety duplicate sample of every accession should be stored in a geographically distant genebank under similar or better conditions than those of the original sample.

- b. The safety duplicate sample should be accompanied by relevant documentation.
 - c. A field genebank accession should be safety duplicated at least in one more site and/or backed up by an alternative conservation method/strategy such as *in vitro* or cryopreservation, where possible.
4. The relevant information about the location of the safety duplicated accessions should be included in EURISCO by filling in the appropriate descriptor field (“Location of safety duplicates” and “Institute maintaining safety duplicates”).
 5. As safety duplication is an integral part of the conservation effort, it is understood that the cost related to the shipment of the safety duplicated accessions rests with the duplicating genebank.
 6. As stated in the policy, genebanks have the possibility of using the Svalbard Global Seed Vault (SGSV) facilities for safety duplication of accessions of orthodox seed genetic resources. AEGIS would accept the duplication of European Accessions at SGSV as adequate safety duplication.

The AEGIS safety duplication policy

1. Upon approval by the ECPGR Steering Committee, this policy becomes the reference procedure for the appropriate implementation of the safety duplication of European Accessions by AEGIS Associate Members.
2. Each European Accession will have an identified safety duplicate stored under the same or better conditions than the original (as per Article 8 (a)(x) of the AEGIS MoU) at another Associate Member genebank, possibly in a different country and/or at the Svalbard Global Seed Vault.
3. The Associate Members of AEGIS will ensure that the European Accessions they maintain on behalf of AEGIS will be safety duplicated under black box arrangement. The safety duplication will be formalized following the inclusion of the accessions in the European Collection:
 - a. In case such accessions have already been safety duplicated at another Associate Member genebank and/or at SGSV or at one of the CGIAR Centres, the corresponding information must be included in EURISCO in the appropriate field.
 - b. In cases where the accessions still need to be safety duplicated, this will be done as soon as possible after their formal inclusion in the European Collection as per Articles 1 and 2 above, and the required information included accordingly in EURISCO.
4. Unless otherwise agreed between the depositor and the genebank in which the material is to be deposited, the safety duplication will be carried out under a so-called black box arrangement in accordance with the following terms and conditions:
 - a. The deposit of the material will not affect any property or other rights pertaining to the material.
 - b. The material deposited will remain in sealed containers, unless otherwise agreed with the depositor.
 - c. The material deposited will be maintained by the genebank in which the material is to be deposited, in accordance with internationally recognized standards.
 - d. All storage costs pertaining to the material deposited will, unless otherwise agreed between the parties, be borne by the genebank in which the material is to be deposited. Costs pertaining to the packaging and shipping of the deposited materials will be borne by the depositor.

- e. Any special terms and conditions governing the deposit of the material will be agreed between the depositor and the genebank in which the material is to be deposited.
 - f. The genebank in which the material is to be deposited will take no action to further transfer the material except back to the original depositor or the depositor's successor in title, or in accordance with the depositor's instructions.
 - g. The safety duplicated material will not be used, tested or regenerated by the genebank in which the material is to be deposited.
 - h. The genebank storing/maintaining safety duplicated accessions will return specified accessions as soon as possible to the duplicating genebank upon their request.
 - i. Computerized passport data and, whenever possible, relevant management data should always accompany the safety duplicated germplasm and/or be safety duplicated in a central database, in order to allow identification of the black box content, in case of emergency.
5. When deemed necessary or otherwise felt beneficial to any of the safety-duplicating partners, the depositing and the receiving genebanks of the safety duplicated accessions may conclude a formal agreement. Model agreements (a more formal longer version and a more informal shorter version, to be used at the discretion of the providing and the receiving genebanks) are available on the AEGIS Web site (<http://aegis.cgiar.org/home.html>), both reflecting the conditions as set out in this policy.
 6. The genebank maintaining the original sample of the European Accession will be responsible for any reporting on the safety duplication, including keeping the respective records in EURISCO up-to-date.
 7. Any dispute relating to the interpretation or execution of any specific safety duplication activity shall be settled by negotiation between the Parties, or such other form of non-binding dispute resolution as may be mutually agreed between the Parties.

Where a dispute cannot be settled amicably in accordance with the above procedures, the Parties may, by mutual agreement, submit the dispute to arbitration. The arbitration shall be conducted in accordance with the modalities to be agreed upon by the Parties, or, in the absence of agreement, with the rules of arbitration of the International Chamber of Commerce. The arbitral award shall be final and binding on the Parties.

Literature

- SGRP. 1996. Report of the Internally Commissioned External Review of the CGIAR Genebank Operations. International Plant Genetic Resources Institute, Rome, Italy.
- Maggioni L, Gass T. 1998. Safety-duplication of germplasm collections in Europe. In: Maggioni L, Marum P, Sackville Hamilton R, Thomas I, Gass T, Lipman E, compilers. Report of a Working Group on Forages. Sixth meeting, 6-8 March 1997, Beitostølen, Norway. International Plant Genetic Resources Institute, Rome, Italy. pp. 96-102.

Web site

FAO Genebank Standards <http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/conservation/gbs/en/>

Rome, March 2013
ECPGR Secretariat

Appendix. Current misconceptions in the practice of safety duplication

The practice of safety-duplication is reflected in the various policy documents of FAO, including the Global Plan of Action and the “Genebank Standards”. Genebanks worldwide implement this critically important step, but with significant variations in both the percentage of accessions that is actually being duplicated and the geographical location(s) of the genebank(s) where the material is being maintained. As these variations are possibly caused by some misconceptions, some cases are presented below, indicating whether various forms of safety duplication would be in line with the AEGIS policy:

- Some genebanks regard the duplicated samples of the originally collected material that was given to a genebank in the country of origin as safety-duplicates. *This form of safety duplication is only acceptable when a specific arrangement with the genebank in the country of origin is concluded.*
- Some genebanks regard the simultaneous inclusion of accessions in both the long-term (or “base”) collection and the short/medium-term (“active) collection as safety duplication. *Although this procedure would add additional security to such accessions, it does not comply with the AEGIS policy.*
- Sometimes a genebank regards the distribution of accessions to other genebanks that requested such material as a form of “safety duplication”, without indicating this intention to the recipient genebanks. Frequently, such accessions are being used by the recipient genebank for research or other purposes and are kept, if at all, most likely in the active collection only. *Therefore, this form of duplication cannot be accepted as an adequate form of safety duplication.*