



[1] **Electronic phytosanitary certificates, information on standard XML schemas, and exchange mechanisms (Draft Appendix 1 to ISPM 12:2011) (2006-003)**

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[3] **Introduction**

[4] Electronic phytosanitary certificates<sup>1</sup> are the electronic equivalents of phytosanitary certificates in paper form and may be used if they are accepted by the national plant protection organization (NPPO) of the importing country. When electronic phytosanitary certificates are issued by the NPPO of the exporting or re-exporting country, they should be made directly available to the NPPO of the importing country.

[5] NPPOs should develop a system for the issuance and transmission of electronic phytosanitary certificates that uses Extensible Markup Language (XML), standardized message structure and contents, and standardized exchange protocols.

[6] This appendix provides guidance on these elements and refers to a page on the IPPC website (<http://ePhyto.ippc.int>) that has links to further details – both IPPC and external websites and documents –

on the information contained in this appendix. These links are referred to in the text as “*Link 1*”, “*Link 2*” and so forth.

[7] All the requirements and procedures in this standard apply to electronic phytosanitary certificates unless more specific provisions are given in this appendix.

[8] The national electronic phytosanitary system should include the following harmonized components to generate electronic phytosanitary certificates.

[9] **1. XML Message Structure**

[10] NPPOs should use the World Wide Web Consortium’s (WC3) XML (*Link 1*) for exchange of electronic phytosanitary certification data between themselves.

[11] The phytosanitary XML message structure is based on the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Sanitary and Phytosanitary (SPS) XML schema (*Link 2*) and on XML data mapping, which indicates where to place the phytosanitary certification data in the XML schema.

[12] The phytosanitary XML data mapping enables the generation of an electronic phytosanitary certificate for export (*Link 3*) and an electronic phytosanitary certificate for re-export (*Link 4*).

[13] **2. XML Schema Contents**

[14] To facilitate automatic electronic communication and processing of phytosanitary certification data, NPPOs should use standardized (harmonized) terms and text for the data elements associated with the XML message for electronic phytosanitary certificates.

[15] The use of free text (ie. non-standardized) should be limited.

[16] For dates and country names, harmonized text is available and no free text is anticipated to be required.

[17] For scientific names, consignment description, treatments, additional declarations and point of entry, extensive lists of harmonized terms and text are available. Free text may be inserted if the appropriate term, text or value does not appear in the lists.

[18] For data elements other than those above, no harmonization of terms and text is needed and therefore free text should be entered.

[19] Further details on the information to be entered for the data elements in the XML message are provided in the following subsections.

[20] **2.1 Country names**

[21] For the names of countries (i.e. the country of origin, export, re-export, transit and destination) the two-letter country codes of the International Organization for Standardization (ISO) (*Link 6*) should be used.

[22] **2.2 Scientific names**

[23] For the scientific names of the plants in the consignment, the plants from which plant products were derived, and the regulated pests, the database of scientific names available on the International Phytosanitary Portal (IPP) (<https://www.ippc.int>) (*Link 7*) should be used.

**[24] 2.3 Description of consignment**

**[25]** The commodity and the type of packaging should be included in the description of the consignment. The commodity should be described using IPPC commodity terminology (*Link 8*). The type of packaging should be described using the United Nations Economic Commission for Europe (UNECE) Recommendation 21 (*Link 9*).

**[26]** Other elements of the description of the consignment may include:

**[27]** - weight, volume and height (which should be described using UNECE Recommendation 20 (*Link 10*))

**[28]** - declared means of conveyance (which should be described using UNECE Recommendation 19 (*Link 16*)).

**[29]** - declared point of entry (which should be described using the United Nations Code for Trade and Transportation Locations (UN/LOCODE) (*Link 15*)).

**[30] 2.4 Treatments**

**[31]** Treatment types should be specified using the IPPC's harmonized terms for treatment types (*Link 11*). Active ingredients should be specified using the pesticide index of the Codex Alimentarius (*Link 12*). Other parameters (e.g. concentration, dosage, temperature, and duration of exposure) should be described using UNECE Recommendation 20 (*Link 13*).

**[32] 2.5 Additional declarations**

**[33]** Recommended standardized wording for additional declarations is provided in Appendix 2 and should be described using IPPC codes for additional declarations (*Link 14*). Free text may be used to supplement the additional declarations indicated on the IPPC website or to describe additional declarations that have not been standardized.

**[34] 2.6 Name of authorized officer**

**[35]** The system generating electronic phytosanitary certificates should automatically insert the name of the authorized officer issuing the electronic phytosanitary certificate.

**[36] 3. Secure Data Exchange Mechanisms**

**[37]** NPPOs are responsible for the security of their national information technology (IT) system used for generating electronic phytosanitary certificates.

**[38]** During transmission, the data should be encrypted to ensure that the electronic exchange of the electronic phytosanitary certification data between NPPOs is secure and authenticated. NPPOs should use a secure protocol with a minimum 128-bit encryption. The electronic phytosanitary certification data may be subjected to additional encryption (*Link 17*) independently of its secure transmission.

**[39]** Transmission of data over the Internet from the NPPO of the exporting country to the NPPO of the importing country should be performed using secure IT mechanisms (e.g. Simple Object Access Protocol (SOAP), Secure/Multipurpose Internet Mail Extensions (S/MIME), File Transfer Protocol (FTP)) agreed on by the NPPOs concerned.

**[40]** The NPPO of the exporting country should make available to the exporter the actual electronic phytosanitary certificate number of the consignment.

- [41] Communication on the status of the message exchange between NPPOs should follow UN/CEFACT recommended standard messages (*Link 18*).
- [42] NPPOs are responsible for developing and maintaining their systems for exchanging electronic phytosanitary certification data. In cases where an exchange mechanism is suspended due to maintenance or unexpected system failure, the NPPO should notify affected NPPOs as soon as possible.
- [43] **4. Electronic Phytosanitary Certificates for Re-export**
- [44] In paper-only systems, the original phytosanitary certificate for export or its certified copy should be available as an attachment to the phytosanitary certificate for re-export. In the situation where paper and electronic phytosanitary certificates are both in use, the following requirements should be met.
- [45] **4.1 Electronic phytosanitary certificate for re-export with original phytosanitary certificate for export in electronic form**
- [46] When both the phytosanitary certificate for export and the phytosanitary certificate for re-export are in electronic form, the electronic phytosanitary certificate for export should be attached electronically to the electronic phytosanitary certificate for re-export.
- [47] **4.2 Electronic phytosanitary certificate for re-export with original phytosanitary certificate in paper form**
- [48] When the original phytosanitary certificate for export is in paper form and the phytosanitary certificate for re-export is in electronic form, a scan of the original phytosanitary certificate for export (in PDF or other non-editable format) should be incorporated into the electronic phytosanitary certificate for re-export.
- [49] **4.3 Paper phytosanitary certificate for re-export with original phytosanitary certificate in electronic form**
- [50] When the original phytosanitary certificate for export is in electronic form and the phytosanitary certificate for re-export is in paper form, the electronic phytosanitary certificate for export should be printed and validated by the NPPO of the country of re-export by stamping, dating and countersigning. The printed version of the electronic phytosanitary certificate for export becomes a certified copy and should then, in paper form, be attached to the phytosanitary certificate for re-export.
- [51] **5. Management of Electronic Phytosanitary Certificates Issued by NPPOs**
- [52] **5.1 Retrieval issues**
- [53] If the NPPO of the importing country is unable to retrieve the electronic phytosanitary certificate, the NPPO of the exporting country should resubmit the original electronic phytosanitary certificate at the request of the NPPO of the importing country.
- [54] **5.2 Alteration**
- [55] If an alteration to an electronic phytosanitary certificate is required after its issue, a replacement electronic phytosanitary certificate (*Link 5*) should be issued. The original electronic phytosanitary certificate should be revoked whenever possible.
- [56] **5.3 Cancelled dispatch**
- [57] If the exporter decides not to dispatch a consignment after the issue of an electronic phytosanitary certificate, the NPPO of the exporting country should revoke the associated electronic phytosanitary certificate.
- [58] **5.4 Certified copy**
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[59] A certified copy of an electronic phytosanitary certificate is a printout of the electronic phytosanitary certification data that is validated (stamped, dated and countersigned) by an NPPO attesting the authenticity of the data.

[60] The printout should preferably be in the format of the IPPC model phytosanitary certificates. However, the printout may be XML data in XML format if accepted by the NPPO of the importing country.

[61] **6. Declared Name and Address of Consignee**

[62] In the case of paper phytosanitary certificates, for “Declared name and address of consignee” the term “To order” may be used in instances where the consignee is not known and the NPPO of the importing country permits use of the term.

[63] With electronic phytosanitary certificates, the consignment information may arrive in the importing country well before the consignment arrives, which will allow pre-entry verification of the electronic phytosanitary certification data.

[64] Instead of using the “To order” option, NPPOs are encouraged to require the electronic phytosanitary certificate to include the name and address of a contact person in the importing country responsible for the consignment.

[65] **Footnote 1:** The IPPC refers to a “phytosanitary certificate” for export purposes and a “phytosanitary certificate for re-export” for re-export purposes. In order to keep the use of these terms simple and clear in this standard “electronic phytosanitary certificate for export” and “electronic phytosanitary certificate for re-export” are used. The term “electronic phytosanitary certificates” (plural) is used to cover both types of certificate.”