



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

[2]

Status box	
<i>This is not an official part of the standard and it will be modified by the IPPC Secretariat after adoption.</i>	
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[3] **Introduction**

[4] Electronic phytosanitary certificates¹ 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] All the requirements and procedures in this standard apply to electronic phytosanitary certificates.
- [6] When using electronic phytosanitary certificates, NPPOs should develop a system for the issuance, transmission and receipt of electronic phytosanitary certificates that uses Extensible Markup Language (XML), standardized message structure and contents, and standardized exchange protocols.
- [7] This appendix provides guidance on these elements and refers to a page on the IPPC website (<http://ePhyto.ippc.int>) that provides 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.
- [8] The 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.
- [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 the phytosanitary certification data should be placed 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 are encouraged to use standardized (harmonized) terms, codes and text for the data elements associated with the XML message for electronic phytosanitary certificates.
- [15] The use of free (i.e. non-standardized) text should be limited when appropriate codes are available.
- [16] For dates and country names, harmonized text is available and no free text is anticipated to be required.
- [17] For scientific names of plants and pests, consignment description, treatments, additional declarations and points of entry, extensive lists of harmonized terms, codes and text are being developed and will be available. Free text may be inserted if the appropriate term, text or value does not appear in the lists.
- [18] The process for maintaining and updating the lists of harmonized terms is being developed and will be described on the IPPC website (<http://ePhyto.ippc.int>). NPPOs will be requested to submit proposals for new harmonized terms using this process.
- [19] For data elements other than those above, no harmonization of terms and text is needed and therefore free text may be entered.
- [20] Further details on the information to be entered for the data elements in the XML message are provided in the following subsections.
- [21] **2.1 Country names**
- [22] For the names of countries (i.e. the country of origin, export, re-export, transit and destination) it is encouraged that the two-letter country codes of the International Organization for Standardization (ISO) (*Link 6*) be used.

[23] 2.2 Scientific names of plants and pests

[24] For the scientific names of the plants in the consignment, the plants from which plant products were derived, and the regulated pests, the use of the database of scientific names available on the IPPC website (<http://ePhyto.ippc.int>) (*Link 7*) is encouraged.

[25] 2.3 Description of consignment

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

[27] Other elements of the description of the consignment may include, where possible:

[28] - weight, volume and height (which is encouraged to be described using UNECE Recommendation 20 (*Link 10*))

[29] - declared means of conveyance (which is encouraged to be described using UNECE Recommendation 19 (*Link 16*))

[30] - declared point of entry (which is encouraged to be described using the United Nations Code for Trade and Transportation Locations (UN/LOCODE) (*Link 15*)) or country name.

[31] 2.4 Treatments

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

[33] 2.5 Additional declarations

[34] Recommended standardized wording for additional declarations is provided in Appendix 2 and it is encouraged to 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.

[35] 2.6 Name of authorized officer

[36] The name of the authorized officer issuing the electronic phytosanitary certificates should be included in each types of electronic phytosanitary certificate.

[37] 3. Secure Data Exchange Mechanisms

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

[39] 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. Before transmission, the electronic phytosanitary certification data may be subjected to additional encryption (*Link 17*) that remains intact after transmission.

[40] 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), Representative State Transfer (REST)) using systems that are mutually compatible.

- [41] The NPPO of the exporting country should make available to the exporter the actual electronic phytosanitary certificate number for the consignment.
- [42] Communication on the status of the message exchange between NPPOs should follow UN/CEFACT recommended standard messages (*Link 18*).
- [43] 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 other NPPOs as soon as possible.
- [44] **4. Electronic Phytosanitary Certificate for Re-export**
- [45] 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.
- [46] **4.1 Electronic phytosanitary certificate for re-export with original phytosanitary certificate for export in electronic form**
- [47] 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.
- [48] **4.2 Electronic phytosanitary certificate for re-export with original phytosanitary certificate in paper form**
- [49] 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 attached to the electronic phytosanitary certificate for re-export.
- [50] **4.3 Paper phytosanitary certificate for re-export with original phytosanitary certificate in electronic form**
- [51] 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.
- [52] **5. Management of Electronic Phytosanitary Certificates Issued by NPPOs**
- [53] **5.1 Retrieval issues**
- [54] If the NPPO of the importing country is unable to retrieve the electronic phytosanitary certificates, the NPPO of the exporting country should resubmit the original electronic phytosanitary certificates at the request of the NPPO of the importing country.
- [55] **5.2 Alteration and replacement**
- [56] If any of the information in electronic phytosanitary certificates needs to be altered after their issuance, the original electronic phytosanitary certificates should be revoked and replacement electronic phytosanitary certificates (*Link 5*) with alterations should be issued as described in this standard.
- [57] **5.3 Cancelled dispatch**
- [58] If the NPPO of the exporting country becomes aware of a consignment that is not dispatched after the issuance of electronic phytosanitary certificates, the NPPO of the exporting country should revoke the associated electronic phytosanitary certificates.
- [59] **5.4 Certified copy**

- [60] Certified copies of electronic phytosanitary certificates are printouts of the electronic phytosanitary certification data that are validated (stamped, dated and countersigned) by an NPPO attesting the authenticity of the data.
- [61] The printouts should be in the format that follows the standardized wording provided by the IPPC model phytosanitary certificates and recognized as phytosanitary certificates. However, the printouts may be XML data in XML format if accepted by the NPPO of the importing country.
- [62] **6. Declared Name and Address of Consignee**
- [63] 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.
- [64] 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.
- [65] Instead of using the “To order” option, NPPOs are encouraged to require the electronic phytosanitary certificates to include the name and address of a contact person in the importing country responsible for the consignment.
- [66] **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 appendix “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.”