

European and Mediterranean Plant Protection Organization
Organisation Européenne et Méditerranéenne pour la Protection des Plantes

PP 1/248 (2)

Efficacy evaluation of plant protection products Evaluation biologique des produits phytosanitaires

PP 1/248 (2) Harmonized classification and coding of the uses of plant protection products

Specific scope

This Standard proposes a harmonized classification of the uses of plant protection products to facilitate the exchange of data for the purposes of registration, and provides for a system of codes for such uses to form part of the EPPO code system.

Specific approval and amendment

First approved in 2006–09.

Revision to update references approved in 2014–09.

Introduction

One of the objectives of EPPO Standards PP1 on efficacy evaluation of plant protection products is, by describing standard methods for the conduct of field trials, to facilitate the exchange and comparison, between countries, of the data included in the biological dossier for registration. The data from an evaluation trial concerns a declared ‘use’ of a plant protection product, and will be most relevant for registration of the product in another country if the ‘uses’ concerned are recognized to be the same or equivalent. To date, there has been considerable variation between EPPO member countries in the declared uses of products, and this has complicated the exchange and comparison of data, and the ‘mutual recognition’ which is called for, in particular, in the Regulation (EC) 1107/2009.¹ The aim of this Standard is to provide a system for consistently characterizing product uses, so that uses in different countries can be compared and assessed for their potential equivalence. In the future, such a system may lead to substantial convergence between countries in the uses which are registered. Since it is already current practice in the EPPO Standards PP1 to characterize hosts and target pests by their EPPO (formerly

Bayer) codes, codes of the same type are proposed for the purpose of fuller description of uses.

Elements characterizing a use

The following main elements are recommended for characterizing a use:

- Crop or other treated object;
- Crop destination, e.g. grown for human consumption, for animal feed;
- Treatment, e.g. treatment of aerial parts, of seeds;
- Location of use, e.g. grown outdoors, under protection;
- Target, e.g. specific pests, plant growth regulation.

In addition, further detail can optionally be provided as follows:

- Crop qualifiers, e.g. specified cultivars, crop stage;
- Treatment qualifiers, e.g. application technique;
- Target qualifiers, e.g. pest growth stage.

In each of the five main cases, one or several elements may be specified. The elements are chosen from predetermined lists (Appendices 1–5). As far as possible, an element should be specified for every point but ‘not specified’ may be used if the information is not available. Use of optional qualifiers allows addition of other relevant information.

In the simplest case, a single crop is treated in a single manner against a single target pest (particular destination or location not being specified). This corresponds to the scope of many of the specific EPPO Standards PP1 on efficacy evaluation. However, uses may also concern broader categories (groups of crops such as ‘vegetables’, groups of

¹EC (2009) Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directive 79/117/EEC and 91/414/EEC. Official Journal of the European Union L 309, 1–50.

targets such as ‘foliar diseases’) which cannot simply be defined by the list of their members. The predetermined lists thus include any single crop or target (existing in the EPPO code system), together with those crop groups or target groups which have been agreed to be the most important in practice (which are also individually coded). The lists can be extended by agreement as necessary. Lists of treatments, locations and destinations can be treated similarly, except that there are no baseline reference lists in the EPPO code system.

At the time of publishing, the new lists are at an experimental stage and are located in the password-protected part of the EPPO Website. When agreed, the lists of: crops, crop groups and other treated objects; crop destinations; crop locations; and types of treatments will be maintained and updated separately from this Standard by the *ad hoc* Panel on the Harmonization of Data on Plant Protection Products.

The qualifiers are for the moment not defined, so free text can be used under each of the headings. Some suggestions are given in Appendix 6.

It may be noted that the description of a use in the terms of this Standard is independent of any particular plant product and its detailed conditions of registration. EPPO Standard PP 1/240 *Harmonized basic information for databases on plant protection products* provides guidance on the information concerning the registered use of a particular plant protection product.

Conclusion

A use can be described by a combination of EPPO codes for crop or other object, destination, location, treatment and target, with optional qualifiers. An XML schema has been designed to place these elements in a consistent relation, and facilitate transfer of data to other systems (see Appendix 7). The EPPO codes, when approved, will be made available on the EPPO website www.eppo.int, in the EPPO code system, and in EPPT. They will be associated with short descriptors in English; equivalent descriptors in French and other languages can readily be added.

Appendix 1 – Crops and other treated objects

Single crops can be described by the EPPO codes corresponding to their scientific name. This is the standard five-letter code for a plant, e.g. VITVI for *Vitis vinifera*, HORVX for *Hordeum vulgare*. Mushrooms, as fungi, will have a six-letter code, e.g. AGARBI for *Agaricus bisporus*. The EPPO code system also provides codes for various forms of crop plants, e.g. winter and spring cereals, different types of beet and brassica. These codes should be used where available. Otherwise, a special form of a crop plant can be specified by a ‘crop qualifier’.

If several crops are to be considered together, different approaches are possible:

- A separate EPPO code is given for each crop concerned (especially if it is important to limit the use to strictly specified crops);
- An EPPO code for a genus or family group is used, if the crops concerned belong within a single genus or family, e.g. 1BRSG for Brassica crops, 1SOLF for Solanaceous crops generally;
- A crop group code is used. These are new EPPO codes, of 5 letters starting with 3. This Appendix provides further details below on the definition of crop groups.

In general, it is preferable not to use a higher-order code if in fact the use can be specified by giving simple EPPO codes for a small number of individual crops.

If the use involves application of plant protection products to an object which is not a crop, then the appropriate new EPPO code should be used. Like the crop-group codes above, these are composed of 5 letters beginning with 3. There is just one set of crop-group codes and codes for other treated objects, with no distinction. This Appendix provides further details below on the definition of other treated objects.

Crop groups

A limited set of crop groups has been listed by the *ad hoc* Panel. They have the following features:

- They cannot easily be described by the use of existing EPPO codes
- The use cannot alternatively be described by suitable Crop location or Crop destination terms (see Appendices 2 and 3);
- They appear as such, or under a similar name, in national lists;
- They correspond to a group which is meaningful in the context of treatment with plant protection products.

The list is relatively short, and it may be noted that the Panel rejected many crop groups featuring in available sources because they did not fit the above criteria. In particular, many commonly used terms could be excluded because they were essentially describing a location or a destination. For example, ‘fodder beet’, becomes ‘beet’ + ‘grown for animal consumption’, ‘protected crops’ becomes ‘any crop’ + ‘grown under protection’.

It should be stressed that one of the entries is ‘Any crop’, and it is preferable to use this if appropriate, rather than ‘not specified’ which indicates a complete absence of information.

Without prejudice to the various recommendations made above for cases where several related crops are considered together, it is generally the case that a ‘use’ refers to one crop. Although the scheme allows for ‘any number’ to be specified, as is the case for the other elements, it is not generally meaningful to specify several independent crops, whereas for locations, targets etc., it is often necessary and meaningful to put several terms together to describe a use.

Other treated objects

Broadly, three main types of objects appear in this list: types of land or water (without specific reference to any plants growing on the land), structures and equipment, and the general category ‘stored products’. There are also a few miscellaneous items. These terms should not be used if a crop or crop group term can be used instead. In particular, individual ‘stored products’, concerning a distinct crop or crop group, should be entered as the crop code combined with the Crop location ‘Held in store’.

In general, for crop groups and other treated objects, if an exactly suitable term cannot be found, the closest available term should be used and a crop specifier should be used to indicate the difference. If a new term is considered necessary, this can be proposed to EPPO. The *ad hoc* Panel will consider such proposals.

Appendix 2 – Crop destination

A destination is the ultimate use or purpose of the crop. It corresponds more or less in common language to the ‘use’ of the crop, but this term would cause confusion since the Standard deals with the ‘use’ of plant protection products. Accordingly, ‘destination’ is preferred.

Defining crop destination separately from the crop itself avoids the necessity to multiply crop categories such as ‘Fodder X’ or ‘Seed crops of X’ or ‘Ornamental plants’. Basically, destinations are based on the formula ‘Grown for X’, and are assigned new 6-character codes starting with 3.

A special situation arises because some national lists describe destinations in negative rather than positive term, e.g. ‘not for human consumption’. Several terms have been designed to accommodate this approach. In general, it is considered that, if a product can be used efficaciously and safely on a crop for human consumption, this use extrapolates with similar efficacy and safety to other relevant destinations of the same crop. In certain cases, this may not be so: the pest control required on a seed crop or on an ornamental crop may not be the same as on a food crop. In that case, different uses should be defined by appropriate sets of relevant destinations. However, most crops have only a very limited number of real destinations in practice.

Appendix 3 – Crop location

Defining crop location separately from the crop itself avoids the necessity of multiplying crop categories such as ‘Glasshouse tomatoes’, ‘Field-grown vegetables’, ‘House plants’. Basically, locations are based on the formula ‘Grown in X’, and are assigned new 6-character codes starting with 3. The basic considerations are whether the crop is indoors or outdoors, in containers or not, private or public. It will often be appropriate to use several terms.

Appendix 4 – Treatment

Many features of a plant protection product and its formulation could be specified under this heading. For the purposes of defining a use, the *ad hoc* Panel recommends terms relating primarily to the place where the product is applied, using the formula ‘Treatment of X’. This concerns, for example, aerial parts, seeds, soil, containers. Each treatment is assigned a new 6-character code starting with 3.

Other features (formulation type, application technique, etc.) are not considered in general to be so significant in relation to use, but can be specified if relevant as a ‘treatment qualifier’.

It may be noted that timing of treatment is considered to be related either to crop or target, as ‘crop qualifiers’ (e.g. pre-emergence) or ‘target qualifiers’ (e.g. against eggs).

Though national regulations automatically qualify a plant protection product as being a fungicide, insecticide, herbicide, plant growth regulator, etc., this is redundant for the purposes of specifying a use.

Appendix 5 – Targets

The main targets of plant protection products are pests, mostly individual species or groups of closely related species in the case of animals and microorganisms, or broad categories in the case of pest plants (weeds). Another target is ‘plant growth regulation’, here referred to as ‘PGR’ and used loosely to cover any desired beneficial effect manifested by a plant in reaction to a plant protection product, without the involvement of any other organism.

Single pests can be described by the EPPO codes corresponding to their scientific name. This is the standard six-letter code for an animal or microorganism, e.g. PHYTIN for *Phytophthora infestans* or CARPPO for *Cydia pomonella*. Weeds, as plants, will have a five-letter code, e.g. STEME for *Stellaria media*. Volunteer plants of a crop, in another crop, are weeds, e.g. SOLTU for volunteer potatoes, specified as a target and not as a crop.

If several targets are to be considered together, different approaches are possible:

- A separate EPPO code is given for each target concerned (especially if it is important to limit the use to strictly specified targets);
- An EPPO code for a genus or family group (or higher taxon) is used, if the targets concerned belong within a specified taxon, e.g. 1SCLEG for Sclerotinia, or 1APHIF for Aphididae;
- A target group code is used. These are new EPPO codes, of 5 or 6 letters starting with 3, depending on the kind of pest they refer to. This Appendix provides further details below on the definition of target groups.

In general, it is preferable not to use a higher-order code if in fact the use can be specified by giving simple EPPO codes for a one or a small number of individual targets. In

particular, many plant pathogens being host-specific, it is preferable to avoid the use of broad targets 'Uredinales' (rusts), or 'Erysiphales' (powdery mildews) when in fact the crop specified in the use is attacked by only one or few pathogens in the group. The individual pathogens should then be specified (e.g. ERYSGR for *Blumeria graminis*).

Target groups

As for Crop groups (see Appendix 1), Target Groups are specified when they have the following features:

- They cannot easily be described by the use of existing EPPO codes;
- They appear as such, or under a similar name, in national lists;
- They correspond to a group which is meaningful in the context of treatment with plant protection products.

This arises most often when the pests concerned have some biological features in common, but do not belong to a single medium-level taxonomic group (foliar diseases, leaf-miners, sucking insects, soil insects).

It may be noted that the organisms to be considered as the relevant members of such groups may vary depending on the crop concerned. In many cases, it may be possible and preferable to specify them individually (see, for example, the pests specified in certain EPPO Standards PP1

Efficacy Evaluation of Plant Protection Products, or PP2 *Good Plant Protection Practice*). In some cases, the set of pests concerned for a given crop may vary in different parts of the EPPO region. If it is important to make this clear for a given use, then the individual pests will have to be specified, rather than using a Target Group.

Appendix 6 – Qualifiers

The lists of terms described in Appendices 1–5 are exclusive. The harmonized system does not allow the user to invent new terms or codes, beyond those which appear in the currently approved lists.

Accordingly, the user is given the possibility of providing other information, in the form of free-text 'Qualifiers' of crop, treatment or target. These are completely at the discretion of the user. Since these qualifiers are not coded, they will remain in the language in which they are entered.

It may be noted that certain types of information, particularly growth stage of crop or pest, and formulation type of product, were considered by the Panel for inclusion in the main lists, and it was decided not to include them. If a user wishes to put such information into his description of a use, he will therefore have to present it as crop, treatment or target qualifiers.

Appendix 7 – XML Schema

