CROP WILD RELATIVES OF *AVENA*, *APIUM*, *BETA* AND *PRUNUS* GENERA IN UMBRIA

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Crop Wild Relatives (CWR) are wild plant *taxa* more or less closely related to species of direct socio-economic importance and that have an indirect use for their genetic relationship to a crop. They possess traits, such as biotic and abiotic stress resistance or valuable from a qualitative point of view, that can be bred into crops to address the environmental and market demand changes (Maxted *et al.*, 2007). For these reasons they are a valuable part of biodiversity although they are generally neglected by conservation policies and actions.

To estimate the degree of CWR relatedness we can use the definition given by Harlan and de Wet (1971) i.e. the gene pool concept: close relatives are those being found in the primary gene pool (GP1), more remote ones in the secondary gene pool (GP2) and very remote ones in the tertiary gene pool (GP3). When gene pool information is lacking we can use the taxonomic hierarchy concept. A CWR's rank is defined as follow: *Taxon* Group 1a – crop, *Taxon* Group 1b – same species as a crop, *Taxon* Group 2 – same series or section as a crop, *Taxon* Group 3 - same subgenus as a crop, *Taxon* Group 4 – same genus as a crop, and *Taxon* Goup 5 – same tribe but different genus as a crop (Maxted *et al.*, 2006).

European native plant diversity is currently suffering erosion and extinction, then it is crucial to set up a conservation strategy for this valuable part of biodiversity. There are more than 12500 native species to Europe, but information about CWR species distribution and conservation status is almost complete lacking. To create European and national CWR lists is the first step to be able to protect them (Maxted, 2003).

This work was carried out within the frame of the project "Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding" (PGR secure, 2011-2013 EC FP-KBBE-2010-103 GA n. 266394) aimed at producing an Italian CWR list and conservation strategy. In this context, we initially analyzed a large amount of CWR floristic and phytosociologic literature relative to Umbria and central Italy. The surveys are equally distributed in both in protected (Monti Sibillini National Park, Trasimeno Lake, Mount Cucco and Mount Subasio Regional Parks) and non protected areas like the road margins or the cultivated areas. The work was initially focused on the CWR belonging to *Apium*, *Avena, Beta, Brassica* e *Prunus* genera for which many cultivated forms of great economic importance exist. According to the reviewed literature, 1 species of *Apium* (*A. nodiflorum* (L.) Lang.), 5 species of *Avena*, 2 species of *Beta* (*B. trigyna* Waldst & Kitte and *B. vulgaris* L. subsp *vulgaris*), 4 species of *Brassica* and 10 species of *Prunus* are recorded in the area of Umbria. The species less mentioned are *Avena barbata* Potter subsp *barbata*, *A. fatua* L., *Brassica gravinae* Ten, *B. nigra* (L.) Koch, *B. rapa* L., *Prunus armeniaca* L., *P. domestica* L. subsp *domestica* and *P. domestica* subsp *insititia* (L.) Bonnier & Layens. The species most represented are *P. avium* L. and *P. spinosa* L.. The actual presence of the identified species and of their populations will be assessed through surveys in the mentioned sites. The next step will be to hierarchize the territorial grid according to the species record density and to cross these data with the land use, in order to outline a model which can point out the most CWR-rich landscapes.

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