



The Importance Plant Genetic Resources of Turkey

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Editorial

Plant genetic resources have used since man first cultivated plants, but their importance was not realized until Vavilov (1926) discovered wide variation among plants of the same species. It is about 40 years since Vavilov and his collaborators in Russia and described origin centers (geographical centers) of our cultivated crops and their wild relatives by Institute of Vavilov (namely right now) [1]. Later with expansion of breeding programs, breeder realized that success was largely dependent upon the availability of wide genetic diversity.

Turkey is located in the Eastern Mediterranean and bridge between Europe and Asia in the northern hemisphere and located in subtropics zone in between 36-42° latitudes N and 26-45° longitude E. The area is 783.562 km². The total amount of arable land and land under permanent about 23 million hectares. The topography of Turkey exhibits significant variety where ecological factors change greatly over very short distance.

- Turkey has very rich biological diversity besides their natural beauties in comparison others northern hemisphere countries. The richness may be explained depend on their geographical and physical structure. The potential and reasons can be described with below factors:
- Three sides of Turkey surrounded by different ecological sea (Black sea, Aegean and Mediterranean).
- The Turkish landscape covers diversity of geography (topography, climate).
- The amount of precipitation per year ranged between 250 mm-2500 mm
- There are different types of ecosystems in the country because of their geological and topographical structure.

There are three phytogeography regions, Mediterranean, Euro-Siberian and Irano-Turanian phytogeography regions which are the indication of diverse climate and topography of the country.

Two bird migration routes out of four are passed on Turkey among Europe, Asia and Africa continents

- The Near Eastern and Mediterranean diversity centers (Vavilov's Center of Origin) of cultivated plants are intersect in Turkey.
- Turkey one of domestication centers where ancient agriculture started (Fertile crescent)
- Turkey has also 5 micro gene centers for many cultivated plants.

Thus, Turkey endowed with a rich diversity of family, genera and species of plants. The total of seedy plants number is 174 families, 1251 genera and 9222 species, and 1/3 these species are endemic. As know that Europe continent (all countries included) has only 12 500 species [2,3].

Turkish flora includes many wild relatives of important cultivated plants (e.g. wheat, barley, chickpea, lentil, oil plants, forage legume, some fruits such as cherry, apricot, chestnut, pistachio etc.) as well. The Turkish flora also includes many economically important timber species, and medicinal, aromatic, industrial and ornamental plants.

There are five more or less distinct kinds of germplasm material which are involved: (1) cultivars in current use, (2) obsolete cultivars, (3) special genetic stocks, such as resistance stocks, genetic and cytogenetic material, induced mutations etc., (4) primitive varieties or land races, and (5) wild and weed species related to cultivated species. The primitive varieties or land races, wild crop relatives and transition lines (semi-wild species) of Turkey provide new sources of important traits to improve new varieties and introduce new source efficient worldwide [4,5].

Wild relatives and wild ancestors of cereals include those of wheat (wild einkorn, *Triticum boeoticum*; wild emmer, *Triticum dicoccoides*; goat grass *Aegilops ssp.*) barley (*Hordeum spontaneum*, *H. bulbosum*, *H. marinum* and *H. murinum*), oats (*Avena spp*), and rye (*Secale spp*) [5]. Five wild species of lentil (*Lens culinaris Medik*) *Lens orientalis*, *L. nigricans*, *L. ervoides*, *L. montbretii*, *L. odemensis*, the wild and progenitor of pea (*Pisum sativum L.*) *Pisum humile* and *P. Elatius*, and wild progenitor (*Cicer reticulatum*) of cultivated chickpea (*Cicer arietinum L.*) and others closed relatives such as *Cicer pinnatifidum*, *C. echinospermum* and *C. bijigum* occur in Turkey [6].

Turkey extremely rich for medicinal, aromatic and ornamental plant species. Within ornamental plants the great numbers of bulbous tuberous plants, woody and herbaceous perennials, biennials and annuals are found. Medicinal and aromatic plants populations also common in Turkey. The rate of endemic is also high in within those plant groups. The number of vegetable has their origin in the country. The indigenous fruit trees are also found in Turkey [6,7]. And also the wild relatives of forage grass and a legume commonly occurs in Turkey. The natural pastures and meadows show high genetic diversity.

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