

Botany of *Cucumis melo*

Opinion

Cucurbitaceae is a family of the genus *Cucumis* and consists of more than 30 species. Of these known species, the cultivated species include cucumber (*C. sativus* L.), melon (*C. melo* L.) and horned cucumber or kiwano (*C. metuliferus* E. Mey ex Schrad), which are all annual plants. They have large angular leaves, long petioles, simple tendrils, long branched and hirsute stems, and with climbing or trailing growth habits. *Cucumis melo* is the most polymorphic species which is a character of great importance in taxonomic studies. Several taxonomic studies have attempted to taxonomically subdivide melons into subspecies, botanical varieties or groups. A classification study proposed by Naudin¹ resulted in the grouping of these species into 10 botanical groups based on the diverse forms. Whitaker & Davis,² Munger & Robinson,³ Robinson & Decker-Walters⁴ also contributed to Naudin's¹ classification which remained a basis for melon intra-specific classification with amendments being brought today. These taxonomic studies resulted in the 7 intra-specific groups of melons known present: *agrestis* (wild melon), *cantalupensis* (sweet melon), *inodorus* (winter melon), *flexuosus* (snake melon or snake cucumber), *conomon* (pickling melon), *dudaim* (mango melon or pomegranate melon) and *momordica* (snap melon). Africa is considered to be the centre of origin for melon because of the frequent occurrence of wild species of *Cucumis* with the same basic chromosome number $n=12$.⁵ The secondary center of origin of melon is in Turkey, Syria, Iran, Afghanistan, India, Turkmenistan, Tajikistan and Uzbekistan. China, Korea, Portugal and Spain were also referred as the secondary centres of diversity for these species. Whitaker & Bemis⁶ also indicated that *C. melo* are found only in eastern tropical Africa south of the Sahara. In addition to the results, Pitrat et al.⁷ reported that wild types are commonly found in the Sudano-Sahelian area. Furthermore the secondary centre of diversity stretch from Asia to the Mediterranean to Japan. *Cucumis melo*, which came in many different forms and uses, is one of the important horticultural crops worldwide and plays an important role in international trade. The immature and mature melon fruits are used as dessert and vegetables.⁵ Melon seeds are also eaten after being slightly roasted, and is also used to produce edible oils. Pest and different agents, such as bacteria, fungi and viruses are known to provoke diseases and great losses in melons. Their distribution and impact on melon plants vary around the world. *Fusarium* wilt, powdery mildew, *Alternaria* leaf blight and gummy stem blight are among the important fungal diseases known. Lecoq et al.⁸ discussed that some viral diseases that cause economic losses globally are Cucumber Mosaic Virus (CMV), Papaya Ring Spot Virus (PRSV), Watermelon Mosaic Virus 2 (WMV 2), Zucchini Yellow Mosaic Virus (ZYMV), Cucurbit Aphid-Borne Yellow Virus (CABYV), Squash Mosaic Virus (SqMV) and Watermelon Chlorotic Stunt Virus (WCSV). Pests such as the white fly, aphids, leaf miner and the fruit fly are different insect species known to infest melons. Damages caused by insect pest are either direct through insect feeding or indirect through transmission of viral diseases. White flies (*Bemisia tabaci*) known to transmit Geminiviruses as WCSV,⁹ while aphids are known to transmit both Luteo viruses as CABYV¹⁰ and Potyviruses as ZYMV.⁴ Leaf miners (*Liriomyza* spp.) caused damage on melons

Volume 2 Issue 3 - 2018

Ismail Bezirganoglu

Department of Molecular Biology and Genetics, Erzurum Technical University, Turkey

Correspondence: Ismail Bezirganoglu, Department of Molecular Biology and Genetics, Erzurum Technical University, Turkey, Tel 0090 5072798773, Email ismail.bezirganoglu@erzurum.edu.tr

Received: January 09, 2018 | Published: May 31, 2018

through feeding punctures while it larva bores leaf tissues.¹⁰ The melon fruit fly (*Dacus* spp.) also causes severe damage during oviposition of female fly in immature melon fruits.⁴

Acknowledgements

None.

Conflict of interest

Author declares that there is no conflict of interest.

References

1. Naudin C. Essais d'une monographie des especes et des varietes du genre *Cucumis*. *Annales des Sciences Naturelles*. 1859;11:5-87.
2. Whitaker TW, Davis GN. Cucurbits: Botany, Cultivation and Utilization. *Leonard Hill*. 1962.
3. Munger HM, Robinson RW. Nomenclature of *Cucumis melo* L. *Cucurbit Genetics Cooperative Report*. 1991;14:43-44.
4. Robinson RW, Decker Walters DS. Cucurbits. *CABI*. 1997;226.
5. El Tahir IM, Taha Yousif M. Indigenous melons (*Cucumis melo* L.) in Sudan: a review of their genetic resources and prospects for use as sources of disease and insect resistance. *Plant Genet Res Newsl*. 2004;138:36-42.
6. Whitaker TW, Bemis WP. Cucurbits. In: Simmonds NW editor. *Evolution of crop plants*, 2nd edition. UK;1976:64-69.
7. Pitrat M, Hanelt P, Hammer K. Some comments on interspecific classification of cultivars of melon. *Acta Horticulturae*. 2000;510: 29-36.
8. Lecoq H, Lot H, Gebre Selassie K. Integrated management of virus diseases in vegetable crops in the open field. *Arab J Plant Pathol*. 1998;16(1): 32-34.
9. Kheyer Pour A, Bananej K, Daffalla GA, et al. Watermelon chlorotic stunt virus from the Sudan and Iran: Sequence comparisons and identification of a whitefly-transmission determinant. *Phytopathology*. 2000;90(6):629-635.
10. Dogimont C, Bordat D, Pitrat M, et al. Characterization of resistance to *Liriomyza trifolii* (Burgess) in melon (*Cucumis melo* L.). *Fruits*. 1995;50(6):449-452.