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Wanga melon: Important less-known melon from Northwestern part of India

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INTRODUCTION

Melons (*Cucumis melo* L.) are members of the family *Cucurbitaceae* and are widely distributed across pantropical regions. India is regarded as the center of origin and genetic diversity for melons, with evidence of their domestication dating back to 2000 B.C. These fruits exhibit extensive morphological variation, primarily attributed to the domestication process, which has resulted in the development of multiple cultivar groups with distinct characteristics.

Taxonomically, *Cucumis melo* is classified into two major subspecies based on ovary pubescence: subsp. melo, which possesses long hairs, and subsp. agrestis (Naud.) Pangalo, which is characterized by short hairs. Among the lesser-known melon varieties, most except for snap melon are restricted to specific ecological niches. One such melon, cultivated predominantly in the northwestern regions of India, particularly in Punjab and Rajasthan, is the wanga melon. Locally known as 'wangey' or ‘wanga’ in Punjabi. This melon is widely distributed in the Fazilka district of Punjab, the Sirsa district of Haryana, and the Sri Ganganagar and Bikaner districts of Rajasthan. It occurs in both cultivated and wild forms. The vines of this melon are frequently observed growing within cotton fields.

Wanga melon is a well-known and commonly used alternative to cucumber, frequently consumed as a salad by local populations. Owing to its rich mineral composition, this melon exhibits an alkaline effect on the human body, which contributes to maintaining pH balance and overall well-being. Additionally, it possesses natural cooling properties, making it particularly beneficial for consumption in hot climatic conditions. Like other members of the Cucurbitaceae family, wanga melon serves as a valuable source of essential vitamins, minerals, and bioactive secondary plant metabolites, all of which play a significant role in promoting human health and nutrition.

Moreover, wanga melons are characterized by their hardy nature, which enables them to grow successfully even under suboptimal agricultural conditions. They demonstrate a remarkable ability to thrive in less fertile soils as well as barren lands, requiring minimal agricultural inputs and care for their cultivation. This resilience makes them particularly suitable for regions where conventional crops may struggle to survive due to soil nutrient deficiencies or water scarcity.

Despite possessing several nutritional and agronomic advantages, the cultivation of wanga melon remains largely confined to specific regions of northwestern India, limiting its accessibility and widespread use. Therefore, it is imperative to promote and popularize wanga melon as a viable alternative to cucumber, particularly in regions where cucumbers may not be readily available or require extensive cultivation efforts.

Additionally, wanga melon is of particular scientific interest due to ongoing taxonomic ambiguities associated with its classification. The existing uncertainty regarding its precise botanical identity necessitates further research and taxonomic studies to accurately determine its classification within the Cucurbitaceae family. Conducting comprehensive research on this species will not only clarify its taxonomic status but also facilitate its improved cultivation, conservation, and utilization on a broader scale.

Botany and distribution:

The cultivation of the wanga plant is predominantly observed in regions characterized by semi-arid and arid climatic conditions, with its growth being primarily restricted to the states of Punjab and Rajasthan. The plant typically grows in the form of trailing vines that extend to lengths ranging between 1.5 to 4.0 m. These vines are covered with a fine layer of soft hairs, giving them a slightly fuzzy texture.

The leaves of the wanga plant exhibit a morphological structure that varies from ovate to reniform in shape. Additionally, the plant is equipped with simple, curled tendrils, which aid in its climbing and support mechanisms. The flowers produced by the plant are bright yellow in color, with a distinct differentiation between male and female floral structures. Male flowers generally measure between 2 to 4 cm in length and are found in clusters of four to five per plant, whereas female flowers appear solitarily, with an average length ranging from 2.5 to 3.5 cm.

The fruit of the wanga plant typically exhibits a globose to oval shape, with an overall length that can extend up to approximately 12 cm. The external surface of the fruit is green in color and prominently marked by dark green longitudinal sutures. Internally, the fruit possesses a fleshy interior that is greenish-white in appearance, contributing to its distinctive texture and composition (Fig. 1).

Fig. 1: Pictorial representation of different significant botanical parts of Wanga melon: a & b Fruits; c. female flower, yellow colour with long pedicel

Cultivation practices and uses of wanga melon:

Wanga melon commonly appears to be growing in cotton field. Minor proportion of this crop is cultivated as a solo crop in the farmer's field. Basic cultivation practices of wanga melon are somewhat similar to other related melon like snake melon. Wanga thrives in well in well-prepared land with fine tilth. In general, two to three ploughings are done followed by harrowing. It grows well in two seasons ie., Spring- summer (last week of Feb to last week of March) and Kharif (Onset of monsoon, July-August). However, crop grows better in the kharif season. Traditionally, seeds of wanga are mix-cropped with other popular melons like Snap melon and *Kachari* in the field of cotton or other major growing crops based on the region. However, line sowing is also observed in some parts of Fazilka, where seeds are sown on bed and seed rate is recommended @ 1kg per acre. In line sowing, seeds are sown at the distance of 2-4 cm with the hill distance of 60-90 cm and between channel spacing of 250-300 cm. Two seeds per hill ensures a good stand. Fertilization is advisable as per standard recommendation: 15 tonnes of farmyard manure; 40 kg of nitrogen; 20 kg phosphoric acid; 15 kg of potash (per acre).

The fruits of the wanga plant are typically harvested while they are still in an unripe stage, at which point their seeds remain soft, tender, and immature. The young, tender fruits are commonly consumed in their raw form and are often incorporated into salads in a manner similar to cucumbers. Additionally, fruits that have reached a semi-ripe stage, characterized by a slightly acidic taste, are also considered edible. However, before consumption, the seeds and the central placenta of these semi-ripe fruits are generally removed and discarded.

Way forward:

Wanga melon is cultivated in limited regions of Punjab and Rajasthan. With the widespread commercialization of other cucurbit species, such as cucumber, this lesser-known melon faces the risk of habitat erosion, making its conservation a priority.

Taxonomically, wanga melon is generally placed under *Cucumis melo* subsp. *melo*. However, certain studies indicate that its precise taxonomic status remains ambiguous. Further research is required to accurately determine its classification.

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