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A new resistant and quality watermelon cultivar Shenxuan 958

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Watermelon Fusarium wilt is a soil-borne disease caused by *Fusarium oxysporum*, which has severely limited the sustainable development of watermelon production in the world. At present, there are no effective bactericides to prevent and control Fusarium wilt. Breeding for disease resistant watermelon new varieties is the most economical and effective way to solve this problem. Moreover, in the last ten years, because of the rapid application of intensive facility cultivation in China, the traditional rotation cultivation of watermelon has been extremely difficult, which caused Fusarium wilt to be more and more serious. So new watermelon varieties with disease resistance, good quality and early-middle maturity suitable for the facility cultivation and could meet the demand of modern market are in urgent need. ‘Shenxuan 958’ is a new watermelon hybrid cultivar with resistance to Fusarium wilt and good quality, which is developed by using the inbred line W26-5-8 as female parent and the inbred line V16-3-7 as male parent. This cultivar grows vigorously and tolerant to low temperature and weak light, and it is easy fruit-setting under the sloppy and weak light weather of southern China. ‘Shenxuan 958’ shows early-middle maturity, harvested about 35 days after flowering, and fruit weight is about 5.5 kg, the general yield is about 52.5 t/hm². The fruit shape of ‘Shenxuan 958’ is ellipse, and the skin is green with dark green middle strips. The flesh is dark pink color, the center soluble sugar contents is over 12%, the side soluble sugar contents is over 8.5%, and with more juice and delicate. The fruit is tolerance to transportation and storage, and this new cultivar is with wide adaptation. It is suitable for cultivation in open or protected facilities in southern or northern China. The extension area has been over 746.6 hm² in Jiangsu, Zhejiang, Shanghai and Anhui province of China.

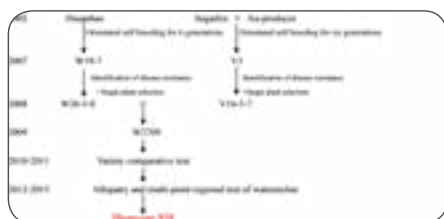


Figure 1: The breeding process of ‘Shenxuan 958’.



Figure 2: The new watermelon variety ‘Shenxuan 958’.

Variety	Single fruit weight (kg)	Average fruit weight (kg)	Fruit shape	Fruit color	Soluble sugar content (%)			Fruit quality
					Center	Side	Overall	
Shenxuan 958	5.5	5.5	Ellipse	Green	12.5	8.5	10.5	Good
Local 958	4.8	4.8	Round	Green	10.5	7.5	9.0	General

Table 1 Fruit quality traits of ‘Shenxuan 958’

Variety	Cultivar (Shenxuan 958)		Local (958)		Resistance	
	Disease index (%)	Resistance grade	Disease index (%)	Resistance grade	Disease index (%)	Resistance grade
Shenxuan 958	0.5	NR	4.5	HR	1.8	HR
Local 958	5.7	I	48.2	HR	2.7	HR

Table 2 Diseases resistance of ‘Shenxuan 958’

Year	Experiment site	Harvesting yield (t/hm ²)		General yield
		Shenxuan 958	Local 958	
2010	Yangpu Station	32.5	27.8	30.1
	Putuoshan Station	35.8	30.2	33.0
2011	Yangpu Station	35.5	30.8	33.1
	Putuoshan Station	38.8	33.5	36.1

Table 3 Yields of ‘Shenxuan 958’ in regional testing between 2010 to 2011 in Shanghai

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Recent Publications:

1. Wang H B et al. (2003) The course of watermelon breeding and germplasm bases of watermelon cultivars in USA. *Acta Horticulturae Sinica*. 30(3):366-369.
2. Norton J D et al. (1995) AU-Sweet Scarlet watermelon. *HortScience*. 30(2):393-394.
3. Norton J D et al. (1993). AU-Golden Producer watermelon. *HortScience*. 28(6):681-682.
4. Gu W H et al. (2006) A new watermelon hybrid Kangbing 948. *Acta Horticulturae Sinica*. 33(4):932.
5. Ma C S et al. (2003) A new watermelon variety 'Yuyi 2000' with disease resistance and high yields. *Watermelon and melon of China*, 5: 6-8. (Chinese article).

Biography

Gu Weihong has been working at the Shanghai Academy of Agricultural Sciences since 1988. She is committed to breed and popularize new varieties of watermelon, pumpkin and vegetable soybean. She has bred 12 new watermelon hybrids, 8 new vegetable soybean varieties.

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