

‘Skinny Green’, a Novel Hairless Green-fleshed Baby Kiwifruit

Yong-Bum Kwack*, Hak-Soon Choi, Won-Byoung Chae, and Myeong-II Jeong

National Institute of Horticultural & Herbal Science, Rural Development Administration, Suwon 440-706, Korea

Abstract. ‘Skinny Green’ is the third hairless-variety release by National Institute of Horticultural & Herbal Science (NIHHS) of Rural Development Administration (RDA) in Korea. It was bred by field crossing using the KN8903 as the mother plant, which had been selected from the crossbreeding of a Korean wild germplasm of tara vine with a male *Actinidia deliciosa* cv. Tomuri, and tara vine as the father plant collected from Korean mountains. The principal features of the final release are firstly, the fruit size not bigger than a mouthful bite with the average fruit weight not more than 19.3 g, and secondly, the thin and hairless edible fruit skin. It has green flesh color maintaining soluble solids and acid contents about 16.7 °Brix and 0.91% respectively. Its harvest season is usually in mid October. As it is not self-fertile it needs artificial pollination. Its tendency to produce maximum numbers of fruit requires thinning out of the fruits in a proper way.

Additional key words: *Actinidia*, hardy kiwi, kiwi berry, yang-tao

Introduction

Kiwifruit was officially introduced to Korea in 1978. At initial period many cultivars were introduced to be grown in a small magnitude. Among them were ‘Hayward’, ‘Abbott’, ‘Monty’, and ‘Bruno’. But ‘Hayward’ became a major commercial cultivar while others could hardly be seen in Korea in the mid 1990s (Kwack and Park, 2007; Kwack et al., 2008). These days the Korean consumers have increased chances to experience diverse cultivars; many became aware of the existence many kiwifruit cultivars and are stepping into the world of *Actinidia* to enjoy diverse taste. Meanwhile, our breeding program, at National Institute of Horticultural & Herbal Science (NIHHS) of Rural Development Administration (RDA) in Korea, which started a little bit later in 1984 have continued introducing new varieties having such features as novel flesh colors, good flavor, and hairless fruit skin etc. Now, we report here a new release of ‘Skinny Green’, a new baby kiwifruit.

Origin

Conventional field crossing was done at the RDA Kiwifruit Breeding Orchard in 1999. In cross breeding, the maternal tree was an intermediate line KN8903 which is a selected seedling from the cross between a Korean wild germplasm of tara vine (*A. arguta*) and a male *A. deliciosa* cv. Tomuri, and the paternal tree was tara vine (*A. arguta*) collected from

Korean mountains (Fig. 1).

First selection was done in 2005 and the final release was made in 2007 after examination of tree and fruit characteristics for three years. All observation and evaluation of fruit/tree characteristics were done according to the test guideline of Korea Seed & Variety Service (KSVS) for kiwifruit and International Union for the Protection of New Varieties of Plants (UPOV) guidelines for *Actinidia* (KSVS, 2002; UPOV, 2001).

Description

‘Skinny Green’ is a female tree for fruit-set (Fig. 2). Owing to the thin, hairless and mouthful sized fruit properties, one can eat a whole fruit at a gulp without peeling. Plant vigor is medium, and young shoot have no hair as tara vine (*A. arguta*). It shows grey brown color on sunny side stem, and has comparatively more lenticels on its stem while tara vine (*A. arguta*) has medium number of lenticels. Arrangement

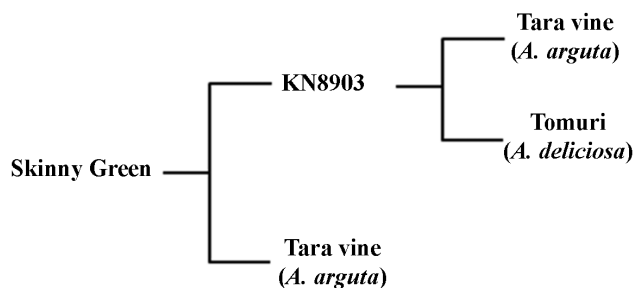


Fig. 1. Pedigree of a novel hairless green-fleshed baby kiwifruit ‘Skinny Green’.

*Corresponding author: kwack@korea.kr

※ Received 25 January 2010; Accepted 26 March 2010.

of basal lobes of leaf blade is far apart while that of tara vine (*A. arguta*) is slightly apart. Also, it shows very weak puckering/blistering on upper side of its leaf blade while tara vine shows medium puckering/blistering on upper side of leaf blade. In the case of leaf petiole anthocyanin coloration, the upper side ‘Skinny Green’ shows comparatively weak coloration while tara vine (*A. arguta*) shows medium coloration (Table 1). It has predominant flowers from one up to three while tara vine (*A. arguta*) have usually three flowers. The flower stalk diameter of ‘Skinny Green’ is 4-5 cm, and the color of anther is black as tara vine (*A. arguta*).

The general shape of the fruit is cylindrical, the stylar end is slightly pointed and protruded, and the stalk shoulder shape is square. The average fruit weight, soluble solids content (SSC), and acidity is 19.3 g, 16.7 °Brix, and 0.91% respectively (Table 2). The fruit skin is hairless and medium

green, and when the fruit is matured enough the outer pericarp also shows medium green color (Fig. 2). The fruit is highly sweet when matured enough for consumption. Harvest picking is usually done in mid October in Namhae, located at southern coastal region of South Korea.

It is not self-fertile like other cultivars in the family, and there are no commercially available male trees which bloom at the same time or earlier. Therefore growers have to save the pollen grains in a deep freezer to pollinate artificially in the next year.

Availability

‘Skinny Green’ was registered to KSVS in 2008 (03-0013-2008-1), and Namhae Sub-Station of RDA has the license to propagate and sell the plant variety.

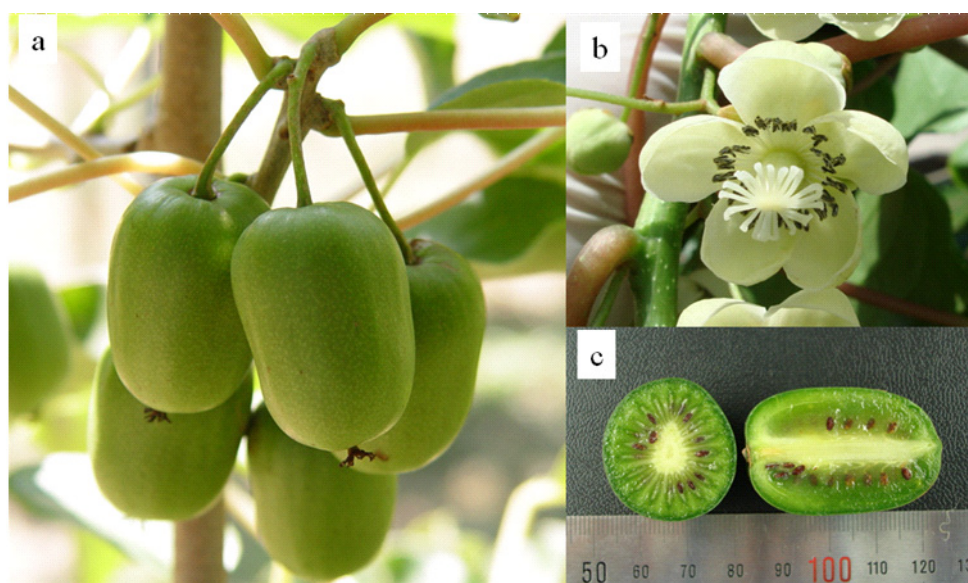


Fig. 2. Appearance of fruit-set (a), flowering (b), and sectioned shape (c) of a novel hairless green-fleshed baby kiwifruit ‘Skinny Green’.

Table 1. Tree growth and development characteristics of a novel hairless green-fleshed baby kiwifruit ‘Skinny Green’.

Cultivar	Bud break	Full bloom	Pick time	Color of shoot on sunny side	Number of lenticels on stem	Arrangement of leaf basal lobes	Puckering/blistering on upper side of leaf
Skinny Green	Late March	Mid May	Mid Oct.	Grey brown	Many	Far apart	Absent/very sparse
Tara vine	Late March	Mid May	Mid to late Sept.	Light brown	Medium	Slightly apart	Medium

Table 2. Fruit traits of a novel hairless green-fleshed baby kiwifruit ‘Skinny Green’.

Cultivar	General shape	Flesh color	Hairiness of fruit skin	Fruit wt (g)	SSC (°Brix)	Acidity (%)	Ratio of max/min diameter	Length/diameter ratio
Skinny Green	Cylindrical	Green	Absent	19.3 ± 2.2 ^z	16.7 ± 2.4	0.91 ± 0.25	1.09 ± 0.08	1.31 ± 0.04
Tara vine	Ellipsoid	Green	Absent	9.2 ± 0.4	16.2 ± 1.3	1.03 ± 0.27	1.13 ± 0.01	1.00 ± 0.01

^zValues represent mean ± SE.

Literature Cited

International Union for the Protection of New Varieties of Plants (UPOV). 2001. Guidelines for the conduct of tests for distinctness, uniformity and stability in Actinidia (*Actinidia* Lindl.). p. 6-41. Geneva, Switzerland.

Korea Seed and Variety Service (KSVS). 2002. Test guideline of characteristics for application and registration of new

varieties in kiwifruit. Anyang, Korea.

Kwack, Y.B. and Y.S. Park. 2007. Kiwifruit, p. 244-249. In: J.M. Lee, G.W. Choi, and J. Janick (eds.). Horticulture in Korea. Kor. Soc. Hort. Sci. Press, Suwon, Korea.

Kwack, Y.B., P.N. Paek, K.H. Chung, and J.H. Hwang. 2008. A new hairless baby kiwifruit 'Bangwoori'. Kor. J. Hort. Sci. Technol. 26 (Suppl. II):41-43.

새로운 털 없는 녹색 미니 참다래 '스키니그린'

곽용범* · 최학순 · 채원병 · 정명일

농촌진흥청 국립원예특작과학원

(*교신저자)

초 록. '스키니그린'은 농촌진흥청 국립원예특작과학원에서 육성된 세번째 털 없는 미니 참다래 품종이다. 교배모본은 한국에서 수집된 야생 다래(*Actinidia arguta*)와 수품종 토무리(*A. deliciosa*) 사이의 교잡에서 선발된 중간계통인 KN8903이며, 부분은 한국의 산에서 수집된 야생 다래(*A. arguta*)이다. 이 품종의 주요 특징은 과중이 19.3g으로 한 입에 먹을 수 있는 과실크기와 과피에 털이 없고 얇아 껍질째 먹을 수 있다는 것이다. 과육의 색은 녹색이며, 당도와 산함량은 각각 16.7°Brix와 0.91%이다. 수확은 주로 10월 중순에 이루어지며, 자가결실성이 없는 품종으로 정상적인 착과를 위해서는 인공수분이 필요하다. 또한 풍산성으로 적절한 적과 작업이 필요하다.

추가 주요어 : 다래나무속, 하디키위, 키위베리, 양타오