

### OA3. Nut characteristics of Korean Native Chestnut Accessions selected for nut quality

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#### Objectives

This study was conducted to conserve excellent Korean native chestnut genetic resources and to establish breeding population for releasing new cultivars.

#### Material and Methods

##### Accession and cultivars

- Korean native chestnut: 44 accessions selected at Gyeonggi, Gangwon and Gyeongbuk Province
- Prevailing cultivars in Korea: Tanzawa, Okkwang, Ginyose, Riheiguri, Tsukuba

##### Nut traits

nut weight, soluble solid content, hardness, percent of polyembryonic nuts, percent with the pericarp split,

#### Result and Discussion

13 of 44 Korean native chestnut accessions investigated were above 14g in nut weight(average 15.9g) and superior to non-selected Korean native chestnut(9.4g). 5 accessions were finally selected for good nut quality, which were below 5% in percent of polyembryonic nuts and percent with the pericarp split related to market values, and above 15g in nut weight(Table 1). These accessions were smaller in nut size, but higher in soluble solid content and hardness than prevailing cultivars cultivated in Korea. These results showed that Korean native chestnut accessions might be good breeding materials for releasing new cultivars on high sweetness and easy of peeling

Table 1. The comparison of selected Korean native chestnut accessions and prevailing cultivars in nut traits

	Accession/ Cultivars	Nut weight (g)	Soluble solid content (%)	Hardness (kg/cm <sup>2</sup> )	% of polyembryonic nuts (%)	% with the pericarp split (%)	Facility of peeling (%)
Korean Native Chestnut	Gwacheon11	17.6	15.2	12.5	0	0	57.1
	Uljin03	18.9	18.6	12.1	0	0	71.9
	Hyeonri07	15.3	14.1	9.9	4.4	2.0	100.0
	Hongcheon08	15.3	19.8	11.6	0	0.7	73.3
	Hongcheon22	17.6	18.1	12.0	3.3	3.9	100.0
	<b>Average</b>		<b>16.9</b>	<b>17.2</b>	<b>11.6</b>		
Prevailing Cultivars	Tanzawa	21.9	10.2	7.1	5.2	6.6	31.4
	Okkwang	18.7	12.5	8.2	0	10.6	17.6
	Ginyose	24.7	11.5	9.0	0.8	2.9	17.1
	Riheiguri	22.8	11.3	8.1	0	18.6	83.3
	Tsukuba	18.9	12.8	9.9	0	0	0.0
	<b>Average</b>		<b>21.4</b>	<b>11.7</b>	<b>8.5</b>		

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