

**Supplementary Material**

**Assessing genetic diversity and population structure of Iranian melons (*Cucumis melo*) collection using primer pair markers in association with resistance to Fusarium wilt**

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**Supplementary Table S1.** Hierarchical distribution of genetic diversity among the population using AMOVA test based on SSR, SRAP and ISSR data.

Source	df	SS	MS	Estimated Variation	Variation (%)	$\Phi_{PT}^*$	p (rand $\geq$ data)
<b>Among Pops</b>	5	108.659	12.732	1.754	12	0.124	0.001
<b>Within Pops</b>	28	346.811	12.386	12.386	88		
<b>Total</b>	33	455.471		14.140	100		

P value for randomization test for  $\Phi$  is based on standard permutations across the full data set,  $\Phi_{PT}^* = P/(WP+AP) = AP/TOT$ , AP = Est. Var. Among Pops, WP = Est. Var. Within Pops.

**Supplementary Table S2.** Pairwise Population Fst Values.

	Negin Bazr	Research Center	Pakan Bazr	Tehran	Farhadi & Karimi	Dolat Abad
<b>Negin Bazr</b>	0.000					
<b>Research Center</b>	0.176	0.000				
<b>Pakan Bazr</b>	0.246	0.099	0.000			
<b>Tehran</b>	0.038	0.198	0.276	0.000		
<b>Farhadi &amp; Karimi</b>	0.104	0.000	0.001	0.204	0.000	
<b>Dolat Abad</b>	0.160	0.009	0.080	0.176	0.022	0.000

**Supplementary Table S3.** Principal component analysis of SRAP markers.

Main component	Special values	Justified variance	Cumulative variance
First component	2.376	16.549	16.549
Second component	1.417	9.869	26.418
Third component	1.186	8.263	34.681
Fourth component	0.969	6.749	41.431
Fifth component	0.836	5.822	47.254

**Supplementary Table S4.** Principal component analysis of SSR markers.

Main component	Special values	Justified variance	Cumulative variance
First component	2.891	20.797	20.797
Second component	1.622	11.673	32.471
Third component	1.284	9.240	41.711
Fourth component	1.164	8.380	50.091
Fifth component	0.889	6.398	56.490

**Supplementary Table S5.** Principal component analysis of ISSR markers.

Main component	Special values	Justified variance	Cumulative variance
First component	2.640	18.278	18.278
Second component	1.366	9.463	27.742
Third component	1.123	7.777	35.519
Fourth component	0.934	6.473	41.992
Fifth component	0.797	5.524	47.517