

Additional file 1. A. Founders of the MEGGIC population including their country of origin and code assessed in this study. **B.** Funnel breeding design for developing the S5MEGGIC population. The process began with eight parent lines (G_0), labelled A to H. These parents were crossed in pairs (A x B, C x D, E x F, G x H) to produce four simple hybrids (G_1). Next, these simple hybrids were crossed in pairs (AB x CD, EF x GH) to create two double hybrids (G_2). The double hybrids were then crossed (ABCD x EFGH) to form the quadruple hybrids (G_3). Following this, the quadruple hybrids underwent intercrossing and were subjected to five rounds of single seed descent (SSD). Adapted from Mangino et al. [1].

A

Taxon and accession	Country of origin	MAGIC's parent code
<i>S. incanum</i> L.		
MM577	Israel	C
<i>S. melongena</i> L.		
MM1597	India	A
DH_ECAVI	Breeding line	B
AN-S-26	Spain	D
H15	Spain	E
A0416	Unknown	F
IVIA-371	Spain	G
ASI-S-1	China	H

B

