

Supplementary Materials



Figure S1. Shape variation observed in female flower of Japanese and Mexican *S. edule* varieties. 1-5, Mexican *S. edule* varieties (1a,b, *virens levis*; 2a,b, *nigrum xalapensis*; 3, *nigrum minor*; 4a,b, *albus levis*; 5, *albus dulcis*); 6, Japanese *S. edule* variety *albus levis*. The bars represent 0.5 cm.



Figure S2. Shape variation observed in male flower of Japanese and Mexican *S. edule* varieties. 1-5, Mexican *S. edule* varieties (**1**, *virens levis*; **2**, *nigrum xalapensis*; **3**, *nigrum minor*; **4**, *albus levis*; **5**, *albus dulcis*); **6**, Japanese *S. edule* variety *albus levis*.

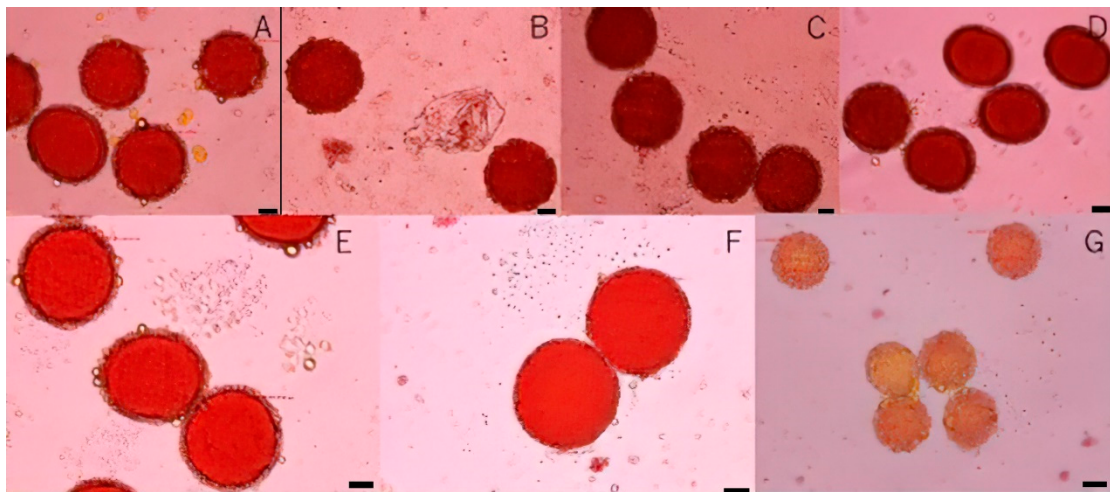


Figure S3. Pollen photos of 5 Mexican and 1 Japanese *S. edule* varieties. **A**, **B**, **C**, **D**, and **E** represent pollen of 5 Mexican *S. edule* varieties *virens levis*, *nigrum xalapensis*, *nigrum minor*, *albus dulcis*, and *albus levis*; **F**, **G** represents Japanese *S. edule* varieties *albus levis* and *virens levis*. The black scale bars indicate 20 μ m.

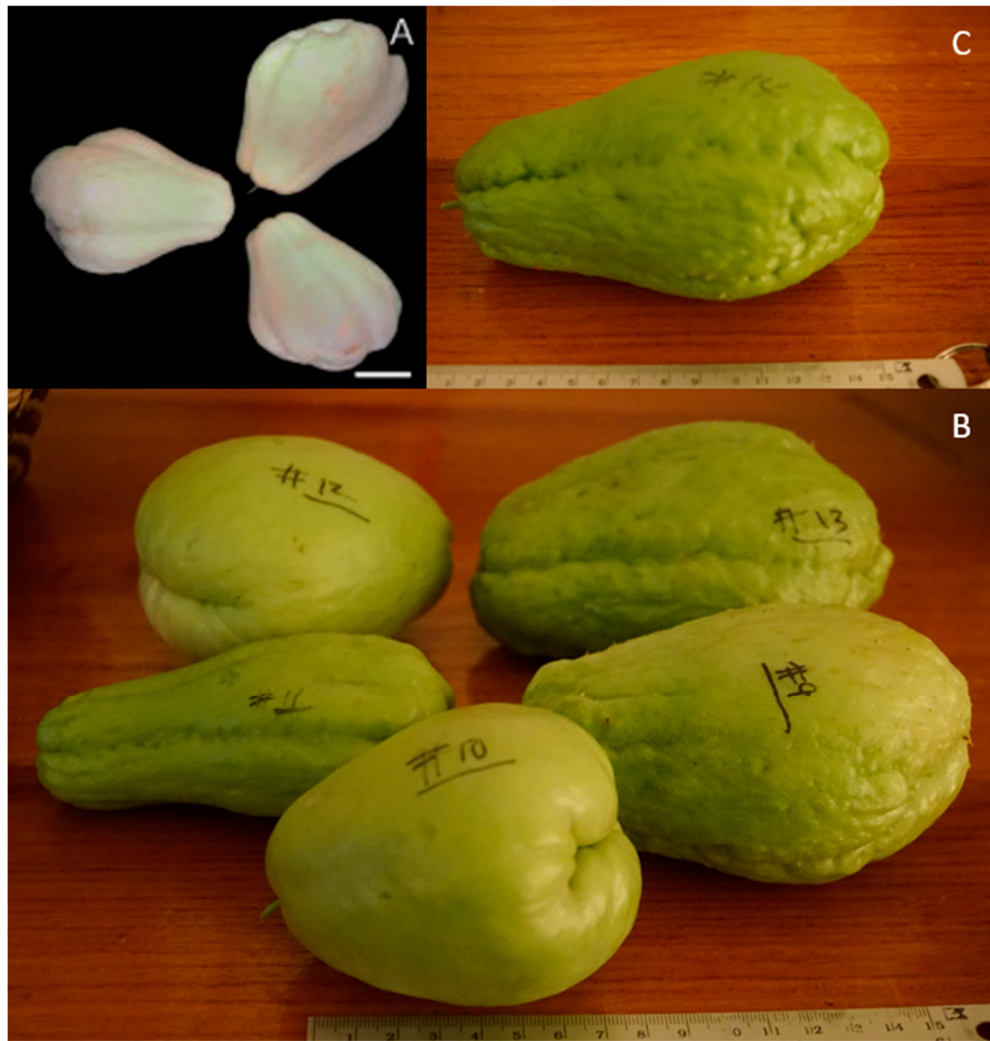


Figure S4. Mature fruit of representative Japanese and Myanmar accessions. **A:** KW019, Japanese *albus levis* accession, the bar represents 2 cm. **B,C:** #10=KNW10, #12=KNW12, Myanmar *albus levis* accessions; #9=KNW09, #11=KNW11, #13=KNW13, #14=KNW14, Myanmar *virens levis* accessions.

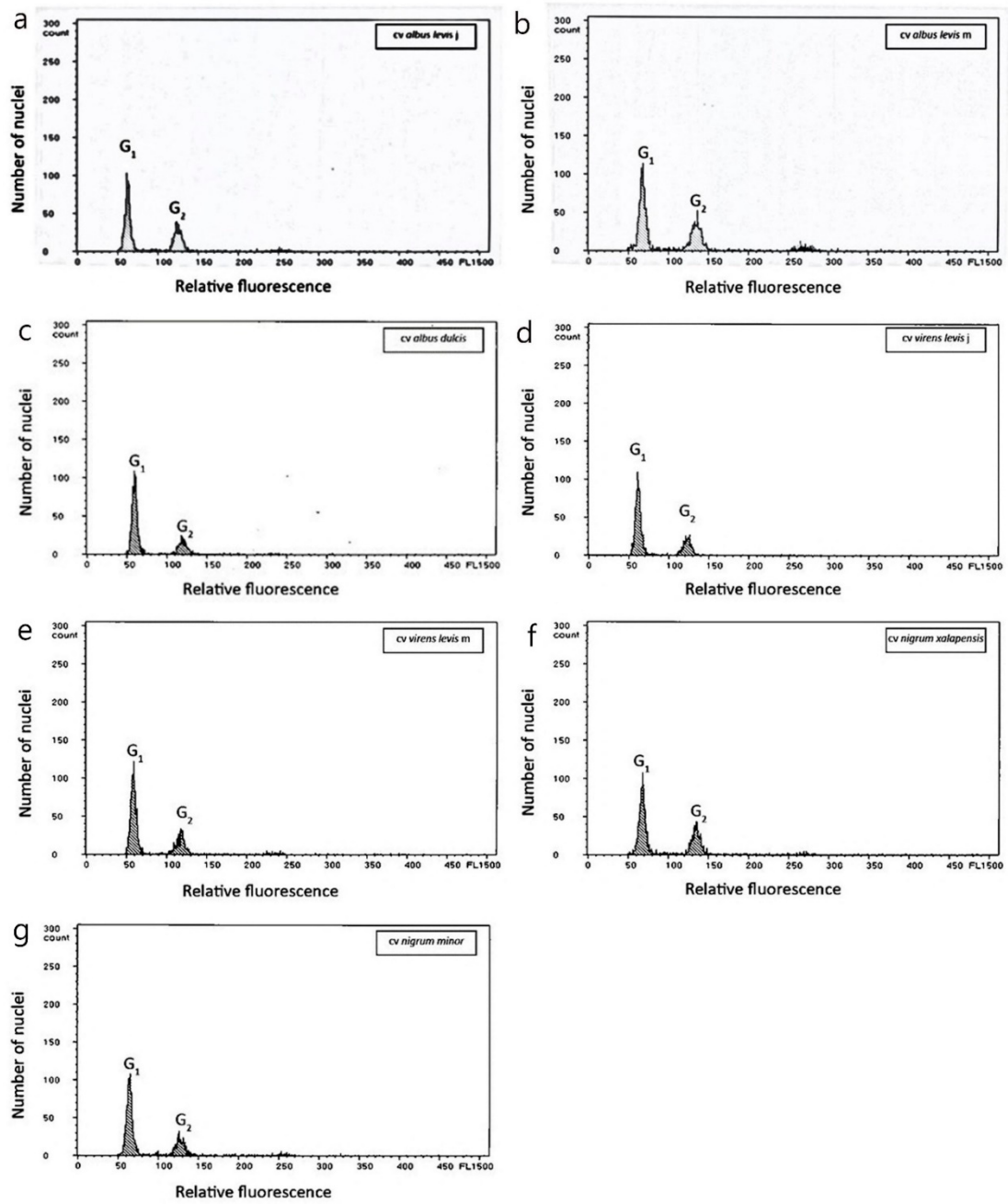


Figure S5. Relative fluorescence intensity histogram in Japanese (j) and Mexican (m) *Sechium edule* varietal group accessions. (a) KW019, *albus levis j* (b) KW017, *albus levis m* (c) KW018, *albus dulcis m* (d) KW020, *virens levis j* (e) KW014, *virens levis m* (f) KW015, *nigrum xalapensis m* (g) KW016, *nigrum minor m*

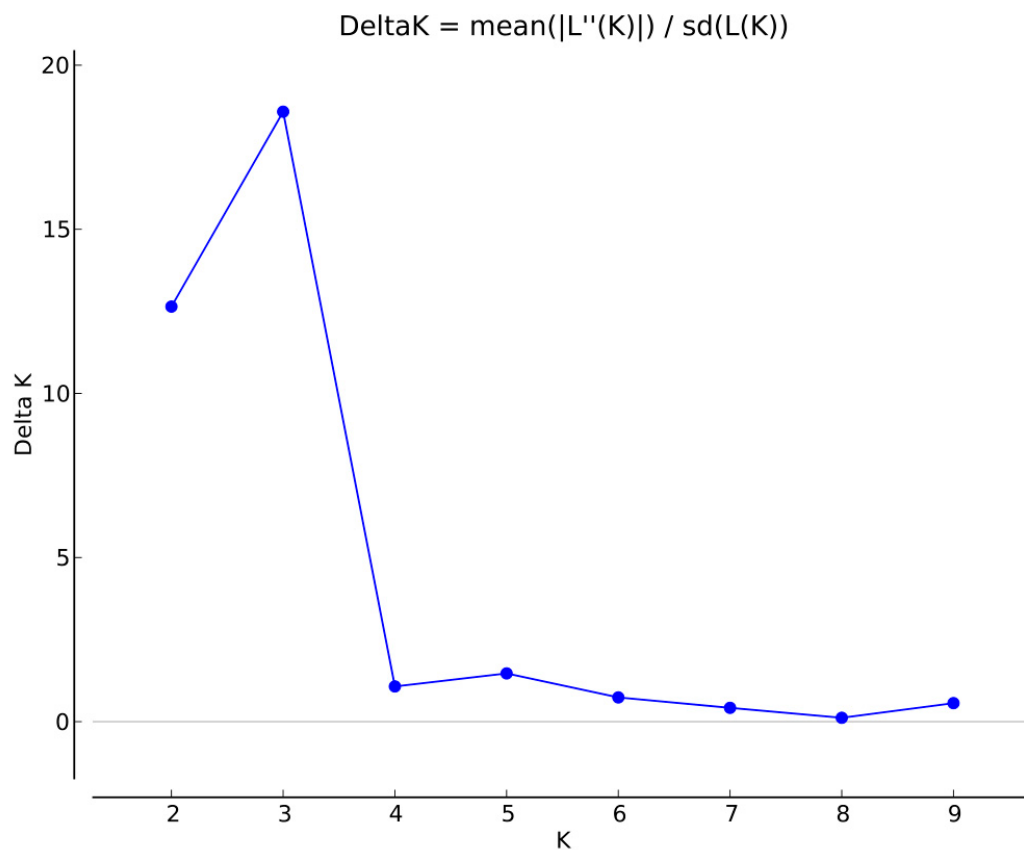


Figure S6. Delta K calculated by Structure Harvester using Evanno's method, showing peak value at K = 3.

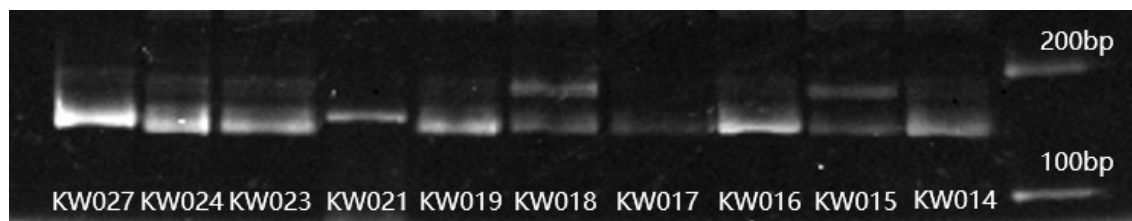


Figure S7. An example of PAGE genotyping results (Sed03 with expected size of 144bp). The rightmost lane is ladder showing 100bp and 200bp.