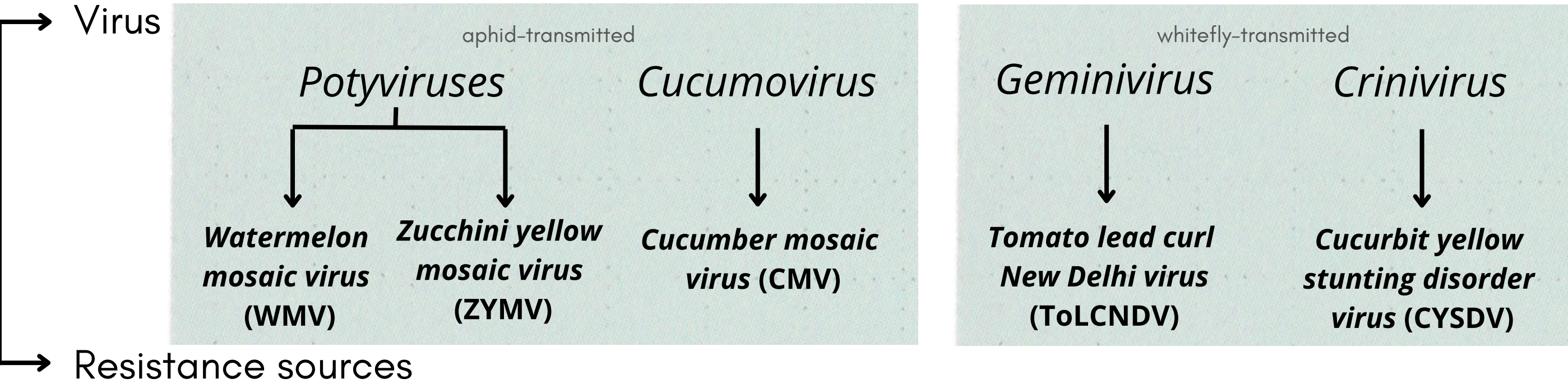


BREEDING PROGRAM FOR THE INTROGRESSION OF GENETIC RESISTANCE TO VIRAL AND FUNGAL DISEASES IN MELON LANDRACES

Clara Pérez-Moro^a, Andrea Berruga^a, Gorka Perpiñá^a, Lorena Bellver^a, Carlos Alandes^a, Jaime Cebolla-Cornejo^a, Raúl Martí^a, María López-Martín^a, Narinder P.S. Dhillon^b, María-Luisa Gómez-Guillamón^c, Belén Picó^a and Ana María Pérez de-Castro^a

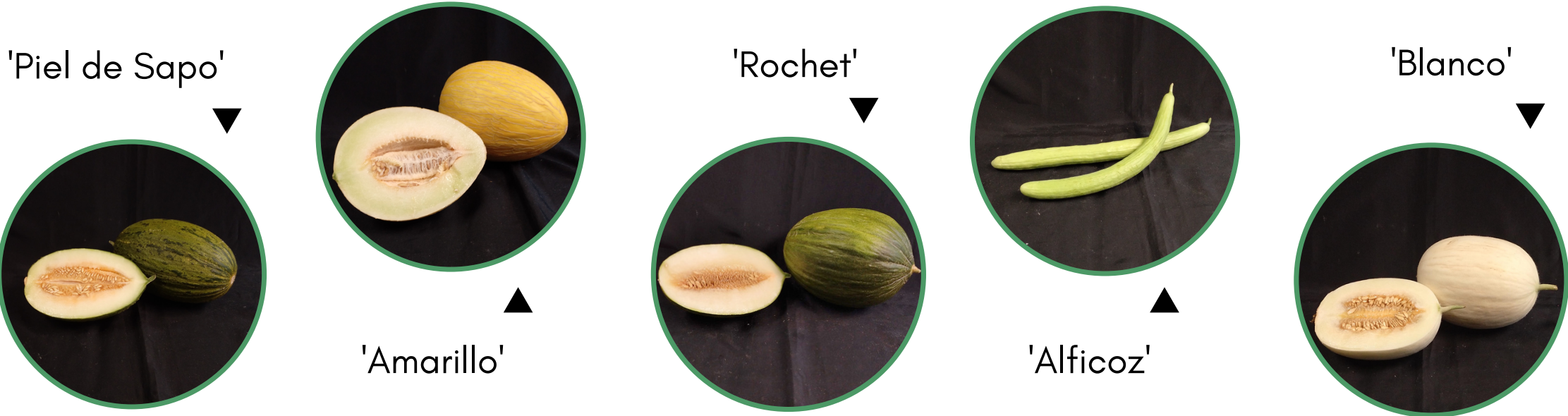
^a Instituto de Conservación y Mejora de la Agrodiversidad Valenciana, Universitat Politècnica de València (COMAV-UPV)
^b World Vegetable Center
^c Instituto de Hortifruticultura Subtropical y Mediterránea “La Mayora” (IHSM La Mayora)

INTRODUCTION



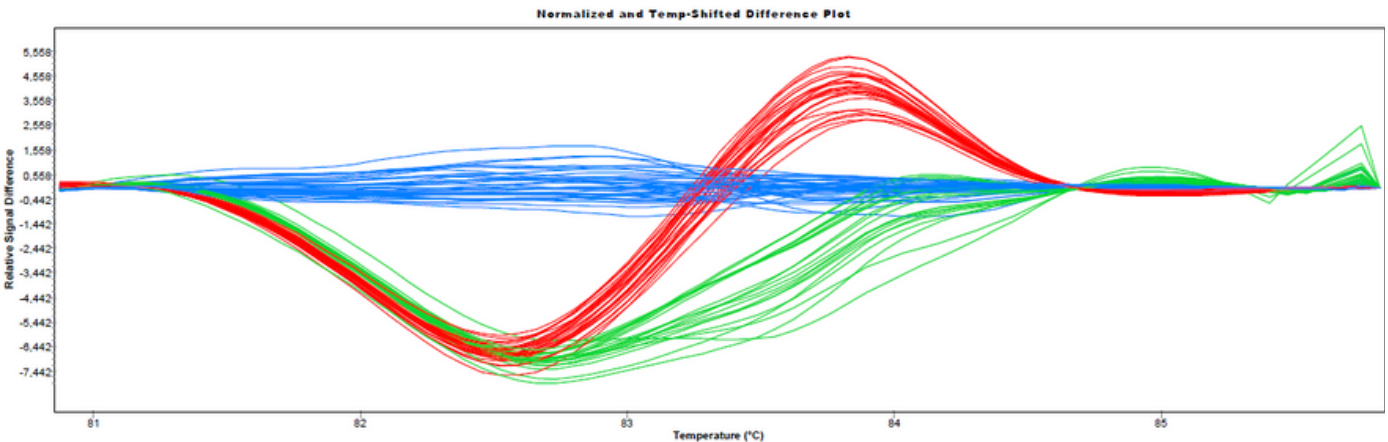
OBJECTIVE

The introgression of resistance into the main melon types cultivated in Spain.



MATERIAL AND METHODS

Marker assisted selection (MAS) is used to develop advanced breeding lines, which incorporate the resistance and carry the landrace genetic background.



High Resolution Melt curves of one of the markers used

Literature cited

- Adler-Berke, Nastacia, et al. "The melon Zym locus conferring resistance to ZYMV: high resolution mapping and candidate gene identification." *Agronomy* 11.12 (2021): 2427.
- Anagnostou, Konstantinos, Molly Jahn, and Rafael Perl-Treves. "Inheritance and linkage analysis of resistance to zucchini yellow mosaic virus, watermelon mosaic virus, papaya ringspot virus and powdery mildew in melon." *Euphytica* 116 (2000): 265-270.
- Giner, Ana, et al. "A mutation in the melon Vacuolar Protein Sorting 41 prevents systemic infection of Cucumber mosaic virus." *Scientific reports* 7.1 (2017): 10471.
- Pérez-de-Castro, Ana, et al. "Fine mapping of wmv 1551, a resistance gene to Watermelon mosaic virus in melon." *Molecular Breeding* 39 (2019): 1-15.
- Pérez-de-Castro, Ana, et al. "Melon genome regions associated with TGR-1551-derived resistance to Cucurbit yellow stunting disorder virus." *International Journal of Molecular Sciences* 21.17 (2020): 5970.
- López-Martín, María, et al. "Advanced Genetic Studies on Powdery Mildew Resistance in TGR-1551." *International Journal of Molecular Sciences* 23.20 (2022): 12553.
- Sáez, Cristina, et al. "Resistance to tomato leaf curl New Delhi virus in melon is controlled by a major QTL located in chromosome 11." *Plant Cell Reports* 36 (2017): 1571-1584.

This work was supported by grant PROMETEO 2021/072, financed by the Generalitat Valenciana and by grants PID2020-116055RB, C21 and C22, funded by MCIN/AEI/10.13039/501100011033. C.P. is recipient of a predoctoral grant (PAID-01-19) from Universitat Politècnica de València. A.B. acknowledges the grant within the framework of the “Programa Investigo” (Generalitat Valenciana, Plan de Recuperación, Transformación y Resiliencia – financed by the European Union – NextGenerationEU). R.M. is recipient of a postdoctoral grant (PAID-10-20) from Universitat Politècnica de València. M.L. is a recipient of a predoctoral fellowship (PRE2018-083466) of the Spanish Ministerio de Ciencia, Innovación y Universidades co-financed with FSE funds.



UNIVERSITAT POLITÈCNICA DE VALÈNCIA