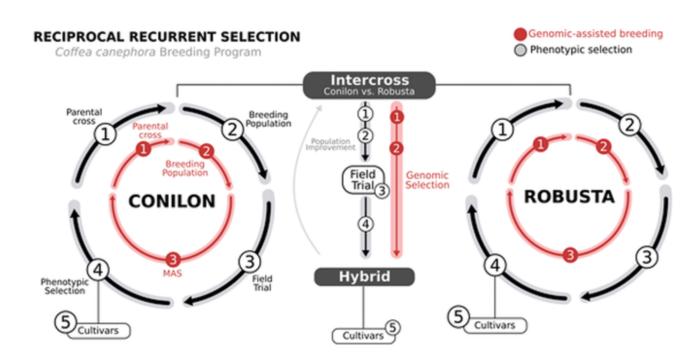# Developing Climate-Smart Coffee Cultivars

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Genomic-assisted breeding can be incorporated into a traditional reciprocal recurrent selection design to accelerate the development of climate-smart coffee cultivars. Image by Felipe Ferrão.

With more than 2.2 billion cups consumed daily, coffee is a global social and cultural phenomenon. Some 100 million workers cultivate, harvest, process, roast, and brew all that java. But this coffee chain faces a critical challenge: Given projected climate changes, coffee production may fall as much as 80% by 2050, according to estimates.

The future of coffee production depends on accelerating the development of better varieties. In work recently published in *The Plant Genome*, researchers from the University of Florida and Instituto Capixaba de Pesquisa in Brazil drew attention to *Coffea canephora* (also called Robusta coffee) because it has a great yield, is more resilient to diseases, and presents a large phenotypic diversity.

By integrating genomics and classical quantitative genetics analyses, the team emphasized the importance of using genomic‐assisted breeding to maximize the genetic gains and demonstrated that a better understanding of the genetic architecture of complex traits can guide future breeding decisions.

Altogether, the team demonstrated that genomic‐assisted breeding applied to *Coffea canephora* is a promising strategy for developing climate‐smart coffee cultivars.

Adapted from Ferrão, M.A.G., da Fonseca, A.F.A., Volpi, P.S., de Souza, L.C., Comério, M., Filho, A.C.V., … & Ferrão, L.F.V. (2023). Genomic‐assisted breeding for climate‐smart coffee. *The Plant Genome*, e20321. https://doi.org/10.1002/tpg2.20321

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