

EXPLAINED

Coffee varieties poster

Understanding and visualizing coffee's variety

About the poster

This poster celebrates key coffee varieties from 22 countries around the world. It visually represents the lineage and relatedness of different coffee varieties included in the World Coffee Research Coffee Varieties Catalog, which profiles over 100 coffee varieties from the two species of coffee plants that are in wide cultivation globally—*Coffea arabica* (*C. arabica*, known as arabica), and *Coffea canephora* (*C. canephora*, known as robusta). The poster, like the catalog, is meant to be a practical tool and guide for coffee producers, but does not aim to represent an exhaustive list of all coffee varieties in existence.

The visualization was developed by UK design agency webDNA to accompany the re-design and re-launch of the World Coffee Research Coffee Varieties Catalog in 2023, and an interactive version is displayed on the catalog's homepage.

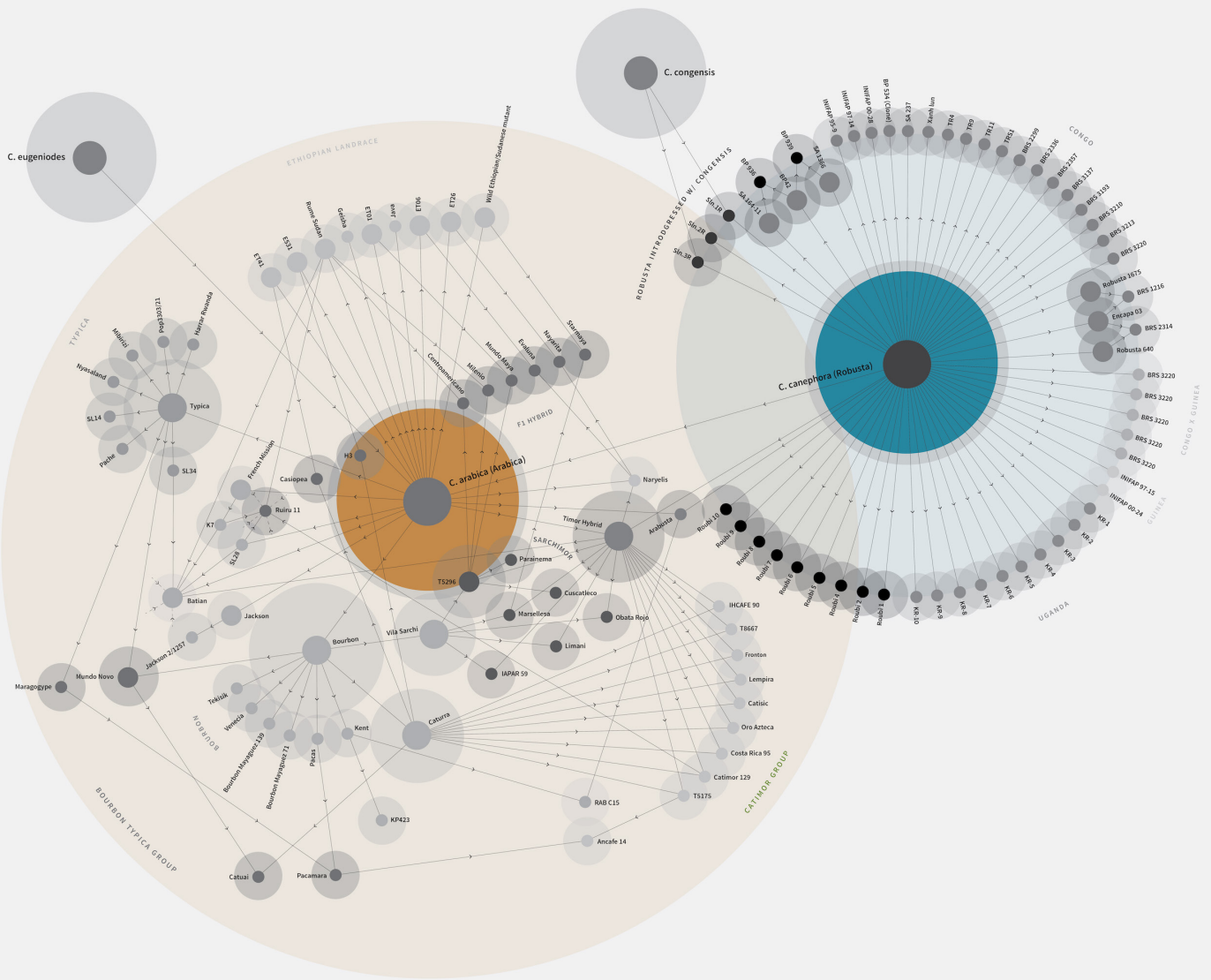
WCR is resolute in its commitment to making research and its resulting knowledge products openly accessible to all stakeholders across the coffee value chain. With this, the organization invites coffee producers, researchers, institutes, roasters, retailers, cuppers, and others to join in the celebration of coffee's variety by printing the poster locally, displaying it in their respective offices and shops, and sharing it widely across their own networks.

The poster is free for anyone to download and print under a Creative Commons Attribution-NonCommercial-NoDerivatives (CC BY-NC-ND 4.0) International Public License. It is accessible via worldcoffeeresearch.org or by scanning the QR code below.

This document explains how to read the poster and its various elements, including displayed species groups, genetic relatedness within species, and lineage and parentage of varieties.

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Species groups



C. Arabica
(Arabica)

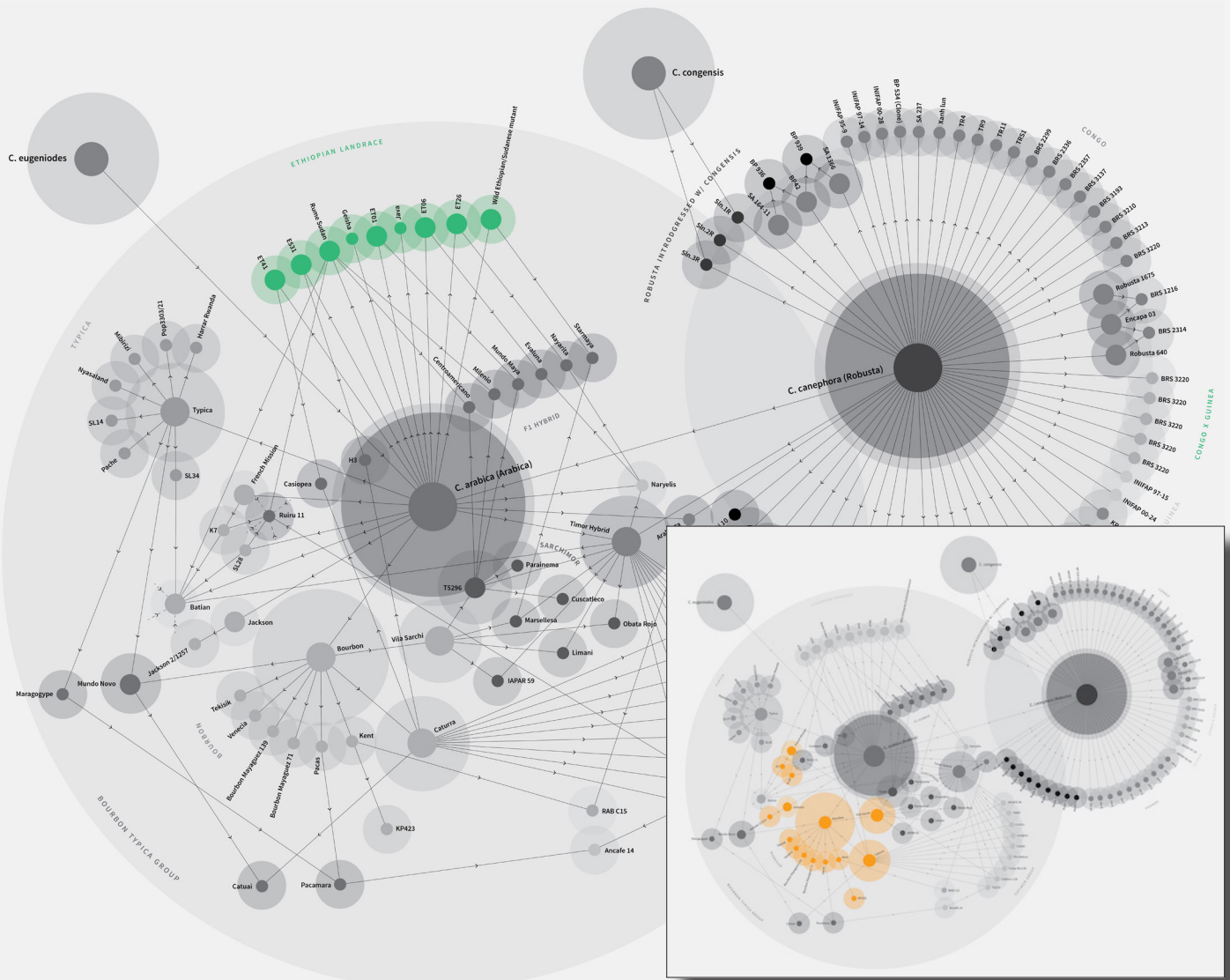


C. Canephora
(Robusta)

The main commercial species groups—*Coffea arabica* (*C. Arabica*) or arabica (tan) and *Coffea canephora* (*C. canephora*), or robusta (blue)—are represented by the largest circles. The varieties within each group appear within the large circles. The relatively more complex structure seen inside the arabica circle represents the greater knowledge the scientists possess about the relationships between arabica varieties and the greater amount of cross-breeding that has happened over the last 100 years. The graphic seems to suggest that arabica is more genetically diverse than robusta; however, the opposite is true. But the greater simplicity of the robusta circle reflects the fact that robusta is a relatively more recent commercial crop with less formal breeding and deliberate crossing.

Other species. Also identified on the poster are *C. eugenioides* and *C. congensis*, both at the top of the images, which are parent species to some of the varieties on the poster.

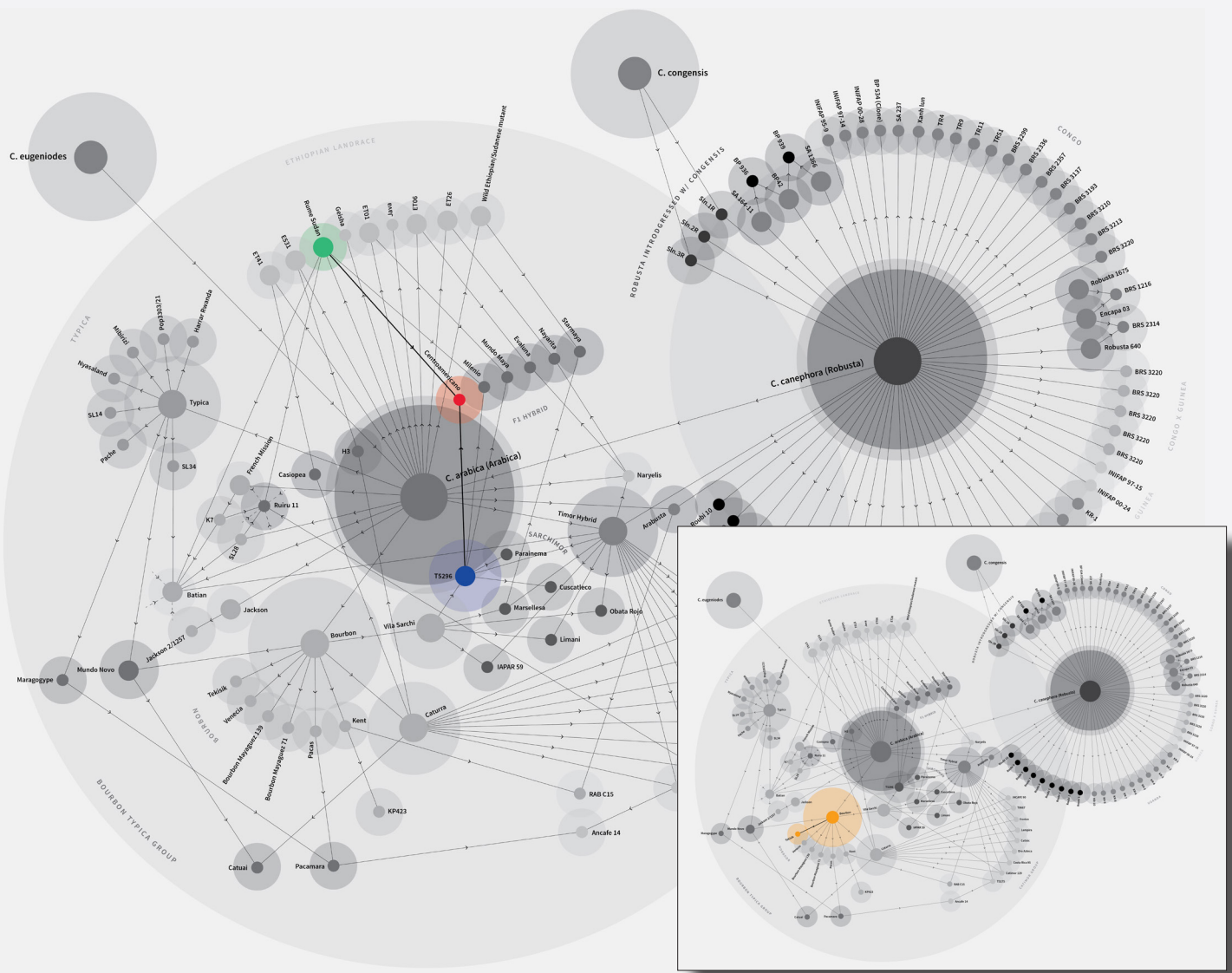
Exceptions. A group of robusta varieties called Robusta 1-10 appears inside the larger arabica circle (at roughly 7:00 on the blue “clock”). *These varieties are not related to arabica*, although their placement suggests they are; the placement was made out of design considerations to keep the contents of the network closer together.



Genetic relatedness within species

Ethiopian landrace
 Bourbon group

Varieties that are in the same genetic group within a species are displayed in different colors. Above, the “Ethiopia landrace” group, which contains some well known varieties like Geisha and Rume Sudan, is displayed in green. These varieties can be considered as close cousins within their larger species group. In the selection to the bottom right, the “Bourbon group” appears in orange, surrounding the variety Bourbon. The many varieties that appear here indicate the large influence that this group has had on commercial production—there are many commercial varieties that are either selections of Bourbon or are derived from crosses that involve Bourbon as a parent. The overall larger size of the “Bourbon” circle in the middle indicates the importance of this group.



Lineage & parentage

The lines that connect varieties contain small arrows that show the “direction” of relatedness. In the example above, the variety Centroamericano (red) is connected by lines to two other varieties—Rume Sudan (green) and T5269 (blue). The arrows on both connecting lines point toward Centroamericano, indicating that both T5269 and Rume Sudan are Centroamericano’s parents. Indeed, Centroamericano is an F1 hybrid type variety, created via a cross between T5269 (a rust-resistant Sarchimor-type) and Rume Sudan (a landrace).



In some cases, as in the example below, a variety may only have a single line connecting it to another variety. Tekisic (the small orange circle) is connected via a single line to the larger Bourbon, with the arrow pointing from Bourbon to Tekisic. This suggests that Tekisic is a selection of Bourbon. Breeders or farmers will often select individual plants of a given variety that express key traits particularly well (e.g., flavor, growth habit, or adaptability). Over successive generations of selection, these subtypes will become distinct from the parent and fixed in their unique traits (in effect, a selection like Tekisic does not have a mix of genetics from two parents, like Centroamericano above).