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BREEDCAFS (Breeding Coffee for Agroforestry Systems) project in Vietnam

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Objective
The BREEDCAFS project plans to test F1 hybrids of *Coffea arabica* - high yielding, stress resistant and adapted to agroforestry - in coffee producing countries, such as Vietnam.
Materials
Several F1 hybrids (provided as *in vitro* plantlets, Fig.A) were sent from Agristart (USA) to Hanoi where they were acclimatized (Fig.B). Then, these plants were sent to NOMAFSI greenhouses (Mai Son, Son La province) where they were transferred in plastic bags to speed-up their development (Fig.C).
Methods
In order to study the responses of these F1 hybrids to abiotic stresses, a field experiment was set-up in the NOMAFSI station by planting these hybrids, as well as local varieties (i.e. catimor), under shade and full-sun conditions (Fig.D). In 2019, controlled irrigation and water withdrawal system (mimicking drought periods) will be implemented, therefore permitting to monitor regularly physiological traits (water status, photosynthetic efficiency, stomatal conductance, etc.) and molecular (transcriptomic) of hybrids and control plants. In order to test the responses of F1 hybrids to environmental conditions and farmers' management, twelve smallholder farms were also selected in the NW provinces of Son La and Dien Bien Phu to set-up the farmers' field trials under different altitudes (ranging from 600 to 1100m) and agroforestry systems (Figs.E-F). These trials were planted in June 2018 and should produce their first and significant production in 2021.

http://www.breedcafs.eu

Keywords: Coffea arabica, F1 hybrid, agroforestry, Vietnam.