Science Societies

What's Prime Time for Mechanized Coffee Harvesting?

January 11, 2023



Dr. João de Deus Godinho Júnior of São Paulo State University uses a portable digital dynamometer to measure the detachment force of coffee fruit on a Brazilian coffee plantation. Photo by Rouverson Pereira da Silva.

Selective mechanized coffee harvesting can help producers add greater quality and value to their production. However, its success is linked to the strength needed to detach the fruit from the tree.

Researchers from Brazil recently evaluated the detachment force of coffee fruits according to the period of the day. They also examined the relation between the maturation stage and exposure to sunlight. The team found that the force required to remove fruits from the tree was influenced by maturation stage, the period of the day, and the plants' face of sun exposure. Sun exposure reduces the force needed to remove fruits, and cherries and green fruits have greater detachment strength in the early morning.

In addition, selective mechanized harvesting of coffee works best when there is the largest possible difference between the strengths needed to detach cherries and green fruits; this allows ripe fruits to be picked while leaving the green to be harvested later. The researchers observed the smallest differences between the two detachment strengths in the morning and the largest at night, demon- strating that nighttime is most appropriate for selective mechanized coffee harvesting.

Adapted from Godinho, J.D., Costa Souza, J.B., Silva, R.P., Tavares, T.O., da Costa, W.C.A., de Oliveira, B.R., & Luns Hatum de Almeida, S. (2022). The best moment to carry out the selective har-
vest of coffee fruits. Agronomy Journal. https://doi.org/10.1002/agj2.21175

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