

Palm Fruit Extraction as an Alternative Oil Source for Biofuel in Southwestern Amazônia

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In the midst of a worldwide explosion of interest in biofuels, concern has arisen over displaced food crops as well as forest conversion and the overall trade-offs of biofuel production. Nonetheless, biofuels represent a promising resource for local fuel supplies in isolated rural areas of Brazilian Amazonia, where communities depend on fossil fuels for transportation and electricity generation. A switch to biofuels would not only create a cleaner environment, but also minimize fuel costs as landholders convert oil extracted from surrounding forest to biodiesel. Palms from the genera *Attalea* occur throughout Amazonia and produce copious amounts of oil-rich fruits. To assess *Attalea*'s potential as an oil source for biodiesel, we monitored flowering and fruiting phenologies of *Attalea phalerata* Mart. ex Spreng. and *Attalea speciosa* Mart. ex Spreng. in pastures and old-growth forests of Acre and Rondônia, Brazil, over 18 months. We also collected infructescences from both species to measure fruit production and analyze oil content. In vast areas of Rondônia, *Attalea speciosa* dominates the forest and is considered an invasive species on cleared lands. Likewise, *Attalea phalerata* is common to forests and pastures within its natural range in Acre. *A. speciosa* exhibits stronger potential for oil production due to high average fruit production (120 kg tree⁻¹), high mean densities (30 ha⁻¹), and an estimated annual oil yield of 140 kg ha⁻¹. On the other hand, *A. phalerata* annually produces an estimated 45 kg ha⁻¹ due to lower average annual fruit production (60 kg tree⁻¹) and lower adult densities (10 ha⁻¹).

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