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Javan gibbons (*Hylobates moloch*) regulate the timing of visits to preferred plant species in response to predictability of fruiting patterns

Most primates inhabit rainforests where plant species diversity is very high, and most species occur at low densities. In these environments, fruiting schedules vary substantially among plant species. One way of increasing foraging success in such circumstances is to develop cognitive abilities that permit the use of spatial and temporal knowledge about important food plant species. To explore the use of phenological knowledge in the foraging strategies of wild primates, we collected data on 3 habituated groups of Javan gibbons (*Hylobates moloch*) in the Gunung Halimun-Salak National Park, Indonesia, from February 2013 to January 2014. We tested whether gibbons' patterns of visitation to preferred plant species were closely correlated with the phenological characteristics of that species. We regularly monitored the fruiting states of target plants (n=282) from 12 species known to be highly preferred by gibbons, and described predictability of fruiting pattern by considering the timing of fruiting season and fruiting synchrony. There was a significant correlation between gibbons' visitation rate and fruit production rate for species which have a more pronounced fruiting season throughout the year, but not in species within which individuals vary in their fruit production rates. We also found that after the first fruit discovery, gibbons increased their visitation rate to the other trees of the same species, however, this occurred regardless of synchrony level. In conclusion, Javan gibbons at our study site visit to food trees with the species-specific knowledge of the timing of fruiting season, more so than they use fruiting synchrony.

Keywords: Javan gibbons, foraging strategy, phenological knowledge