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CHUTI-ON KANWATANAKID: CHARACTERISTICS OF FRUITS CONSUMED BY THE WHITE HANDED GIBBON (*HYLOBATES LAR*) IN KHAO YAI NATIONAL PARK, THAILAND. THESIS ADVISERS: WARREN Y. BROCKELMAN Ph..D., SOMPOAD SRIKOSAMATARA Ph. D., PAUL J. GROTE Ph.D., 136p. ISBN 974-664-714-8.

Gibbons act as generalized frugivores in tropical rain forests. They play an important role in the forest ecosystem as seed dispersers. Fruit characteristics also have an important role in explaining the relationship between plants and gibbon coevolution. Feeding behavior of white-handed gibbons (*Hylobates lar*) was studied in Khao Yai National Park, Thailand. The main purpose of this research was to identify the diverse foods in the gibbons' diet and determine the fruit characteristics that influence the white-handed gibbon's choice.

The methods of study included direct observation of gibbon behavior and morphology of fruits, leaves and other plant parts. Fecal samples were also collected. Collected fruit was analyzed for nutritional value in the laboratory at the Institute for Nutrition, Mahidol University. The method of handling of fruit by gibbons was also observed in the zoo.

There were 30 families and 65 plant species collected and identified in the diet of one gibbon family. Most food diet came from trees (72%), but also from climbers (26.6%) and treelets (2.1%). The gibbons fed on 50 species of fruit with *Ficus* as the most consumed fruit. Young leaves, flowers, spadix and spathe were also observed to be consumed. Gibbons mostly consumed ripe fruit with bright colors (yellow, red, orange and purple), which was soft and juicy. Small size (less than 10 mm) and light weight (less than 10 g) and, fruits with a single well-protected seed were found more than other fruit types to be consumed by the gibbon. The nutritional value of 6 consumed types of fruits and leaves did not differ much. These observations were supported by an experiment in the zoo which revealed that gibbons chose the suitable size and weight that fit in their hands. These results indicated that the food characteristic is one of the main factors as well as other factors such as food availability and abundance determining the gibbon's choice. However, there are many factors that influence food selection of gibbons which can explain their behavior and the territorial defense hypothesis. Study of fruit characteristics should be carried out in relation to other factors which might be important in food selection. This will explain food selection of white-handed gibbons which is important for gibbon conservation in the future.