

# Wild animals using medicinal plants for healing: Can that be serendipity?

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In a recent study published in *Scientific Reports*, the researchers documented the first wild animal seen using a plant with known medicinal properties to heal a wound [1].

The animal was a male Sumatran orangutan (*Pongo abelii*) in the Gunung Leuser National Park in South Aceh, Indonesia. As he could eat all the flowers off a gardenia bush in one sitting, he was named Rakus, or 'greedy' in Indonesian.

On June 22, 2022, the research team noticed a fresh wound on the right flange of Rakus and inside his mouth. Although they are unsure why he got such wounds, they could be the results of fights with other males because vocal evidence of a fight between orangutan males was reported earlier on the same day [2].



**Left picture:** *Fibraurea tinctoria* leaves are around 15 and 17 cm long. **Right picture:** Rakus eating *Fibraurea tinctoria* leaves (taken on June 26, 2022) [2]

Three days later, Rakus began to eat the stem and the leaves of the liana of *Fibraurea tinctoria*, also known as 'Akar Kuning'. Despite being a part of the orangutans' diet in this area, the liana is rarely eaten. After 30 minutes of eating the leaves, Rakus started to chew the leaves without swallowing them and used his fingers to smear the juice from his mouth onto the wound on his face. The behavior was repeated several times. Rakus continued to feed on the plant the next day. After eight days, his wound became fully closed [2].

*Fibraurea tinctoria*, also known as Akar Kuning (Central Kalimantan), Akar Palo (Aceh), and Yellow Root (East Kalimantan), is an evergreen with a broad distribution in tropical forests of Southeast Asia. The plant is known for its analgesic, antipyretic, and diuretic effects and is used in traditional medicine to treat various diseases, like dysentery, diabetes, and malaria [3]. Every part of the plant, including leaves, stems, roots, and bark, has been documented as being used for these medicinal purposes. Earlier studies of the plant's chemical makeup have identified furanoditerpenoids and protoberberine alkaloids, compounds noted for their antibacterial, anti-inflammatory, anti-fungal, and antioxidant effects, all beneficial for wound healing [4].

While it is unclear how Rakus learned this kind of behavior, it is possibly an innovative behavior of the Sumatran orangutan, which can lead us to think of the serendipity in humans: an ability to notice, evaluate and take advantage of unexpected information to generate innovation for survival purposes. Thanks to this ability, humans were able to discover *Penicillium notatum* for penicillin production or *Plantago asiatica* for medicinal purposes [5].

Given that orangutans are relatively close relative to humans, would they also have the serendipity capacity like humans? Suppose the use of plants with medicinal properties for healing is shared among a group of orangutans. Can it become a kind of collective knowledge that can be passed down through generations? [6]

These questions are indeed intriguing and worthy of further exploration!

## References

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