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“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## Potential use of sago (*Metroxylon sagu*) for feed and agro-industry

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### Abstract

Innovation in our way of thinking can create new models that adapt to current conditions and use consciously local resources to their full capacity.

Therefore, making the most of a resource like sago (*Metroxylon sagu*) can be a solution to many problems faced in modern agriculture. Its importance lies not only in its wide distribution throughout Southeast Asia, and thus its proximity to the lifestyle of consumers but also in its multifunctionality. Among its most important uses are as livestock feed, as a natural fertiliser, and for bioethanol. Unfortunately, the sago habitat has been decreasing over time due to the land use change into estate crops that can bring more income. This study aims to review the potential use of sago to support the sustainability of food systems and forest ecosystem services.

Besides its uses in the food sector, sago *hampas* (the fibrous residue of the starch production) can act as livestock feed, due to the fact that it entails a high fiber content of 65.7 % starch, 21 % lignin and 20 % cellulose. It can be further used as an absorbent for heavy metals like chromium and mercury and waste spillage in the sea, as well as in the bioethanol production, with the benefit that the higher octane facilitates a smoother glide in combustion engines. Furthermore, the wastes of the sago consuming animals, mixed with the leftover remains of the palm can be used as fertiliser. These are mixed with poultry waste to introduce something called “*co-composting*”. The sago starch can be further fermented using *Lactococcus lactis* to create L-lactic acid, which can be used to create biodegradable thermoplastics and skin care, toiletries, and hair care products.

In conclusion, sago is not only a product that grows in abundance and adapts easily to swampy ecosystems, which could help to conserve the biodiversity of the area, but it also has countless uses as a biodegradable material in agro-industry, pharmaceuticals and the automotive industry.

**Keywords:** Agro-industry, *Metroxylon sagu*, southeast asia, sustainability