



How to Plant Sago

Sago plants thrive best in swamps, peat lands, or near river banks. The quality of sago can be enhanced in areas where sago is regularly flooded, affected by tides, or have a well-planned drainage system. When fresh water enters the sago plantation, it provides the necessary nutrients for the growth of sago, such as potassium, phosphate, calcium, and magnesium.

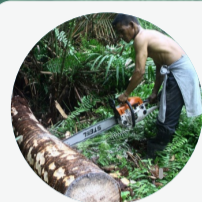
Sago plants can grow and develop to a 700 meter altitude, but the optimal height is 70%, with 30% organic matter and soil pH level of 5.5 to 6.5. However, sago plants are adaptable to higher level of acidity.

When planting sago, a rectangular cropping system is used with varying distances of 8 to 10 meters. The spacing and planting method depend on the type of sago and the size of its canopy. Sago is planted in a hole with a size of 30 x 30 x 30 cm. The seeds that are planted should be given a barrier from the gaba-gaba (leaf bones) and placed crosswise on the front of the seed stalk, after being filled with soil up to the neck of the seed.

When the tips of the stems start to swell and the flower sheaths and white leaf sheaths begin to discharge, it's time to harvest sago palms. This usually happens when the palm is around 6-7 years old and has a height of 10-15 meters, a diameter of 60-70 centimeters, an outer skin thickness of 10 centimeters, and a trunk thickness of 50-60 centimeters containing sago. The characteristics of sago palms that are ready for harvest can generally be seen from the changes that occur in the leaves, thorns, shoots, and stems.

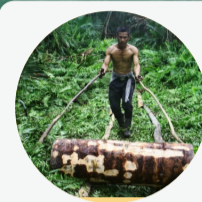
When to Harvest Sago

The Process of Sago Production



Community harvesting sago in Sungai Tohor

Image source : <https://foto.tempo.co>



Tual sago (42 inches/105 cm) that has been cut to be brought to the sago factory

Image source : <https://foto.tempo.co>



Cleaning of the tual sago skin at the factory

Image source : <https://foto.tempo.co>



Tual sago that has been cleaned is cut into smaller pieces

Image source : <https://foto.tempo.co>



Milling of sago stems at the factory

Image source : <https://foto.tempo.co>



Wet sago ready for export

Image source : GEC Documentation



Wet sago packed into gunny sacks

Image source : GEC Documentation

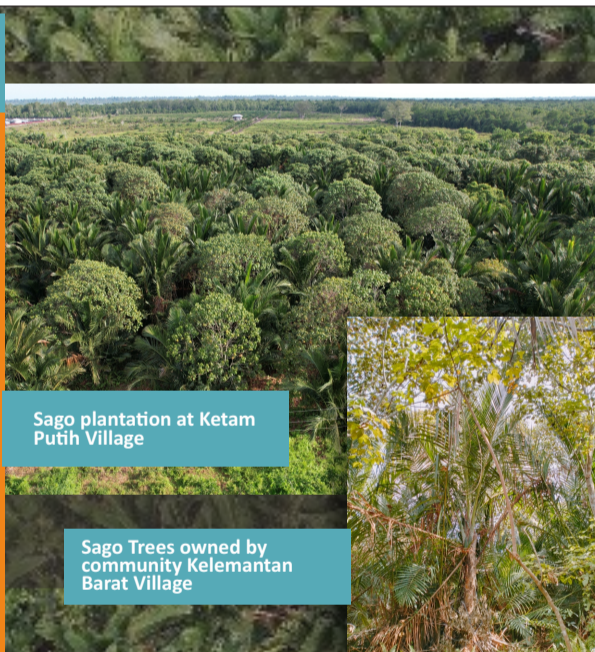


Wet sago in gunny sacks to be sent to Malaysia

Image source : GEC Documentation

Sago Cultivation in Bengkalis Regency

In 2015, the sago area in Riau Province covered 82,713 hectares (Ha). This area was made up of smallholder plantations covering 62,513 Ha (75.57%) and large private plantations covering 20,200 Ha (24.43%). Sago areas in Riau Province are distributed across five districts, including Bengkalis District which covers 2,870 Ha (Department of Plantation and Forestry of Bengkalis District, 2015). Most of the sago plantations in Bengkalis Regency are located in Bengkalis District, including in the West Kelemantan Village and Ketam Putih Village.



Sago plantation at Ketam Putih Village

Sago Trees owned by community Kelemantan Barat Village

Sago as a Potential Paludiculture Commodity

Sago plants have the ability to survive in four different types of habitats, namely: (1) dry land habitat; (2) non-permanent stagnant fresh water habitat; (3) non-permanent stagnant brackish water habitat; and (4) permanent stagnant habitat. Sago plants are able to thrive in flooded peat swamps, even in areas where flooding persists throughout the year.

Paludiculture Concept

Peat swamp ecosystems are highly susceptible to disturbance, particularly those formed from centuries of undecomposed organic matter that are often burned when the land is drained for development. To protect and make productive use of peat, the recommended approach is the Paludiculture technique.

The term Paludiculture comes from the Latin words palus (meaning swamp) and cultur (meaning cultivation). Paludiculture is an agroforestry system that adapts to the environmental conditions of peat swamps which are always wet

Benefits of Paludiculture

1. Fire prevention: we maintain a high ground water level to keep peatland wet.
2. Emission reduction: by slowing down the decomposition process and improving biomass from vegetation.
3. Subsidence reduction: by increasing ground water table it will decrease subsidence rate.
4. Improving livelihoods: by carefully selecting productive and adaptive species such as plants, fish, cattle, and bees for paludiculture activities, livelihoods can be improved.
5. Species conservation: native species and habitats are preserved.



Getting To Know Sago



Sago (*Metroxylon spp.*) belongs to the palmae family, which grows a lot in Southeast Asia. The types that grow a lot in Bengkalis Regency are thorn sago and bemban sago. Each clump of sago has between 1 to 8 stems, and 5 to 7 tillers grow at the base of each stem. Sago stems are cylindrical in shape and serve to store and stack carbohydrates. They typically grow to a height of 10-15 meters and have a diameter of 35-40 cm. The Sago plant typically starts to bloom after 8 to 15 years, depending on the soil conditions, elevation, and variety (Flach 1997).

The dominant component of sago is starch or carbohydrates. Starch comes in the form of shiny white granules that have no smell or taste. Sago starch is a natural ingredient that is extracted from sago pith or stalk. It is free of chemicals and can be safely consumed as part of a daily diet. Additionally, it has certain beneficial functions in the body's metabolism. (Papilaya 2008).

Economic Potential of Sago Cultivation

On average, 1 hectare of sago plantation produces 700 tonnes of sago starch each year. The total income in a year is IDR 24,500,000 (about USD1,600), assuming that the peatland is wet and the price per hectare is IDR 35,000 (USD2). The potential export markets for sago are Japan, North Korea, Malaysia, and Singapore. Domestically, the markets are located in Cirebon, Medan, Batam, and Pekanbaru.

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