



ANJ

PT Austindo Nusantara Jaya Tbk.




SAPADUA

**Sago as a
Functional
Staple Food**

Sago starch nutritional content

Sago contains of mostly starch, a complex carbohydrate. Modern processed sago starch contains about 85% starch.

Nutritional content per 100 gram

	Sago Starch	Tapioca Starch	Wheat Flour	Rice Flour
Calories	350 kCal	349 kCal	332 kCal	359 kCal
Fat	0.04 gram	0.6 gram	1.5 gram	0.7 gram
Protein	1.15 gram	0.6 gram	11.4 gram	7.5 gram
Carbohydrate	86.58 gram	85.0 gram	62.2 gram	78.5 gram
Dietary Fiber	2.05 gram	0.0 gram	11.0 gram	0.2 gram

*ANJ internal research

[*http://www.foodnutritiontable.com/nutrition/nutrient/](http://www.foodnutritiontable.com/nutrition/nutrient/)

Sago is naturally gluten free

Sago starch has been analyzed to be free of gluten**. Gluten is a general name for proteins found mainly in wheat, barley, and rye. It is an allergen for people with Celiac disease or gluten intolerance. Avoidance or reduction of gluten has also been suggested for people with auto-immune condition or autism spectrum.



**ANJ internal research 2017
<https://www.healthline.com/nutrition/sago>

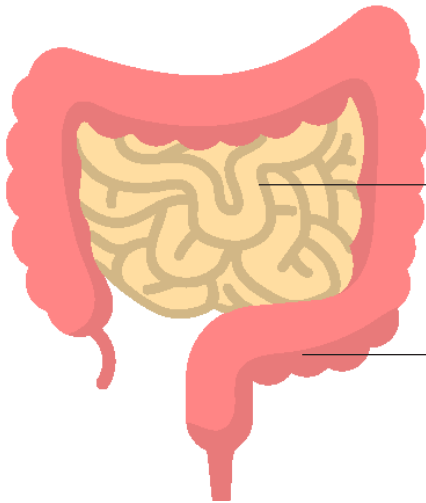
Sago as prebiotic and source of resistant starch

Prebiotics are substance in food that induce the growth or activity of beneficial gastrointestinal microorganism.

Prebiotics, like dietary fibers found in many fruits and vegetables, feed the friendly bacteria in your gut. This helps the gut bacteria produce nutrients for your colon cells and leads to **a healthier digestive system.**



Resistant starch support growth of introduced probiotic (beneficial live bacteria) in foods, such as in yogurt, tempe, miso or kimchi.



Resistant starch is starch that **escape digestion and absorption in the small intestine**, similar to dietary fiber, and go straight to the large intestine

Indigenous **colonic microorganism in large intestine ferments resistant starch** and create SCFA (short chain fatty acids).

Sago for colorectal cancer prevention

These specific **SCFA inhibit growth and cause cell death to human colorectal cancer cells.**

SCFA:

Butyric Acid
Propionic Acid
Acetic Acid

Low Glycemic Index

The Glycemic Index (GI) is a value assigned to foods based on how quickly those foods cause increases and cause fluctuations of blood sugar (glucose) levels.

Low GI foods can reduce the risk of type 2 diabetes and heart disease, reduce total and LDL cholesterol, as well as one of the keys to maintaining weight loss.

Cooking sago starch create types of resistant starch that lead to the slow release of glucose into the bloodstream, lowering the glycemic index of sago based foods.

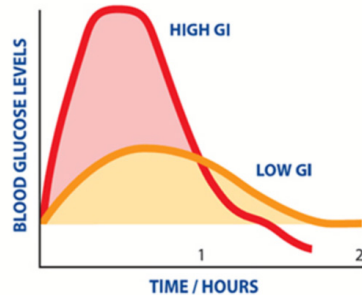
GLYCEMIC INDEX

Low ≤ 55

Medium 56-69

High ≥ 70

*glucose = 100



<https://www.health.harvard.edu/diseases-and-conditions/glycemic-index-and-glycemic-load-for-100-foods>

Food	Glycemic Index	GI Category
Native sago starch	65	Medium
Sago noodle	28	Low
White rice, medium grain, cooked	75	High
Brown rice, cooked	68	Medium
White bread (from wheat flour)	75	High

Haliza et al 2006

8. Raben et al, 1995

<http://www.glycemicindex.com/index.php>

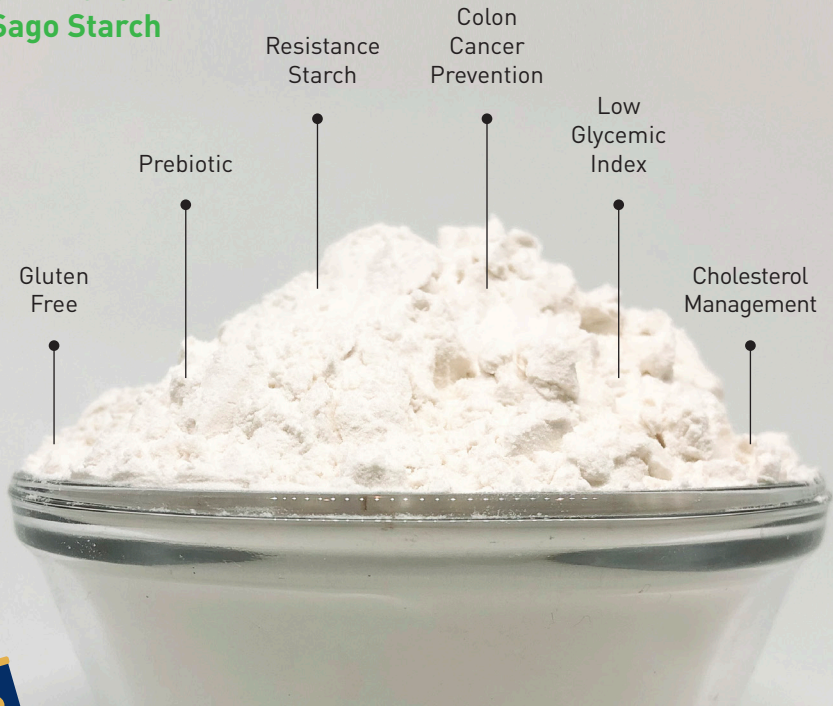
<https://www.health.harvard.edu/diseases-and-conditions/glycemic-index-and-glycemic-load-for-100-foods>

Sago for Cholesterol Management

Diabetes can lead to high cholesterol because diabetic patients can't be metabolize fat (lipid) properly. Diabetic rats fed with sago analog rice showed an increase in HDL (good cholesterol), decrease of total cholesterol, LDL (bad cholesterol), triglycerides, and Atherogenic Index.



Health Benefits of Sago Starch



Research Shows



- Pure sago starch (no chemical added) has higher resistant starch than chemically treated sago starch and tapioca starch.
- Rats fed with raw and gelatinized sago starch showed statistically significant decrease of total blood cholesterol, as compared to those fed with raw and gelatinized tapioca starch.
- These early research shows potential of sago staple products, such as sago noodles or sago rice analog, in blood cholesterol management.
- Sago noodles contain 4 x more resistant starch than wheat flour noodles.
- Cooked sago (retrograded starch), such as in sago noodle, has higher resistant starch content than raw sago starch
- Sago starch when cooked with fat source, such as coconut milk or vegetable oil, can create a specific kind of resistant starch, which has been shown to resist digestion in small intestine. Furthermore, it has been shown to reduce about 50% of blood glucose level when compared to white bread.

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SAPAPUA® is our flagship brand of sago starch, produced from sago trees found in the indigenous forest of South Sorong, West Papua by PT ANJ Agri Papua (ANJAP). The sago palms are found growing naturally in the forest without the use of pesticides, fertilizers or any other additives.

SAPAPUA® is available at:

Tokopedia <https://www.tokopedia.com/sagupapua>

Shopee <https://www.shopee.co.id/sagusapapua>

Instagram: @sapapua.sagu and @bueno.nasio

GoFood: Bueno Nasio

Bueno Nasio Restaurant (Sunken Plaza Menara BTPN, Jalan Dr. Ide Anak Agung Gde Agung, Kav. 5.5-5.6, Kawasan Mega Kuningan, South Jakarta 12950. Phone +6221 2295 8922