

# Sorghum-Based Food Product Diversification to Enlarge the Market to support the Entrepreneurship Program

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# Sorghum-Based Food Product Diversification to Enlarge the Market to support the Entrepreneurship Program

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**Abstract.** The purpose of the research was to—examine the opportunities for developing entrepreneurship from innovative and creative products to enlarge the market segment of sorghum products. The method of the research are quantitative and qualitative research with observations include exploration of materials and variations in entrepreneurial products, and after the data collected is then analyzed statistically. The results showed that all parts of sorghum plants could be used as raw material for entrepreneurial products (grains, stems, roots, leaves, rice, flour, and bran). Variations entrepreneur products produced are food products (various cakes, breads and cookies), functional drinks, and various fermented products), health products, cosmetic products, batik products, and souvenir products. The findings of the research in the era industry 4.0 that have creative and innovative ideas in developing entrepreneurship especially various sorghum-based products.

**Keywords:** Creative and Innovative, Exploration, Era industry 4.0, Sorghum-Based Entrepreneurship Products

## Introduction

The presence of the industrial revolution 4.0 indeed presents new business lines, new jobs, new professions that were previously unthinkable, which are expected to increase the competitiveness of national industries on the global scene and make it a gateway to spur job technology-based creation. The establishment of a healthy and sustainable technology-based entrepreneurial ecosystem can drive all sectors of the economy. Entrepreneurship can be an alternative solution to the problem of unemployment, the existence of entrepreneurs hoping to create new jobs in absorbing the workforce can be realized, as well as tips for entrepreneurs to have an influence on student opportunities for entrepreneurship, have high creativity and dare to innovate, and by giving a touch of creativity to the product, then the product will be of high value [1]–[3].

One of the tips for successful entrepreneurship is the selection of raw materials that have innovation value, where one of the potential ingredients is sorghum, which is one of the cereal crops that is easy to process, in the world the plant ranks fifth after wheat, rice, corn and barley. All parts of the sorghum plant are very useful, starting from grains, stems, leaves, and roots, which from seeds can develop by the process of seeding can produce rice, bran and bran, then sorghum rice can become flour, all of which can be used as raw material for entrepreneurial activities. Every 100 g of sorghum contains 73 g of carbohydrates, also contains 11 g of protein, 3.3 g of fat, 0.38 g of vitamin B1, and 28



	2. Processed by sorghum flour	Various biscuits Gluten Free	T/A						
		Pizza GF	T/A						
		Breads GF	T/A						
		various cakes and cookies	T/A						
	3. Various traditional cakes	Label GF	T/A						
		Redesign packing	T/A						
	4. Soft brand Product								
	5. Brand Product	Feed (processed)	MA						
C.	Innovative products:								
	1. Food & drink:	Various rice products	T/A	Sorghum syrup	T/A				
		Functional drinks	T/A	Functional drinks	T/MT				
	2. Non-Food	Sorghum "Vas"	T/A	Feed (processed)	T/A	Feed (processed)	T/A	Pharmaceutical product	T/MT
		Sorghum Masker peell-off	T/MT						
		Sorghum soap	T/MT						
		Sorghum Ointment	T/MT						
		Sorghum hand sanitizer spray	T/MT						
		Sorghum "batik"	T/A						
		souvenir products	T/A						

Note: MA: Market Available  
T/A: Trend products/Acceptable by consumer  
T/MT: Trend products/Should be pass market test  
GF: Gluten free  
R/BO: Rare/By order  
\*) i.e tape, brondong etc...

Source: [9][10][11][12][13][14]

The exploration of sorghum entrepreneurship products is examined based on the experience of SEU practitioners, market trends and the level of consumer acceptance. Products that are already available on the market are generally still in the form of raw materials. Only in some places are able to provide outlets for processed sorghum products, though not all year round is available. Most of the

processed products available are by-products, not mass products that are available at any time. Products circulating in the market are whole grains, sorghum rice, flour and various cakes and soy sauce prepared from sorghum grain material. While the products circulating from the stems and other parts of this plant are drinks and brooms [15].

The overall glycemic index of products sorghum is classified as moderate, if food has a glycemic index of 56-69, so that it can be said that so gluten free products sorghum can be classified as an alternative to healthy food [16].

In order to direct this exploration of products, product selection is based on products that are becoming a trend or high level of demand and can be accepted by consumers. Some might include products with high demand, but market testing must be done first. The results of the product exploration panel are divided into two parts, namely food and non-food, as well as creative products as the development of available products and innovative products that are considered new to the market and consumers in general. Creative products are more on the development of a variety of similar products through improved packaging, highlighting information labels that give a stronger impression to consumers. While innovative products are more explored in the use of plant parts other than seeds, so they are of commercial value [17]–[19].

## Conclusion

In the era of industrial revolution 4.0 must have creative and innovative ideas in developing entrepreneurship, especially various sorghum-based products, where all parts of sorghum plants can be used as raw materials for entrepreneurial products (grains, stems, roots, leaves, rice, flour, soft bran and bran). Variations in entrepreneurial products produced are food products (various cakes, breads and cakes), functional drinks, and various fermented products), health products, cosmetic products, batik products, and souvenir products.

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