



**REVIEW ARTICLE " UTILIZATION OF HYACINTHS"**

**By**

**Junianto<sup>1</sup>, Rahma Balqis<sup>2</sup> and Rida Nurhaliza<sup>2</sup>**

- 1. Lecturer Staff of the Department of Fisheries, Padjadjaran University, Bandung-Indonesia**
- 2. Students of Fisheries Undergraduate Study Program, Padjadjaran University, Bandung-Indonesia**

**Abstract**

Water goiter is a aquatic plant that is invasive, so it can damage the environment, especially the life of fish contained in watery water bodies. This article aims to get information about the use of hyacinths, methods of improving the quality of handicraft products and strategi marketing of handicraft products made from watery goiter.

Keywords : quality, marketing, crafts, woven, paper.

**INTRODUCTION**

Hyacinth or *Eichhornia crassipes* is a plant belonging to the family Pontederiaceae (Pudjowati, *et al.* 2021). Hyacinth belongs to the group of invasive environmental weeds, namely aggressive types of plants, "immigrant" plants that are able to master natural vegetation and inhibit the growth of the original type or even destroy it.

This hyacinth plant lives floating on the surface of the water or developing its distribution in the mud so that in a short time it can cover the surface of the waters and cause a decline in the surrounding aquatic ecosystem. The development and spread of hyacinths is very fast. The ideal growing place for hyacinths is the water area with temperatures ranging from 28oC – 30oC, pH between 4 – 12 and altitudes ranging from 0 – 1600 m above sea level (Sastroutomo, 1990). However, the growth speed of hyacinth depends also on its environmental factors, such as the nutrient content of the waters, the depth of water, salinity, pH and the intensity of light entering the waters. This article aims to get information about the use of hyacinths, methods of improving

the quality of handicraft products and strategi marketing of craft products made from watery goiter.

### **Classification and Taxonomy of Watery Goiter**

Hyacinth (*Eichornia crassipes*) is a type of water weed because it has a fast growth (Ratrani, *et al.* 2011). Hyacinth belongs to the Family Butomaceae and genus Eichornia. For more details, the following is a classification of Hyacinth according to Van Steenis (1987) which is as follows:

Kingdom: Plantae

Split : Magnoliophyta

Class : Liliopsida

Ordo : Alismatales

Famili : Butomaceae

Genus : Eichornia

Species : *Eichornia crassipes*

The ability to grow rapidly in hyacinths is caused because the plant is able to adjust itself to an environmental change (Ratrani, *et al.* 2011). The plant usually lives in the tropics and subtropics. Therefore, hyacinths are found in many lentic or stagnant waters such as lakes and swamps in Indonesia. According to Ratrani, *et al.* (2011) and Dewi (2012), hyacinths can live optimally in shallow and turbid waters because the plant has the ability to absorb nutrients and other organic and chemical compounds such as nitrogen and phosphorus from polluted water. Therefore, hyacinths can be optimized as the main component in cleaning industrial and household wastewater. Hyacinths live at a water temperature of 28-30 C and a pH of 4-12 and have an egg-like ovate leaf shape. The plant has fiber roots and is found stomata in its leaves (Ratrani, *et al.* 2011).

In addition to its advantages in cleaning waste, the large number of hyacinths living in a water can also be a *boomerang* in the aquatic ecosystem. According to Mirawati (2007), the disadvantage of hyacinths is that they can interfere with transportation and cause dirty waters. In addition, hyacinths can also cause silting and inhibition of water flow in a water (Ningsih, 2019). Therefore, it is necessary to carry out special handling to prevent the growth rate of hyacinths, one of which is by cleaning and removing the plant. Hyacinth plants can also be used as handicraft products such as bags and others. In addition to preventing the growth rate, the products produced also have high economic value so as to provide benefits to the surrounding community.

## Utilization of Hyacinths

A common benefit of hyacinths is handicrafts. The types of crafts that can be used in the use of hyacinths are webbing, art paper, sandals, bags, and much more.

The process of processing hyacinths into art paper starts from taking hyacinths. The stems and leaves of fresh hyacinths are separated and then chopped and dried in the sun until air is dry. Dried hyacinths are cooked into pulp in a cooking barrel with the addition of NaOH ingredients. For every 1 kg of hyacinth, 10 liters of water and 10 gr of NaOH are added in the cooking process. The cooking process takes place at boiling temperature for 3 hours and then the resulting pulp is washed with clean water to remove the remaining NaOH so that the pulp does not smell.

Meanwhile, the waste paper material is chopped and soaked in water for 24 hours for mixing material. The addition of waste paper serves to increase the strength of the art paper produced. Hyacinth pulp and waste paper are further ground (using a blender) separately. Polyvinyl acetate (PVAc) adhesive material is added as much as 5% of the paper weight at the time of grinding waste paper pulp to increase the binding power between fibers.

The two types of pulp are further mixed with a certain ratio, according to the characteristics of the art paper you want to produce. The pulp mixture is then colored to embellish the resulting paper and left for several hours so that the coloring agent is well absorbed by the pulp. The pulp mixture is then diluted with the addition of water, according to the desired paper thickness and molded into sheets of paper using a filter gauze (screener).

Sheets of paper are then pressed on a piece of cloth placed on a rigid and flat plane of the board and covered with cloth. The final stage is the drying of the paper in the sun for approximately 1 hour, depending on weather conditions. Drying can be done by laying paper on plywood sheets.



Figure 1. Art paper made from water hyacinth (Source: <https://mediaindonesia.com/nusantara/327620/masyarakat-pesisir-sungai-kalsel-olah-eceng-gondok-jadi-kertas>)

In addition to art paper, hyacinths can also be used as woven crafts. The following are the stages of processing hyacinth into webbing (Pudjowati, 2021). The first stage is the pengambilan hyacinth plant. Hyacinth gondol is then dried for 1 week to 25 days depending on the weather.

The next process is to create a pattern. After the creation of the pattern, the next stage is to weave with the pattern that has been made. Then the embroidery process is carried out using thread, ribbon and other variations that require patience and determination.

After weaving, the suturing is done according to the desired pattern earlier, not forgetting also the manufacture of other accessories. Finally, enter the finishing process which is carried out to beautify the water hyacinth crafts that have been made so that they are in accordance with the wishes of consumers in the market.



Figure 2. Water hyacinth woven crafts for Bags (Source: <https://moselo.com/blog/tas-dari-eceng-gondok/>)

After all the crafts have been made, the next process that must be done is marketing. The product can be marketed in an exhibition or offline store. However, with the development of the times, the marketing process commonly used by people today is to use social media or online stores.

### **Product Quality and Process**

Products from hyacinths do not have SNI quality because the manufacture of products is still carried out within the scope of Usaha Mikro Kecil Menengah so it has not been produced on a large scale. However, products made by Usaha Mikro Kecil Menengah can still improve the quality of its products in several ways. Based on Tjiptono and Chandra (2011), here are the stages that can improve the quality of a product, including:

a. **Quality Function Development**

There are so many assumptions that it requires a method to interpret them. Quality function deployment or commonly called (QFD) is a method to develop quality design that aims to satisfy consumers and then translate consumer demand into design targets and the main points of Quality assurance to be used in all stages of production (Kowalska, et al., 2015). To find out what things are needed and desired by customers, the company carries out activities to list what things customers want or commonly referred to as voice of customers (VOC) using tools or quality improvement approaches. One of them is using Quality

Function Deployment (QFD) to find out what customers want for their products. This research uses the method (QFD) up to the Design Deployment phase. QFD according to Ficalora and Cohen (2010) is a method for structured products or service and development planning that allows a development team to clearly determine what a customer wants and needs, and then assess or evaluate each proposed product or systematic service capability in terms of its impact as it meets the needs of that customer. QFD phase 1 or commonly referred to as The Quality house or HoQ (House of Quality).

b. House of Quality

House of Quality (HOQ) is a tool used to find out what things are needed and want about products from the company so that attributes are obtained for | RIGHT Journal of Applied Technology for Community Service | Volume 3, Number 2, Year 2020 52 improves product quality. This activity will be socialized to business owners and their workers. The stage of preparing the house of quality is divided into 6 steps according to Cohen (1995), as follows:

- a) a matrix of customer needs, including: deciding who the customer is, collecting qualitative data in the form of consumer wants and needs, compiling the wants and needs that have been collected, and making affinity diagrams,
- b) planning matrix, including: the size of customer needs, and the setting of satisfaction performance goals,
- c) technical response, including: transformation from non-technical consumer needs to data of a technical nature,
- d) determine the relationship of technical response with consumer needs, including: determination of how strong the technical response is, the relationship of moderate technical response, and the weak relationship of technical response with customer needs,
- e) technical correlations, including: mapping the relationship and importance between the characteristics of the Quality of the substitute or technical response, so as to see the influence of the technical response to other technical responses, and
- f) benchmarking and setting targets, including: determining the technical response you want to choose and compare with competitors' products.

## **Marketing of handicraft products made from water hyacinth in Indonesia**

Marketing strategy is one of the urgency in managing a business, as well as the hyacinth business. Meanwhile, another definition of marketing is a social and managerial process in which individuals and groups get what they need and want by creating, offering, and exchanging valuable products to other parties (Kotler in Hartono et al., 2014). All products require an efficient marketing strategy in order to develop the business being run. In order for the target market to be achieved and can compete with other products or stores, the marketing strategy carried out must be more innovative, creative, and keep up with the times. The concept of marketing strategy is a concept that shifts the marketing center from customers or goods to consumers in a more widespread external environment situation (Jayanti. 2021). The situation involves competition, policy, macro-power, economic, socio-cultural, as well as technological.

The marketing strategy through marketing mix in the sale of handicraft products is as follows:

First, the Product. Products produced from this craft such as tissue holders, laundry boxes, bags, hats, sandals etc. This product has a distinctive feature that is different from other handicrafts because this craft uses the basic material of hyacinth. Hyacinth, which is suspected to be useless and annoying, turns out to be used as a basic material for handicrafts that have value and price. According to (Sudana & Mohamad, 2020) To increase the competitiveness of hyacinth handicraft products, innovation must be carried out by creating new designs or models that are distinctive and relevant to market needs. Through the creation of distinctive new designs, handicraft products will be able to compete and reach a more extensive market.

Second, Price. Craftsmen use the calculation of standard cost of goods produced in setting prices for each product. Harga of production is calculated by summing the cost of the raw materials used plus complementary materials, labor costs and production costs. This price is also subject to change at any time following the times. There are 3 kinds of prices, namely wholesale prices, retail prices and merchant or reseller prices. (Mursyidi in Adawiyah et al., 2013) . The cost of goods is one of the important elements in determining the selling price of an item produced. The cost of goods is a cost that has not been charged or deducted from income.

Third, Promotion. Craftsmen promote such products Online and Offline. Online Promotion through social media such as Instagram, Facebook and WhatsApp. Meanwhile, offline promotion through exhibitions and kiosks are opened in tourist attractions. In Fauzi's opinion (2021) that promoting through social media such as

Instagram, creating a page on Instagram that aims to make the product known by many people and more consumers who buy it. In the research of Budiyanto et al., (2020) One of the promotional media for Usaha Mikro Kecil Menengah products is through exhibitions. A trade show or exhibition generally open to the public is an advertising medium, because the purpose of the exhibition is to introduce a product to the public so that they are interested, then buy it.

Fourth, Place. This location is very important in opening a business / business. In the research of Fajar Fahrudin & Yulianti (2015) that location affects consumers' buying interest in sales, in this case, sellers must further improve location cleanliness and comfort so that consumers are interested in shopping. However, not for this hyacinth craftsman, the location in the village of Kebondowo Banyubiru is not strategic enough for marketing, but strategic for production because it is very close to the basic ingredients of hyacinths that grow and develop in Rawapening.

Fifth, People (Personal). The personalities involved when opening this handicraft business are business owners, employees and resellers, no one is involved but the 3 people.

Sixth, Process. The time used in the product manufacturing process, depends on the number of product orders and the complexity of the product. The manufacturing time of each product is relatively long, its manufacture requires patience, accuracy and perseverance, the product is attractive and unique, and is rarely made by many people (only limited to being pursued and cultivated by Hyacinth Craftsmen) (Rapitasari, 2016).

Seventh, Physical Evidence. Physical evidence in order to attract consumers, craftsmen give several examples of handicraft products that are displayed in production houses, in stalls – stalls in tourist attractions and exhibitions. In the opinion of Suryadharma & Nurcahya (2015) stated that physical evidence in sales can have an effect on customer satisfaction that can attract customers.

## **CONCLUSION**

Based on literature review, hyacinth can be used as an art paper material and handicraft material for chicken bags. Stages that can improve the quality of a product can be done with the Quality Function Development and House of Quality methods. The strategy of pgoldaran handicraft products made from water hyacinth can be done through a marketing mix, namely produk, price, promotion, location / Place, personal, process and physical evidence.

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