

Adding Value of Thai Herbs to Create a Career for the Semi-urban, Semi-rural Community in a New Way of Life, PHRA Nakhon Si Ayutthaya

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Abstract

The objectives of this research and development are 1) to explore and study the properties of herbs in Lam Ta Sao municipality community which was found that Moo 5 plant various herbs such as kaffir lime, lemongrass, and phrai to use as food in daily life and the community want to develop herbal products to generate income for their livelihood due to the decreasing of income caused by the COVID-19 epidemic ; 2) to develop products and packaging design for 4 types namely herbal oils, herbal balsams, herbal conditioners and herbal balms since the community is semi-urban, semi-rural which allows a variety of packaging designs and 3) to explore consumer satisfaction towards purchasing herbal products by collecting questionnaire from 400 people.

The results showed that most of the informants were women, aged 35 - 44 years and have company employee occupation. In terms of purchasing behavior, it was found that they bought herbal products from community production to promote career and income at ₪ 4.52, bought herbal products for relatives and acquaintances at ₪ 4.35, bought herbal products for inhalation to help the respiratory system at ₪ 4.26 and bought 2-3 bottles of herbal products each time for daily use at ₪ 4.10. The purchase decision found that the price was at ₪ 4.34 because herbal products have a reasonable price for the quality of the product. On the product aspect was at ₪ 4.30 because the product has no color additives and is natural. On the distribution channel was at ₪ 4.08 due to the recommendation from surrounding people. Location aspect was at ₪ 3.98 because of the production facility in a community that is easily accessible with a clear location. Overall satisfaction in purchasing herbal products was at ₪ 4.37 because they are products made from natural and quality raw materials. The packaging is the reasonable amount for the price and can keep the product safe.

Index Terms— Added value, Thai herbs create a career, Semi-urban, semi-rural community in new way of life

I. INTRODUCTION

Due to the epidemic situation of COVID-19 in Thailand that started from March 2020 onwards, the Cabinet has announced the Emergency Decree on Public Administration in Emergency Situations across the country starting from March 26, 2020, and has extended the period until May 31, 2020 to prevent and control the outbreak of COVID-19. In this regard, people are prohibited from leaving their homes within a specified period of time, along with restrictions on entering and leaving the country, prohibiting entry to high-risk areas, and banning buildings or places that are at risk of contracting COVID-19. The measure has affected companies, factories, enterprises, and many shops need to cut jobs, lay off jobs, or even close their businesses. As a result, the number of unemployment rates has increased as most people have been laid off, lost their jobs, and their incomes have dropped. In the end, the overall picture of the Thai economy must inevitably be in a crisis. The recovery of the Thai economic crisis after the aforementioned situation should be urgently needed to help people live a sustainable life, including the country's overall economic stability. Initially, it should start from driving the overall economic system of the country to be stable and strong. In terms of problems, limitations and opportunities

for development, proper and appropriate development should be focused primarily on development to benefit the majority of the country such as promoting the strength of community-based economic development that leads to the ability to help themselves sustainably [10].

The research on strengthening communities by utilizing collaborative learning from participatory action research is an important tool in the development of community-based business groups. The study emerges from a systematic integration concept that must be driven holistically through knowledge, learning, participation, action, monitoring, and evaluation. Local higher education institutions are leading the way in driving this idea together with communities to achieve the common mission of each sector [9].

In Thailand, herbs are a unique wisdom and resource, as well as the foundation of valuable agriculture and a reputation that is highly recognized internationally. The government is trying to promote the export of herbs to increase the economic numbers for the country. In this regard, there is more industrial promotion related to Thai herbs. Importantly, the Cabinet approved the 1st National Master Plan on Thai Herbs Development 2017-2021 on October 4, 2016, as proposed by the Ministry of Public Health. Thailand is targeted to be the leading exporter of quality herbal raw materials and herbal products in the ASEAN

region by 2021. By 2021, the value of herbal raw materials and herbal products in the country should increase at least 1 time. Four strategies were then formulated to achieve that goal: The first strategy is to promote potential Thai herbal products according to the needs of both domestic and international markets. The second strategy is to develop the herbal industry and marketing to have international quality. The third strategy is to promote the use of herbs for medicinal purposes and to enhance health and strength in management. The fourth strategy is to lay down government policies to drive sustainable growth in Thai herbs [11].

Thai herbs are part of the way of life and Thai society that has been inherited and developed for a long time. Due to its natural products and safety, herbs are used in both savory and sweet dishes, medicinal purposes, and for internal and external health care. Thai herbs are diverse and each has different properties and effects, therefore it is widely used for processing, including promoting the value of herbs for the sustainable development of Thai society in the future. Development and processing of medicinal plants with local wisdom by using biodiversity resources to develop the community economy is carried out by the development and processing of herbs into various products, and design and develop products and beautiful packaging to create attractiveness and generate value added of the product [1]. Value added for products therefore plays an important role in attracting the attention of new consumer groups and retaining existing consumers. Today's business is not just about selling products, but also adding value to make consumers feel more benefiting from the products, so those products can be as successful as they should be [13]. The integration of herbal plant processing can be driven into community products as a basis for sustainable community economic development, as well as building on local wisdom [1].

Lam Ta Sao Town Municipality, Wang Noi District, Phra Nakhon Si Ayutthaya Province is a semi-urban society characterized by rural communities mixed with villages and small towns. There are a total of 8,541 households. There is a latent population of about 8,000 people because it is an area near Rojana Industrial Estate, Factory Land Industrial Estate, and many medium and small factories. Farming occupations in the community tended to decline due to the expansion of industry. Most of the farmers in these communities sell their arable land and turn to other occupations [13]. Since the outbreak of COVID-19, the community's income has declined and the community economy has deteriorated, which directly affects the quality of life of people in the community. To restore the Thai economy after the COVID-19 epidemic, the researcher has an idea to add value to Thai herbs by means of product design to support the changing world that is moving towards an aging society such as Thai herbal aroma oil, and Thai herbal inhaler. Such products can create a career and income for the community and the general public can do it themselves. In addition, the researcher also foresaw that once the design of Thai herbal products was successful, the community leaders and people in the community might have marketing problems in terms of the direction of product distribution. The research team therefore went to the area to provide knowledge about Thai herbal product production and integrated marketing in a new way of life in order to create sustainable income and careers for the community. Finally, the community was able to continue to be

self-reliant. In addition, branding of products in the community was considered to create an image and reputation for the community and could use the knowledge gained to develop other products further.

II. RESEARCH OBJECTIVES

The objectives of this research and development are 1) To survey and study the types and properties of Thai medicinal plants in the community of Lam Ta Sao Town Municipality, Wang Noi District, Phra Nakhon Si Ayutthaya Province with potential for processing and commercial distribution 2) To develop products and design packaging for value added to Thai herbs in the community of Lam Ta Sao Town Municipality, Wang Noi District, Phra Nakhon Si Ayutthaya Province and 3) To study consumer satisfaction and purchasing decision towards Thai herbal products in the community of Lam Ta Sao Town Municipality, Wang Noi District, Phra Nakhon Si Ayutthaya Province.

III. RESEARCH METHODS

R&D research was conducted by using surveys and studying the types and properties of Thai medicinal plants in the community for product development and packaging design, as well as creating additional careers for the community, which was a semi-urban, semi-rural community. Interviews were conducted on product development and consumer satisfaction studies on herbal products of the community in Lam Ta Sao Town Municipality, Wang Noi District, Phra Nakhon Si Ayutthaya Province.

The purposive sampling was used in research based on the concept of Patton, 1990. This method was a unique randomization. The sample group used in the study was Lam Ta Sao Town Municipality Community, Wang Noi District, Phra Nakhon Si Ayutthaya Province because it was a semi-urban, semi-rural community between industry and community. In terms of rural areas, there was also an interesting natural way of life that is the use of herbs in daily life. The types and properties of herbs were explored and studied and developed into herbal products. There were 3 herbal experts and product development and 400 respondents using accidental sampling. All samples lived in Lam Ta Sao Town Municipality Community, Wang Noi District, Phra Nakhon Si Ayutthaya Province.

The research instruments were interview forms and questionnaires. The descriptive content data were analyzed and quantitative questionnaires were collected using descriptive statistics, frequency, percentage, and standard deviation.

Data Collection: The researchers collected two types of data: 1) Interviews with community leaders in each village were conducted using purposive sampling to explore and study the information about the community's medicinal planting and the use of herbs for further product development. The researchers scheduled each informant's appointment in advance of the interview. Information was collected from relevant documents to support the information. 2) Data collection by questionnaire was collected from 400 residents of Lam Ta Sao Town

Municipality using accidental sampling. The details were as follows.

Interview: The researcher prepared before the field trip by means of studying the community environment and information about herbs, including searching for information from various published channels, literature review related to herbal product production and interview modeling. Therefore, the information was complete according to the objectives and ethical principles in research.

Interview Techniques: The audio recording method was used by asking the informant's permission and taking notes during the interview and asking for permission to take still pictures without showing the interviewee's face. Interviews were conducted on the topics that are fully prepared and meet the objectives. General questions were also asked to reduce the concerns of the interviewees. The interviewee was willing to provide information. (Pongnarin Pitijatturat, Sodchuen Utamart, and Suparada Pimpan, 2020)

Data analysis: In the research, the interpretation and analysis of the data collected in accordance with the concepts of Strauss & Corbin.1998 were used in the research. There was a 3-step method: 1) Encoding 2) Data Link, and 3) Integration. In this regard, it was to discover the essence of the matter and demonstrate systematic data analysis. Statistical programs were used to process the analysis of the data to ensure the accuracy and consistency of the given statistics.

To verify the reliability, the researchers used the following techniques: 1) The perspectives of at least two researchers were used to analyze and interpret multiple times to obtain the same information. It was the collection of information from a variety of sources to obtain comprehensive information for a purpose. Three interviews and no more than 1 hour each were conducted to bring those data for interpretation and analysis to show how the herbal product was ultimately developed. 2) The research was a numerical analysis that describes the results of collecting data from 400 people. A quantitative analysis was used in the research through interview forms and questionnaires reviewed by 3 experts to determine acceptable IOC values for questions with a value of 0.5 onwards. The results showed that the questionnaires and interviews were content validity and acceptable (Kalaya Wanichbuncha, 2017). The interview form consisted of 5 items with IOC values between 0.78 -1.00. The questionnaire consisted of 28 items with IOC values ranging from 0.81-1.00 which was greater than 0.50 indicating that the tool could be used in qualitative research and used to collect data effectively.

IV. RESULTS

Value added of Thai herbs helped to create a career for the semi-urban, semi-rural community in a new way of life. It was conducted by surveying and studying the types of herbs in Lam Ta Sao Town Municipality for product development and packaging design, as well as to transfer knowledge to the community. The results of the research process were as follows:

1. The results of the herbal survey of Lam Ta Sao Town Municipality by interviewing community leaders of 13 villages and 2 per village, it was found that most of each village did not grow herbs for consumption such as kaffir lime leaves, and lemongrass. They said it was more

convenient to buy because it was inexpensive and easy to find. Importantly, each village had limited space. However, in some villages such as Moo 5, herbs such as kaffir lime leaves and lemongrass were planted in front of their houses. Village leaders said it was planted for sharing and used in times of need. Because there were many homes planted, they would like to develop into other products to keep for long-term use. When the kaffir lime tree grew, the leaves and fruits would come out in large numbers and needed to be cut off. The villagers therefore regretted that they would be left in vain. If the aforementioned products could be used to create new products and sell them, it would benefit the people in the community and conserve Thai herbs for future generations.



2. The results of herbal product development and packaging design revealed that herbs in the community such as kaffir lime, lemongrass, and phrai could be developed into 4 types of new products: herbal oils, herbal gel balms, herbal balms, and herbal air freshener. All 4 types were products that can be used in daily life. When ranking the satisfaction of the people in the community, it was found that 1st place was herbal oil because it could be used easily, relieves aches and pains and could be inhaled, making the respiratory system comfortable. 2nd place was herbal balm because its gel-like form makes it easy to store and used in massages to relax muscles and lines. 3rd place was herbal air freshener because it could be used in the home and in the car, but it was not as popular as there were many other products available in the market. 4th place was the herbal balm, which was the least satisfied because it was difficult to use and less reliable for its effectiveness. Each type of product had different packaging characteristics and styles, both in terms of functionality and durability.



3. The results of the evaluation of consumers' decision to purchase herbal products by collecting data from 400 consumers found that

General information of the respondents

Gender information

Gender	Number	Percentage
Male	95	23.75
Female	211	52.75
Unwilling to answer	94	23.50
Total	400	100.00

Age information

Age	Number	Percentage
15-24 years	35	8.75
25-34 years	41	10.25
35-44 years	124	31.00
45-54 years	108	27.00
55 years and over	62	15.50
Unwilling to answer	30	7.50
Total	400	100.00

Occupation Information

Occupation	Number	Percentage
Student	35	8.75
Private company employees	181	45.25
Civil servants/State enterprises	98	24.50
Self-employed	57	15.25
Housewife	22	5.50
Unwilling to answer	7	1.75
Total	400	100.00

General information showed that the majority of respondents were 211 women (52.75 percent), and 124 people were aged 35-44 (31.00 percent). Most of the 181 people were employed by private companies (45.25 percent).

Table 1 Show the results of the selection of herbal products.

Products	Number	Percentage
Herbal oil	209	52.25
Herbal balm gel	85	21.25
Herbal balm	31	7.75
Herbal air freshener	75	18.75
Total	400	100.00

Table 1 shows the results of the selection of herbal products. It was found that the respondents decided to purchase herbal products in the following order: herbal oil of 209 people (52.25 percent), followed by herbal balm gel of 85 people (21.25 percent), herbal air freshener of 75 people (18.75 percent), and herbal balms of 31 people (7.75 percent).

Table 2 shows the mean and standard deviation of the population with herbal product purchasing decision in terms of purchasing behavior of herbal products.

Buying behavior of herbal products	\bar{x}	SD
You buy herbal inhalation products to treat your respiratory system.	4.26	0.41
You buy herbal products from community-based production to support your career and generate income.	4.52	0.48
You buy herbal products to give to relatives, friends, and acquaintances.	4.35	0.45
You buy 2-3 bottles of herbal products at a time for daily use.	4.10	0.38
Total	4.30	0.43

Table 2 shows the mean and standard deviation of the population deciding to purchase herbal products. It was found that in the overall behavior of the samples who decided to buy herbal products had the highest level of satisfaction and an average of 4.30. The purchase of herbal products from community production for career promotion and income generation had the highest level of satisfaction and an average of 4.52, followed by the purchase of herbal products for relatives, friends, and acquaintances with the highest level of satisfaction and an average of 4.35, the purchase of inhalation herbal products for respiratory support had the highest level of satisfaction and an average of 4.26, and the purchase of 2-3 bottles of herbal products for daily use had a high level of satisfaction and an average of 4.10, respectively.

Table 3 shows the mean and standard deviation of the population with decision to purchase herbal products in terms of marketing strategies that influence the decision to purchase herbal products of the community.

Product	\bar{x}	SD
Herbal products are colorless and natural.	4.55	0.47
Herbal products are made from local raw materials and non-toxic.	4.50	0.45
Herbal products are packaged to protect and maintain product quality.	4.10	0.42
There are many types of herbal products to choose from.	4.05	0.40
Total	4.30	0.43
Price	\bar{x}	SD
Herbal products are priced appropriately for the type of use.	4.41	0.43
Herbal products are priced appropriately for the quantity.	4.35	0.40
Herbal products are priced appropriately for the nature of the packaging.	4.09	0.38
Herbal products are priced appropriately for the quality.	4.54	0.38
Total	4.34	0.42

Place	\bar{x}	SD
The production site is located in an easily accessible community.	4.31	0.42
There is easy access to the product storage and can be accessed from many routes.	3.54	0.39
There is a parking lot for herbal products and it is convenient to park and buy.	3.98	0.40
There is a clear location of the production site, and reliability.	4.12	0.37
Total	3.98	0.39
Distribution channel	\bar{x}	SD
Herbal products are sold at flea markets near the producer's community.	4.53	0.45
You know how to arrange herbal products from word of mouth of people around you.	4.55	0.47
You decide to buy herbal products because the manufacturer's recommendation and the manufacturer act as the seller itself.	4.25	0.42
You buy herbal products through Facebook and Line.	3.02	0.36
Total	4.08	0.42

Table 3 shows the mean and standard deviation of the population who decide to purchase herbal products in terms of marketing strategies that affect the community's decision to purchase herbal products. It was found that the decision to purchase herbal products for consumers was primarily based on price strategies. The average was 4.34 because herbal products were priced appropriately for the quality of the products. The average was 4.30 because the herbal product was colorless and natural. In terms of distribution channels, the average was 4.08 because herbal products were word-of-mouth for consumers. In terms of location, the average was 3.98 because the production site was in an easily accessible community and clear location.

Table 4 shows the mean and standard deviation of the population influencing the purchasing decision of herbal products in terms of the decision to purchase herbal products of the community

Decision to buy Community-produced herbal products	\bar{x}	SD
Community-produced herbal products were of good quality and aroma, and long product life.	4.51	0.44
Community-produced herbal products are reasonably priced for the quantity.	4.45	0.40
Community-produced herbal products are beautifully packaged, modern and durable for storage.	4.01	0.36
Herbal products are made from natural raw materials, thus ensuring safety.	4.52	0.47
Total	4.37	0.41

Table 4 shows the mean and standard deviation of the population who decide to buy herbal products in terms of community herbal product purchase decision. It was found that in the overall sample group who decided to buy herbal products was at the highest level. The average was 4.37 because the products were made from natural raw materials,

good quality, and long product life, coupled with reasonable packing volume for the price and able to keep the product safe and reliable.

V. DISCUSSIONS AND DISCUSSION

Research on "value added of Thai herbs to create a career for semi-urban, semi-rural communities in a new way of life in Lam Ta Sao Sub-district, Wang Noi District, Phra Nakhon Si Ayutthaya Province" could discuss the research results as follows. The results of herbal product development and packaging design revealed that herbs in the community such as kaffir lime, lemongrass, and plai could be developed into 4 types of new products: herbal oils, herbal gel balms, herbal balms, and herbal air freshener. All 4 types were products that can be used in daily life. When ranking the satisfaction of the people in the community, it was found that 1st place was herbal oil because it could be used easily, relieves aches and pains and could be inhaled, making the respiratory system comfortable. Consistent with the research of Wuttichai Wisuthiphot [5] kaffir lime was herb that contains essential oils that can help reduce inflammation. 2nd place was herbal balm because its gel-like form makes it easy to store and used in massages to relax muscles and lines. Consistent with the research of Wuttichai Wisuthiphot [5] kaffir lime were active herbs. Kaffir lime peel extract helps reduce pain and inflammation and was classified as topical formulations for the treatment of inflammatory pain. 3rd place was herbal air freshener because it could be used in the home and in the car, but it was not as popular as there were many other products available in the market. 4th place was the herbal balm, which was the least satisfied because it was difficult to use and less reliable for its effectiveness. Each type of product had different packaging characteristics and styles, both in terms of functionality and durability. The properties of the herbs studied could be extracted as essential oils and were useful for healing, soothing, and reducing inflammation. Consistent with the concept of Thapanee Hongrattanaworakit [6] said that essential oils were oils extracted from the plant's flowers, fruits, bark, seeds, leaves, roots, stalks, or wood. These plants had special regions where they collect aromatic substances that were good for relaxation. Consistent with the concept of Nannaphat Wandee [7] said that fragrant herbal inhalers were classified as home herbal inhalers for inhaling to relieve dizziness, lightheadedness, drowsiness, colds, stuffy nose, and relieve stress during the day.

2. Overall, the purchasing behavior of herbal products was at the highest level and the average was 4.30. The purchase of herbal products from the community to promote careers and generate income was the highest level of satisfaction, and it was the purchase of herbal products for relatives, friends, and acquaintances. Consistent with the concept of Preeyanuch Dangdet [2] who researched factors affecting the purchasing decision of herbal pain relief products among consumers in Bangkok, it was found that when consumers knew their needs for a product or service, they seek information from others such as family, friends, neighbors, and acquaintances. Consumers then bought inhaled herbal products to help their respiratory system. Consistent with the research of Ittikorn Khamdet [14] who studied the purchasing behavior of health products of

working people, it was found that the behavior of using herbal products affects the decision to buy health products in terms of self-care and health improvement.

Marketing strategies that affect the decision to buy herbal products of the community found that consumers' purchasing decisions were based on price strategies because herbal products were reasonably priced in relation to product quality and quantity. Consistent with the concept of Chittinan Wannasuphaphon [4], who researched factors affecting the purchasing behavior of herbal beauty products among female consumers in Bangkok, it was found that at the purchase decision stage, consumers agreed that they would pay for the best and most cost-effective products. In terms of product strategy, it was a herbal product that is colorless, natural and non-toxic. Consistent with the research of Piphat Piasorn [15] who researched the decision-making process for purchasing herbal products of the population in Bangkok, it was found that herbal products affected the purchase decision because they were natural and safe products. In terms of distribution channel strategy, consumers knew the herbal products by word of mouth of the people around them. Consistent with the concept of Preeyanuch Dangdet [2], who researched factors affecting the purchasing decision of herbal pain relief products among consumers in Bangkok, it was found that when consumers knew their needs for a product or service, they seek information from other sources such as family, friends, neighbors, and acquaintances. In terms of location strategy, it was a product in an easily accessible and well-located community, thus making it reliable and distributed in an easily accessible market. Consistent with the concept of Thanaporn Suebinthorn [3] who researched factors affecting the purchasing behavior of Abhaibhubejhr herbal products of consumers in Prachinburi Province, it was found that the location of distribution played an important role in the preservation of the manufacturer's products to the consumer. The distribution location affected the distribution of products and services as far as possible to the target customers and maintain the quality as much as possible.

Overall, the decision to purchase herbal products was at the highest level. The average was 4.37 because the products were made from natural raw materials, good quality, and long product life, coupled with reasonable packing volume for the price and able to keep the product safe and reliable. Community-produced herbal products were of good quality and aroma, and long product life. Consistent with the concept of Nawaporn Rattanaburi [8] good entrepreneur should develop products to meet the needs of consumers and be fair to consumers in terms of quality, reasonable prices, and impressive service for repeat purchases of consumers, leading to further business growth.

VI. RECOMMENDATIONS

Thai herbal products should be promoted as a community enterprise to promote participation, increase income, and create a career for the community as well as develop a strong and self-reliant community.

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