

Taiwan Aboriginal Traditional *Alpinia zerumbet* Handicraft Preparation Study

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Abstract: In this globalized generation, the importance of the local culture has been concerned gradually. More and more countries are finding their own traditional culture features and develop the cultural and creative industries; one of the Taiwan unique cultures is aboriginal culture. The Taiwan aboriginal culture has many potential elements that could be transformed into cultural and creative industries. In this study, the *Alpinia zerumbet* (Shell Flower) handicraft is a very important part of the Taiwan east coast aboriginal culture and it is also a good example of green design. But in the past few years, due to the invention of plastic materials, the shell flower handicraft has been forgotten slowly in this modern society. So the sustainable development of the shell flower handicraft is very important. In this study, the research aim to achieve following purpose: investigation and record of shell flower preparation process, field exploration and investigation of wild shell flower, and the condition analysis of mature shell flower which is ready for handicraft. The case study research and field research were adopted in this research. The researcher chooses several experienced crafters from Taiwan east coast aboriginal tribe to have depth interviews, and chose a cluster of wild shell flower to observe and record. By the full observation and interviews, the research established eight steps of complex preparation process detail, and found out the growth condition of shell flower are usually not well because of not being an economic crops. Despite the growth environment diversity, the number of leaves and the length and width of the biggest leave can be the evaluation standard of mature shell flower which is ready for making of handicraft. Hoping through these series studies and bring innovative perspective into Taiwan cultural and creative industry and the field of green design.

Keywords : *Cultural and creative industry, Taiwan aboriginal culture, *Alpinia zerumbet*, green design*

1. Introduction

In this globalized generation, local culture has been replaced quietly by the international mainstream cultures. Some of the important traditional and precious culture elements will disappear eventually, so the importance of the local culture has been concerned gradually. In recent years, more and more countries are finding their own traditional culture features and develop the cultural and creative industries. In Taiwan, there are several unique traditional cultures include the Hakka culture, the Minnan culture and the Aboriginal culture. The Taiwan

aboriginal culture has many potential elements that could be transformed into cultural and creative industries. The *Alpinia zerumbet* (Shell Flower) handicraft is a very important part of the Taiwan east coast aboriginal culture and it is also a good example of green design. However, in the past few years, due to the invention of plastic materials, the shell flower handicraft has been forgotten slowly in this modern society. But in this circumstances of emphasizing environmental protection and green design, the sustainable development of core value of the shell flower handicraft is very important. At this time, the main problem of development of shell flower handicraft is the complexity of preparation process and the inconsistent quality. In order to achieve the sustainable development and innovative application, the possibility of mechanized mass-producing has to be considerate. The basic investigation in the initial stage is crucial. So in this study, the research aim to achieve following purpose: investigation and record of shell flower preparation process, field exploration and investigation of wild shell flower, and the condition analysis of mature shell flower which is ready for handicraft.

2. *Alpinia Zerumbet*

Alpinia zerumbet is an evergreen tropical perennial and 1-3 meters tall plants in tropical climates. In Taiwan, it can be found in plains and low-elevation mountains. It grows in cluster and easy to harvest. It is also called a shell ginger or shell flower most commonly [1]. About the life cycle of *Alpinia zerumbet*, February to March is infancy; April to August is flowering period; May to September is fruit period; but the defoliation is not regularly [2]. In Taiwan, the aboriginal tribes like Beinan, Lukai, and Paiwan use shell flower to make “abay”(rice with meat and covered with shell flower) [3]. Because the fiber of creeping stems of shell flower has good toughness, so it’s usually using for making weaving handicraft. There are so many kind of shell flower weaving handicrafts, including pads, cradles, bags, purses, and many type of containers. Figure 1 shows the rest part of shell flower also have many applications. The flower and be add in the cuisine, and the seed is an important ingredient of medicine; the leaves can be extracted into essential oils and skin care product; the underground stems can be making of food and cleaning supplies. Overall, the whole plant of shell flower can be very useful in our daily life.

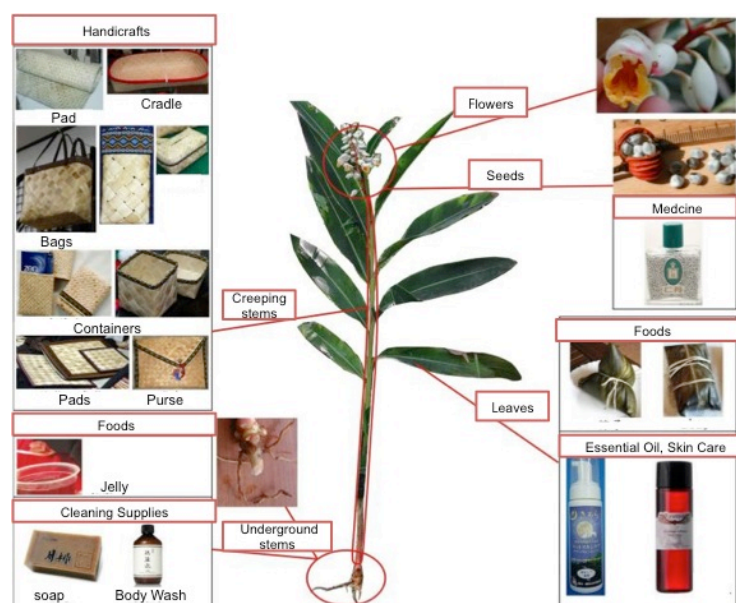


Figure.1 Whole plant using

3. Research Method

The case study research and field research method were adopted in this research. A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when boundaries between phenomenon and context are not clearly evident [4]. And the field research is aimed to gain a close and intimate familiarity with a given group of individuals (such as a religious, occupational, or sub cultural group, or a particular community) and their practices through an intensive involvement with people in their natural environment, usually over an extended period of time. The method originated in field work of social anthropologists, especially the students of Franz Boas in the United States, and in the urban research of the Chicago School of sociology [5]. In order to understand the detail of preparations of handicrafts, the researcher chose several experienced crafters from Taiwan east coast aboriginal tribe to have depth interviews. And the researcher also chose a field to observe the wild shell flower integrally to record the growth environment and conditions.

4.1 Preparation process of Alpinia Zerumbet Handicraft

The traditional Alpinia Zerumbet (shell flower) handicraft preparation procedures are very complex and time-consuming. First step is to harvest the mature but not flowering wild shell flowers, and the next step is cutting all the leaves and the first time sun-drying. The purpose of the first time sun-drying is to decrease the moisture content of the shell flower stem and the shell flower stem will be softer. The second step is shelling the shell flower stem into single stem piece, the rest of shell flower stem can be sun-drying and shelling again. The third step is reverse curling and tying the stem piece of shell flower gently and the fourth step is the second time sun-drying. The second time sun-drying will dry almost all moisture content of the stem piece of shell flower, and the color of the stem piece will turn into light brown. The last step is flattening and trimming, the crafters use the back of the scissor to flat the stem piece, and then cut the redundant edges. After all the steps, the crafters usually bunch ten stem pieces together for storage and sell. Figure 2 to 7 shows the every step of the preparation process.



Figure.2 Harvest and Sun-drying



Figure.3 Shelling



Figure.4 Reverse Curling



Figure.5 Second time Sun-Drying



Figure.6 Flatting and Trimming



Figure.7 Bunching

4.2 Growth Environments and Conditions of Alpinia Zerumbet

In this study, a cluster of wild shell flower is chosen to observe and harvest. In general, being a non-economic crop, the growth environment of the wild shell flower are usually disadvantageous. Figure 8 shows the shell flower can be usually found on the hillside or the footpath of farms, and figure 9 shows the condition of earth is usually dry because of not being watering. Despite the disadvantageous environment, the shell flower can still growth very well. This appearance shows the shell flower is a very tenacious plant, and it has potential to be economic crop of new generation green design material.



Figure. 8 Growth Environment



Figure.9 the Condition of Earth

4.3 the Average Conditions of Mature *Alpinia Zerumbet*

In the traditional way, crafters usually distinguished which shell flower are already matured by their own experience. There is no direct data to describe how shell flower is already matured. In order to realize the average conditions of matured shell flower plants which are ready for making of handicrafts, the researcher harvested 26 shell flower plants of single cluster to measure the weight of plants without leaves, the weight of leaves, the length of the plant, the number of leaves and the size of biggest leaves. Figure 10 to figure 13 shows the process of measurements.



Figure. 10 Measuring the Weight



Figure.11 Measuring the Length



Figure.12 Measuring the Length of the leaves



Figure.13 Measuring the Width of the leaves

After measuring, the researcher picked out 16 shell flower plants which are ready for making of handicraft, and collated relative data. Table 1 shows the measurements of mature shell flower plants which are ready for making of handicrafts. The mainly distinguish basis are the length, the weight without leaves and the number of leaves. The range of length is 1550mm to 1880mm, and the average length is 1763.44mm. The range of weight without leaves is 418g to 651g, and the average weight without leaves is 543.44g. The range of number of leaves is 8 to 13, and the average number of leaves is 11.

Table 1. Measurements of Mature Shell Flower Plants

No.	Length (mm)	Width of the biggest leave(mm)	Length of the biggest leave (mm)	Weight without leaves (g)	Weight of leaves (g)	Weight of whole plant (g)	Number of leaves
1	1740	162	640	596	447	1043	13
2	1870	170	750	572	263	835	8
3	1740	170	720	572	387	959	11
4	1850	180	740	633	325	958	9
5	1775	175	660	644	303	947	8.5
6	1640	165	660	464	292	756	10
7	1670	160	660	492	338	830	11
8	1730	160	660	607	375	982	12
9	1640	135	610	435	373	808	12.5
10	1840	160	720	480	328	808	11
11	1730	180	730	418	405	823	10
12	1880	145	670	563	437	1000	12
13	1800	150	660	504	341	845	11
14	1550	130	610	446	339	785	12
15	1880	180	710	618	401	1019	12
16	1880	170	720	651	366	1017	10
Average	1763.44	162	682.5	543.44	357.5	900.94	11

4.4 Discussion

After interviews with crafters, the research fully recorded the preparation process of shell flower handicrafts. The preparation process includes harvest, first time sun drying, shelling, reverse curling, tying, and second time sun drying, flatting and trimming. The whole process is very complex and time-consuming, and all the detail conditions are depends on the crafters' experience. So there are some difficulty to heritage because of lacking of standard operate procedure.

Shell flower are not an economic crop in Taiwan, and they almost are wild and very widespread. The size (length and weight) of wild shell flower are quite different because of the growth environment diversity including the earth condition, temperature, and rain condition. But after analysis of observation and investigation, the researcher found: despite the growth environment diversity, the number of leaves and the length and width of the biggest leave can be the evaluation standard of mature shell flower which is ready for making of handicraft. The number of leaves is proportional to the growth condition; the mature shell flower has about 10 to 12 leaves. The length and width of the biggest leaves are also proportional to the growth condition; the length of biggest leaves is about 700mm, and the width of the biggest leaves is about 170mm.

5. Conclusion

Through the depth interview with the aboriginal crafters and fully record of the preparation process of shell flower handicrafts, the research established eight steps of complex preparation process detail. The researcher also

chose and harvest a cluster of wild shell flower to observe, and found out the growth condition of shell flower are usually not well because of not being an economic crops. After measuring and analysis, this study records the regular sizes of wild shell flower. The most important point is: despite the growth environment diversity, the number of leaves and the length and width of the biggest leave can be the evaluation standard of mature shell flower which is ready for making of handicraft.

After this stage research, the possibility of mechanized mass-producing and green design application are more convinced. The follow-up study could focus on the physical and chemical properties of shell flower, and through experiments to test details of every steps of preparation process. The further target is using the machines to increase the complexity and time-consuming manual process. Hoping through these series studies and bring innovative perspective into Taiwan cultural and creative industry and the field of green design.

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