

**MANAGEMENT OF GRADING AND PACKING OF CHEWABLE PAN****Bharat V. Patil, Ph. D.**

*Matoshri Bayabai Shripatrao Kadam, Kanya Mahavidyalaya, Kadegaon, Dist-Sangli,  
Maharashtra (India)*

**Abstract**

*The method of packing of betel vine leaves and package materials used for it varied from region to region. Packing of betel vine leaves dependent upon quality of leaves, seasons and the availability of packing materials. The betel leaves were packed according to size, colour, texture and maturity on which the chewing quality depended. Grading was done in different ways in different areas. Grading of betel leaves was dependent upon their position on the betel leaves on vine, their maturity and production quality betel leaves. The branches of mulberry were used for packing betelvine leaves. Banana fiber and leaves were also used as a packing material Bamboo baskets also used to pack small contains up to three thousand leaves. This package was locally called a Karandi. About six thousand leaves were packed in the banana fiber with the help of branches of mulberry. They were called as Dappa. In the Dappa and Karandi, Kalli leaves were packed. Fapada leaves had large size and were packed in Dag containing twelve thousand leaves. The bottom and top of the Dag made-up by using ring of mulberry branches. The betel leaves were marketed in local markets or sent to noted city markets. The betel levees were distributed to merchant by the local commission agents. The pan-shop keepers kept the leaves for their purpose by sprinkling water. The leaves were to be kept in fresh conditions for five to six days by sprinkling water continuously and wrapping the leaves with wet cloth. The price was not fixed by open auction. The price was always settled on the basis of sampling for the quality. The commission agents charged their commission near about eight to twelve percent of the sale. They also deducted all other charges and the remaining amount was to be settled. The dag, dappa and karandi were tied with the help of string or plastic rope. The package was cushioned on top and at the bottom with moist sugarcane leaves and fresh banana leaves. The betelvine leavers were arranged in circular rows in the Dag. The rows were arranged from the periphery in the dag and closed towards the center. Thus rows upon rows were arranged. In case of fapada dag, there was a hole in the center with 10 to 15 cms diameter allowing free aeration. Commission agents drew leaves samples from any part of the dag. Each betelvine was picked at six to ten times in a year. Pickings were so arranged that all vines were not to be picked at the same time. Three types of pickings were practiced. Leaves of main stem were called as fapada. The leaves that were borne on branches of vine were called as kalli. The leaves that had lower parts of vine and one betelvine coils were known as hakkal or Gabal. But they did not fetch better price. Fapada leaves were older, thick, raped and dark green which fetched high price as compared to kalli leaves. In every day, approximately, a single labour is able to cut one or two dags (12,000 leaves).*

**Key Words:** *Grading, Unit of packing, i.e. Dag, dappa and Karandi*

## **2. Review of Literature**

The leaves were assembled from the branches called as *Hatvan* which were considered as the best for chewable. The betel leaves, those at the nodes on the main stem, were called as *Angwan* which were also called as *fapada*. Those betel leaves, kept on vine to mature for a long time, were called as *Junwan*. The leaves which were gathered from lower part of the vine were called as *Hakkal* and they were mostly consumed locally. Harvesting of leaves was done three to four months after new plantations and subsequently of three to four weeks intervals. The leaves that were born on the branches were called as *kalli* leaves.

Chaugule and others, loc. cit; stated the grading in some parts of Deccan that the new betel leaves were called as *Navati*, the second plucking of leaves as *Parati* and third plucking was known as *Terti*.

Iruthayaraj, Malelu, Chowdhari, Madra, explained the packing practices of betel leaves. The plucked leaves after washing cleaning and counting were arrange in the basket. The unit of sale in chinglepur district in one kavali 100 leaves was contained. In Coimbatore, one *kavali* contained 200 leaves. The unit of packing was one *Palagai* containing 2000 leaves.

In an annual report of All India Co-ordinated Research Project on Betelvine (2000-01) explained that twenty two betelvine clones were collected and stored in the farm of Mahatma Phule Agriculture University at Sangli center. Data revealed that leaf size, leaf area and weight of leaves were more in case of Bangla variety compared to Kapoori variety Ghaneghatte and Bangla Banarasi ranked to in the leaf size (19.50 x 17.20 cm. and 18.60 x 16.20 cm. respectively) and leaf area (278 cm<sup>2</sup> and 261 cm<sup>2</sup> respectively). The leaf yield was maximum in case of SB-37 (448 number of leaf).

In the annual report of All India Co-ordinated Research Project on Betelvine (2000-01) reported the result of experiment carried out at Mahatma Phule Agriculture University at Sangli center concerned control of foot rot disease. The results of the experiment suggest that the treatment of four application of Trichoderma inoculated in 500 Kg oil cake per hectare at quarterly application showed lowest foot rot intensity (12.19%) and gave highest yield of betel leaves (51.82 lakhs per hectare) with maximum return.

## **3. Research Methodology**

### **3.1 Objectives of the study**

- To study the packing practices used for of betel vine leaves.

- To suggest remedial measures to overcome the problems in packing practices in betel vine leaves.

### **3.2 Hypotheses of the Study**

- The betel leaves were packed according to size, colour, texture and maturity of betel leaves on which the chewing quality depended.
- Grading of betel leaves was done in different ways in different areas of betel vine cultivation.
- Price fetching capacity of betel leaves depends on appropriate grading system.

### **3.3 Research Design**

#### **3.3.1 Selection of Area**

The area under betel vine cultivation was increasing day by day in Sangli district. Miraj and Walva which were noted tahsils showed increasing trend for more cultivation of betel vine and therefore the researcher selected these two tahsils for the intensive study.

#### **3.3.2 Selection of Villages**

Five villages from each of tahsil were selected purposely based on maximum area under the betel vine cultivation. Thus 10 villages were selected with specific purpose. The sampling techniques were adopted for the investigation of two stage sampling. At the first stage, village as the primary unit and the second was in regard to betel vine cultivators.

#### **3.3.3 Selection of Samples**

Six betel vine cultivators were selected from each of the selected villages out of which two from small size of group, two from medium size of group and two from large size of group. Thus, total sample in two tahsils accounted to 60 betel vine cultivators. The total samples from two tahsils were further classified that 20 cultivators from small size of group, 20 cultivators from medium size of group and 20 cultivators from large size of group.

#### **2.3.4 Scope of the Study**

The present research study was applicable to only Sangli district in which Miraj and Walva tahsils were selected. Sixty farmers were selected and personal contacts, questionnaires were solicited.

## **4. Results and Discussion**

### **4.1 Packing and Storage**

After plucking the betel leaves, there was urgency to pack them properly otherwise all leaves would be spoiled. Therefore, all betelvine cultivators were punctual in

packing of betelvine leaves in containers properly. For packing purpose the betelvine cultivators used various types of packing materials. Packing container was prepared with the help of local available materials such as branches of mulberry tree, banana leaves, fires, sugarcane leaves etc. Table 5.33 revealed the mode of packing.

**Table 1 Classification of Respondents According to Packaging Material Used**

| Sr. No. | Type of Packing Materials | No. of Respondents | % to Total Respondents |
|---------|---------------------------|--------------------|------------------------|
| 1       | Banana Fibers and Leaves  | 51                 | 85.00                  |
| 2       | Sugarcane Leaves          | 60                 | 100.00                 |
| 3       | Branches of Mulberry Tree | 60                 | 100.00                 |
| 4       | Jute String               | 36                 | 43.33                  |
| 5       | Plastic Rope              | 24                 | 40.00                  |
| 6       | Bambu Basket              | NA                 | NA                     |

Source: Primary Data

Table 1 showed the use of various packing materials by respondents. 85 per cent of respondents used banana fibers and leaves for proper packing of all *dags*. Sugarcane leaves were known as very important packing materials. Sugarcane leaves were spread in the bottom and top of the *dags*. Banana leaves were treated as the most useful material to keep leaves in safe but banana leaves were not available in much quantity. Therefore, betelvine cultivators used sugarcane leaves for packing *dags*. 15 of respondents faced the scarcity of banana leaves and fibers. Branches of mulberry tree were used to make ring which was at the bottom and top of the *dag*. 100 per cent of respondents used mulberry branches forming round packages. For maintaining proper shape of the *dags*, *dags* were tied by jute or plastic rope. 24 respondents 43.33 per cent, used jute string tying *dags*. 24 respondents, 40 per cent, used plastic rope for tying a *dag*. None of respondents used bamboo basket for packing betel leaves during the whole year.

#### **4.2 Unit of Packing-Container**

Packing unit played an important role to contain and maintain freshness of betel leaves and at the same time betel leaves were made to be durable. Due to an effective packing, loading and unloading of all packages in the trucks and tempos was possible easily. Betel leaves were put in *dag* which contained 12,000 leaves. *Dappa* which contained 6000 leaves and it was prepared by using local materials. *Karandi* was also prepared to carry betelvine leaves by using bamboo materials.

**Table 2 Classified of Respondents According to Application of Packing Unit**

| Sr. No. | Unit of Packing              | No. of Respondents | % to Total |
|---------|------------------------------|--------------------|------------|
| 1       | <i>Dag</i> (12,000 Leaves)   | 09                 | 15.00      |
| 2       | <i>Dappa</i> (6000 Leaves)   | NA                 | NA         |
| 3       | <i>Karandi</i> (3000 Leaves) | NA                 | NA         |
| 4       | 1 + 2                        | 48                 | 80.00      |
| 5       | 1 + 3                        | 03                 | 5.00       |
| 6       | 2 + 3                        | NA                 | NA         |

Source: Primary Data

Table 2 showed the classification of respondents according to using packing unit-container. 9 respondents 15 per cent used dag as a packing unit. None of the respondents used dappa and karandi as a packing unit during the whole year. 48 respondents, 80 per cent, used dags to pack the betel leaves. Only 3 respondents, 5 per cent, packed betel leaves in both dags and Karandi.

### **4.3 Cost of Packing Materials**

Scientific methods attracted customers for the immediate sale. Scientific packing sustained the freshness and maintained the quality of betelvine leaves. Packing protected all leaves without any damages to dag in transit. Loading and unloading was also handled by assistants with proper packing. Such attractive and appreciable packing inspired confidence. Customers realised the quality of leaves on seeing the quality of the package. Various procedures were followed for the systematic packing of betel leaves. The Bamboo basket locally known as Karandi was popular in pan-shop customers. It contained 3000 betel Leaves. The Bamboo basket was properly kitted to safeguard betel leaves. One more package was known as Dappa. It contained 6000 leaves. *Dag* packing was also popular which contained 12000 betel leaves. For distance carriage, dappa and dag packages were felt as the most suitable. For all the varieties of packing the various types materials were felt needed. For packing of dag and dappa, locally available materials were mainly used. Local mulberry branches were used for making rings which were applied at the bottom and top of dag and dappa. Sugarcane leaves were also used before arranging the betel leaves in the dag and dappa. Banana fibers were also used for the external portion of dag and dappa for the safe transportation. All the betel leaves were properly arranged to absorb more quantity of leaves. To produce a suitable shape and size of the dag, string and plastic fibers were used for their strong trying. How much precautions were taken for production, equal precautions were taken for packing of betel leaves. For the composition of 428 dags in a year, 28 kg of string and plastic fibers were used. Average rate per kg of string and plastic fibers Rs.30 was charged. The totals cost of packing materials amounted to Rs. 840.

## **5. Conclusion and Suggestions**

### **5.1 Conclusion**

1. All betelvine cultivators were punctual in packing of betelvine leaves in containers properly.
2. Sugarcane leaves were known as very important packing materials.
3. The betelvines were planted according to two side plantation of bed method which produced more betelvine leaves than one side plantation of bed method. On the other hand, betelvines were planted according to one side plantation of bed method produced better quality for marketing as compared to betel vines planted by two side plantation bed method
4. The betelvine cultivators generally put the betelvine leaves in dags which were prepared by the locally available materials.
5. Betelvine cultivation required special skills, knowledge and careful attitude. Daily observation and supervision of betelvine garden was felt a most essential element regarding humidity control, harvesting, training, pest control, etc.
6. The analysis of price spread of betelvine leaves indicated that *fapada* leaves gave maximum share of income to the respondents in consumer's price.

### **5.2 Suggestions**

1. Scientific packing sustained the freshness and maintained the quality of betelvine leaves. So use most appropriate method of packing of betel leaves.
2. *Fapada* leaves fetch high price as compared to *kalli* and *hakkal* leaves. Betelvine cultivators are required to give more attention to produce maximum quantity with improved quality and market oriented *fapada* leaves.
3. There should be necessary to take proper care for not to pluck betel leaves within seven days when fungicides and pesticides were spread out.
4. After packing of betel leaves in dag, dappa and karandi it is required to put it for five minutes in water tank to cool the leaves.
5. Use of banana fiber is most appropriate material for packing of betel leaves because it maintains cool temperature to betel leaves.

### **References:**

- B. J. P. Chaurasia, Betelvine Cultivation and Management of Diseases, Scientific, Jodhapur, 2001.*  
*Maiti Satyabrata Ed. S. Nagrajan, The Betelvine Indian Institute of Horticultural Research, Bangalore, 1989.*  
*Balasubrahmanyam V. R. and Chaurasia, Irrigating the Right Way Betelvine Plantations, India Horticulture, 1992.*

- Rahudkar V. B. Panmala (Marathi Edition), Continental Prakashan, Vijaya Nagar, Pune, 1992.*
- Vikas Singal, Handbook of Indian Agricultural, Vikas Publishing House Pvt. Ltd., New Delhi 1995: P 494-495.*
- Verma V. A Textbook of Economic Botany, Emkay Publications, Delhi, 1989 : P278-279.*
- Kothari C. R. Research Methodology, Wiley Eastern Limited, New Delhi, 1992.*
- Devendra Thakur, Role of Agriculture in Economic Development, Deep and Deep Publications, New Delhi, 1993.*
- Devendra Thakur, Marketing Principles and Techniques, Deep and Deep Publications, New Delhi, 1993.*
- Madane N. P. and Nakat R. V., Research Papers "Betelvine Cultivation in Maharashtra", National Symposium on Betelvine Production Technology, 1993: 3-6.*