Vol. 4 · January 2010 · ISSN 20123981
doi: http://dx.doi.org/10.7719/jpair.v4i1.108

Species Diversity, Density and Diameter of Different Bamboo Species in Maasin, Iloilo, Central Philippines

JOSELITO TRANDIO P. MENDOZA
jtmendoza_123@hotmail.com
Western Visayas College of Science and Technology
Ilo-ilo City, Philippines

Abstract - Maasin is known as the bamboo center in the province of Iloilo. The annual "Tultugan" festival which highlights the central role played by the bamboo plant in the lives of the people is a unique celebration in the municipality. The bamboo industry is one of the main sources of livelihood and income to its local folks and residents. However, baseline information on the various bamboo species, its density and diameter is lacking. Hence the need to establish the data on this area is of paramount importance. This study used survey method, quadrat sampling and actual measurement on the different variables such as species diversity, density and diameter respectively. The results of the study showed that there are fifteen (14) species of bamboo belonging to five (5) genera that have been found. Out of the species identified thirteen exhibits erect growth habit and two species are considered climbing bamboos. Most of the species were introduced in the locality but *Dinochloa sp.* and *Schizotachy*um as climbing species are endemic to the

place. Of the given five commonly found erect bamboo species, *Bambusa vulgaris* has the highest density per square meter. *Dendrocalamus asper* or "giant bamboo" has the biggest diameter.

Keywords - diversity, density, diameter, bamboo species

INTRODUCTION

Our country is blest with abundant natural resources. It is considered as one of the world's center of diversity of life forms. All five kingdom systems ranging from animals, fungi, bacteria, protists and plants abound in our 7,107 islands. According to Madulid (2000), there is an estimated 13,000 species of the plants so far recorded in the country. A lot more of the plant species has not been recorded or identified. Bamboo plants for example, have not been extensively studied especially in the town of Maasin, which claimed to be the bamboo capital of the country.

Bamboos belong to the grass family, Poaceae or Gramineae. It is commonly known as woody grass because its structural growth characteristics resemble those of woody plants. It has a tree-like habit. It has woody and usually hollow culms, complex rhizome and branch systems, petiolate leaf blades and prominent sheathing organs (Virtucio, 2003).

There are about 1,200 species that belong to at least 80 genera in the world. Of these, about 200 species belonging to approximately 20 genera are found in Southeast Asia. In the Philippines, there are about 70 bamboo species belonging to 18 genera. Twenty-one (21) of these are endemic and are categorized into 13 climbers and 8 erect. In Maasin, Iloilo which claimed itself to be the bamboo capital of the province in particular and of the country in general has no data on how many species of bamboo are present in the locality. This study focuses on the identification of the different bamboo species, its density and diameter. This study will provide a baseline data on this economically important resource in the municipality.

OBJECTIVES OF THE STUDY

This study pursued the following objectives: to identify the different bamboo species in the locality, to measure the density of the different bamboo species in the locality, and to determine the mean diameter of the different bamboo species in the locality.

METHODOLOGY

Survey. Survey of different bamboo species were conducted using Virtucio and Roxas (2003) book as a taxonomic guide. Thirty (36) out of fifty (50) villages which comprised 72% of the villages in the municipality were surveyed and the different bamboo species were listed. Photographs of the different species were obtained for documentation purposes.

Density. Using a 2 x 2 meter quadrat made of nylon cord, density of the major bamboo species were determined. Three quadrats for five common species were obtained and measured at 1.3 meter in height or the girth breast height.

Diameter. The diameter of the different bamboo species were measured at the girth breast height (1.3m) using a standard tape measure. Thirty samples for five common species were measured.

RESULTS AND DISCUSSION

The results of the survey showed that there are fourteen (14) species of bamboo found in the municipality of Maasin, Iloilo. It belongs to five genera namely; Bambusa, Dendrocalamus, Schizotachyum, Shibataea and Dinochloa. Thirteen (13) species have erect growth habit while two (2) are considered climbing bamboos.

Table 1. Diversity of bamboo species in the locality.

Scientific Name	Common Name	Habit
1. Bambusa blumeana	Kawayan tinik	Erect
2. Bambusa vulgaris	Borirao	Erect
3. Bambusa vulgaris striata	Yellow bamboo	Erect
4. Bambusa sp.	Dalusan	Erect
5. Bambusa multiplex	Chinese Bamboo	Erect
6. Bambusa multiplex variegata	Variegated Bamboo	Erect
7. Dendrocalamus asper	Giant Bamboo	Erect
8. Dendrocalamus merrilianus	Bayog	Erect
9. Dendrocalamus latiflorus	Botong	Erect
10.Dinochloa sp.	Balangkawayan	Climbing
11.Schizotachyum lima	Bagacay	Erect
12.Schizotachyum lumampao	Bolo	Erect
13.Shizotachyum sp.	Bulokawe	Climbing
14.Shibatea kumasaca	Japanese Bamboo	Erect

Maasin, Iloilo harbors around 20% of the total species found in the country. It is considered as diverse in terms of species composition. Bambusa blumeana dominates the group which account for 99% of the bamboo community in the town. It is a fact that the town relies mainly on the bamboo industry as its primary livelihood. B. blumeana or "kawayan tinik" serves as the raw materials to sustain the supply of the industry.

Most of the species are introduced in the country since time immemorial. But the Schizotachyum species are endemic and native to the place. Surprisingly, two climbing bamboos are found and considered as highly endemic to the town. They are Schizotachyum sp or "bulokawe" and Dinochloa sp. or "balangkawayan".

Table 2. Density of five commonly found erect bamboos

Bamboo Species	Mean Density (culms/m2)
1. Bambusa blumeana	35
2. Bambusa vulgaris	67
3. Bambusa sp.	42
4. Dendrocalamus latiflorus	39
5. Dendrocalamus asper	17

Table 2 shows the mean density of the commonly found erect bamboos. Based on the table, Bambusa vulgaris is the densest of the given species (67culms/square meter). Given that the culms are small subsequently the density is also the highest. Five (5) species were only considered since they are the only bamboos with consistently larger clumps and the viability of the sampling method can be applied. Other species were not considered since their clumps are too small and their distribution is sporadic. Most of them have not occupied an area of more than one square meter. Hence, the density computation could not be obtained or measured.

Table 3. Diameter of five commonly found erect bamboos

Bamboo Species	Mean Diameter at girth breast height (cm)
1.Bambusa blumeana	29.85
2.Bambusa vulgaris	23.56
3.Bambusa sp.	25.76
4.Dendrocalamus latiflorus	28.01
5. Dendrocalamus asper	54.65

Table 3, shows the mean diameter of five commonly found species of bamboos found in the locality. Dendrocalamus or "giant bamboo" has the biggest mean diameter of the samples (54.65 cm). This species has great potential for wide cultivation in order to augment the much needed supply of the market.

CONCLUSIONS

Fourteen (14) species of bamboo belonging to five (5) genera were found during the conduct of the study. Out of the species identified, thirteen exhibits erect growth habit and two species are considered climbing bamboos. Most of the species were introduced in the locality but *Dinochloa sp.* and *Schizotachyum* as climbing species, are endemic to the place.

Of the given five commonly found erect bamboo species, *Bambusa vulgaris* has the highest density per square meter. *Dendrocalamus asper* or "giant bamboo" has the biggest diameter.

RECOMMENDATIONS

Based on the results of the study, the following recommendations are put forwar: An intensive survey on the different species must be conducted. The total areas for each species must be determined in order to have baseline information for different purposes especially on economic valuation.

Density and diameter of most species were not determined for lack of available samples. An intensive plantation of the different species must be made and a bambusetum in the municipality must be established.

LITERATURE CITED

Bumarlong, A.
1995 Bamboo Production Research. Forest Research Institute, College Laguna. Pp 69-80.

Madulid, I,.
2000 Dictionary of Plant Names

Virtucio, F. and Roxas, C.
2003 Bamboo Production in the Philippines.Department of Environment and Natural Resources. Ecosystems Research and Development Center.

Lantican, C, et al.
1995 Bamboo Research in Philippines. College of Forestry, University of the Philippines at Los Banos, College, Laguna, Philippines, pp.50-59.