Potential and opportunities for utilization of crown flower plants (*Calotropis gigantea*) in Dusun Bunot Desa Alue Naga Kecamatan Syiah Kuala Banda Aceh

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Abstract. The community of Dusun Bunot, Desa Alue Naga, Kecamatan Syiah Kuala, Banda Aceh Indonesia, considers the crown flower plant with the Latin name "*Calotropis gigantea*" which is known as "Bak Rubee" as weeds. These plants spread from the coast, garden fields, to the road, flourishing around 80% on vacant land. This study aims to determine the potential and utilization of crown flower (*Calotropis gigantea*) in Dusun Bunot. This study used a survey method with closed questionnaires totaling 6 questions studied on 10 respondents or around 15% of the number of family heads. The data obtained were analyzed descriptively and displayed in the form of table data with pie charts. The results showed that as many as 100% of respondents knew of this plant, as many as 80% of respondents knew there was a benefit, as much as 60% of respondents said that there were parts of plants that were liked by goats, although 70% of respondents knew the benefits of drugs in plant parts, but as much as 100% stated that the existence of this plant was felt as a pest, then the rate of growth of the growth around 7 days after cutting the base was able to grow again, so 100% of respondents answered the growth of crown flower fast category. In conclusion, crown flower is very potential and useful as a medicine and has the potential to be used as an additional source of income for residents of Dusun Bunot.

1. Introduction

Everything that God creates is definitely not in vain but there was definitely a benefit [1]. Likewise with crown flower plants, thrives up to almost 80% of land filled with empty land or coconut plantations around Dusun Bunot, Desa Alue Naga, Kecamatan Syiah Kuala, Banda Aceh Indonesia. The spread of this plant was more evenly distributed around the dusun after the Tsunami disaster struck Aceh in 2004. Dusun Bunot, located on the shore of Alue Naga with the majority of the population's work, is fishermen, they recognizing crown flower as "Bak Rubee". This plant was a plant with stands of 1 to 6 m, and grows as a pioneer plant that can grow on marginal land [2]. The crown flower can be seen in Figure 1.
Furthermore, based on literature studies on several previous studies there have been studies on the
antimicrobial potential of crown flower plants [3, 4]. This allows for the possibility that crown flower
leaves have the potential to be used as an antimicrobial or supplementary feed for livestock. Although
based on observations of the existence of many crown flower plants, which is about 80% of them fill
the empty land around the settlement, the utilization was not maximal. Therefore, we were very
interested in conducting this research with the aim of finding out the potential and utilization of crown
flower (Calotropis gigantea) in Dusun Bunot. Similar research has never been carried out so the
results of this study will be the basis for further research in Dusun Bunot.

2. Material and Methods
The study was conducted in Dusun Bunot, Desa Alue Naga, Kecamatan Syiah Kuala, Banda Aceh
Indonesia. This study used the object of crown flower plants (Calotropis gigantea) as a matter of
tracing to be known and packaged in a closed questionnaire. The questionnaire consisted of 6 closed
questions, involving 10 respondents, which is about 15% of the total household head. The total head of
the Dusun Bunot family were around 67 family heads.

This study used a survey method. The survey was conducted by conducting interviews directly
with residents to find out the potential and utilization of research objects. The core questions given
were related to the objectives to be obtained which were primary data can be seen in Table 1. Additional
questions in the form of names and work data are used as secondary data that supports this
research. Furthermore, the data obtained were analyzed descriptively.
Table 1. Questions with closed questionnaires asked to respondents

| No | Question                                                                 | Answer       |
|----|--------------------------------------------------------------------------|--------------|
| 1  | Do you know that the plant is crown flower?                              | Know, Not clear, Don't know |
| 2  | Are they beneficial for you?                                             | Yes, Not clear, No |
| 3  | Are thieves favored by livestock?                                        | Yes, Not clear, No |
| 4  | Do crown flower plants become bushes for the community?                  | Yes, Not clear, No |
| 5  | Are there parts of crown flower that can be used as medicine?            | Yes, Not clear, No |
| 6  | According to you, was the growth of crown flower fast?                   | Fast, Slow, Not clear |

3. Result and Discussion

Through the questionnaire it was known that as many as 100% of respondents know crown flower plants and know plants with the name "Bak Rubee". The potential benefits of crown flower plants were answered 80% was known to have benefits and the rest answer less know and there are no benefits of 10% each. The potential and benefits of crown flower plants as animal feed were answered by respondents as much as 60% answered favored, 30% answered with less choice and 10% answered that livestock did not like. On the next question about the potential of plants that become pests for the community as much as 100% of respondents answered yes. Recognition of respondents to whether there were parts of crown flower plants that can be used as medicine, respondents who answered there were as many as 70%, the rest answered that they did not know. Finally, how about the growth of crown flower, the respondents answered their growth as fast as 100%. It was clearer the reader can see the picture of the research results can be seen in the form of a pie chart in Figure 2. The figure illustrates the percentage of the survey results.

The results showed that 80% of respondents knew the benefits as drug, then strengthened with data 70% of respondents knew that plant parts that could be used as medicine were the part of the gum crown flower used as an ingredient that made it easier to remove prickly thorns. The study used a 0.01 ml/ml latex resin useful as a natural pesticide for golden snails [5], can heal wounds faster [6]. Long ago gum crown flower was used as a poison in the arrows, had biocidal activity, and was used as a rubber-making material [2]. The crown flower plant is known to be about 60% of respondents knowing that there were animals that want to eat parts of the plant even though not too much on the leaves and flowers, because if too much will cause the goat's mouth to be irritated. The results of observations of parts of plants eaten by goats can be seen in Figure 3.
Figure 2. Results of the survey through a closed questionnaire.
Furthermore, through an open-ended interview, it was also known that for almost 2 months, the community had used the ash from the crown flower stem which had the potential to be exported abroad with a selling price of Rp.12,000 - Rp.15,000 / kg. The process and yield of stem ash can be seen in Figure 4. The community was asked to make the ash from the stem of the crown flower plant burned without being mixed with other fuels such as plastic, oil, paper and wood with nail material, but the respondents did not know the benefits of the crown flower stem ash.

**Figure 4.** The process of burning the stem into ash

**4. Conclusion**
In conclusion, crown flower plants was very potential in Dusun Bunot and have many benefits including antimicrobial, medicinal benefits and the potential to be used as an additional source of income for the population of Dusun Bunot through the process of burning stems into ash.

**Acknowledgment**
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