



EFFECT OF *CHROMOLAENA ODORATA* (L) AN INVASIVE ALIEN SPECIES ON THE RED PEST DISEASE OF *ANGUILLA ANGUILLA*

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ABSTRACT

Chromolaena odorata (L.) commonly known as bitter bush is found throughout Kerala which is weed shrub native to South and Central America. *C. Odorata* (L.) belongs to the phylum magnoliophyta of class magnoliatae, order asterales and family asteraceae. Studies have revealed several medicinal properties of this plant. In this study the medicinal property of *C. Odorata* (L.) was made use to treat the fresh water eel *Anguilla anguilla* affected by red pest disease, pests *Rubra anguillarum*. From the present study it had become clear that the *C.odorata* (L.) is an effective medicine on aquatic vertebrates.

INTRODUCTION

Chromolaena odorata (L.) (R. King and H. Robinson),(fig-1) an exotic dicotyledonous shrub, commonly known as bitter bush is found throughout Kerala which is weed shrub native to South and central America. *C. Odorata* (L.) belongs to the phylum magnoliophyta of class magnoliatae, order asterales and family asteraceae. The plant possess glandular hairy leaves 8 to 11 cm long and 5cm to 8cm broad. The leaves are ovate with apex acute and base cuneate. It has bisexual flowers which is white and tubular. This plant was considered to be a harmful plant as it suppresses young plantations, agrivulture crops and smothers vegetation as it allelopathic potentialities and growth inhibitors [3]. But studies have revealed several medicinal properties of this plant. The anti inflammatory activity and wound healing properties in human beings was studied by several scientists [4,5]. The medicinal values of the plant is due to the presence of alkaloids, tannins, flavonoids and other phenolic compounds [6]. In this study the medicinal property of *C. Odorata* (L.) was made use to treat the fresh water eel *Anguilla anguilla* affected by

red pest disease, pests *Rubra anguillarum*. This is a very serious epidermal disease, caused by a comma shaped bacterium, named *vibrio anguillarum*. This pest attacks those eels which migrate from fresh water to brackish water and in to sea for their spawning. The disease is symptomised by extensive blood colours areas on the skin, especially near the fins. Red boil like ulcers appear, which will be open sores on the body surface which are typically pink red colours with white boarder of dead skim tissues.

METHODOLOGY

The fish was collected from the brackish water system of Kollam district, the Ashtamudi lake. The eels was collected for aquaculture studies and it was observe that most of the eels collected was affected from red sores over the body especially on to the fin side along the caudal region. Three of these affected fished were separated from the set and treated with medicinal administration. The separated fishes were kept in a plastic tub and extract *C.odoranta* leaves was added on to it once on a day. 100gms of leaf extract was used at a time and the study was conducted for a period of two weeks as the result was visible by this two weeks.(Fig 2,3 and 4).

RESULTS

Most of the sores on to the body of the fish was open. So at the beginning of the study the length of the

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sore was measured and it was 1.5cm long (Fig-5). The sore was observed and measured every day. For the first and second day the sore was of same size. From the third day onwards the size of the sore started a length of 1.3 cm long. For the fourth and fifth day it showed a reduction in length

of 4mm and the length was of 1cm (Fig-6). On the 8th day of the study the sore showed visually identifiable variation and towards the end of the second week the sore was almost completely cured.

Fig 1. *Chromolaena odorata* (L.)



Fig 2a. *Chromolaena odorata* (L.) extract process



Fig 3. *Chromolaena odorata* (L.) extract process



Fig 4. *Chromolaena odorata* (L.) extract applied in sore



Fig 5. Length of the sore



Fig 6. Reduction of Length of the sore after treatment



DISCUSSION

From the present study it had become clear that the *C.odorata* (L.) is an effective medicine on aquatic vertebrate. Several studies on the medicinal properties of *C. Odoranta* (L.) on human beings has been carried out. It is due to several factors like alkaloids, tannins, flavonoids etc. Aqueous extracts of *C. Odorata* enhances hemotactic activity and stimulated granulation tissues and re epithelisation processes.

Studies on anti-oxidant activities and total phenolic content of *Chromolaena odorata* was conducted by Rao *et al.* As these much studies has been carried out

even more medicinal properties of *C.odorata* (L.) is yet to be done.

CONCLUSION

Medicinal property of *C. Odorata* (L) in vertebrates was proved through several studies, but this is the first study to prove its medicinal effect on fishes. The result of this study focuses on the significance of further studies on the medicinal property of this plant for the wellbeing of the aquatic inhabitants. Till today these plants are considered to be of no use, but this study will be a new avenue for the exploitation of this weed plants in the field of medical science.

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