

Social outreach programme on the awareness of medicinal properties of
phyllanthus niruri L. and *chenopodium album L.*

A social outreach programme work submitted as a partial fulfillment of requirement of the



Master of Science in botany

OF


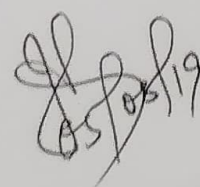
The University of Burdwan (2017-2019)

Submitted by Anita Mondal

ROLL-BUR BOT 2017 NO-006

REGISTRATION NO-014784 of 2013-2014

UGC Center for Advance Study, Department of Botany, the University of Burdwan

PLACE OF INTERACTION WITH THE LOCAL FARMERS

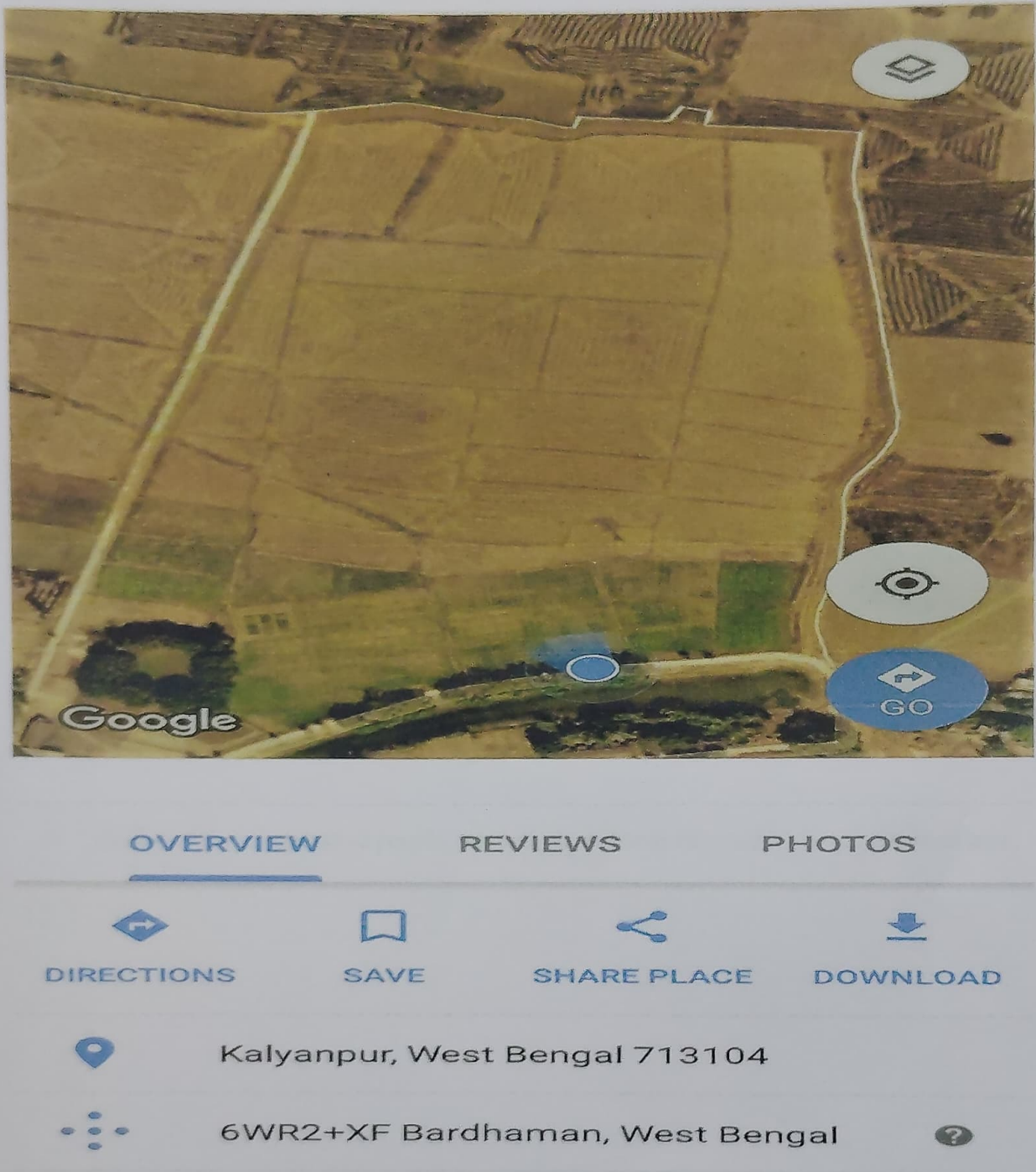





Figure 5 : EXACT LOCATION OF THE PLACE ON GOOGLE MAPS

১৭/০৫/১৮

প্রশ্ন-১-কল্যাণপুর, পূর্ব বর্জিয়া
 -মিঃ মঃ - ৭৬৬০৪

| ক্রমিক নং | নাম | বাক্য |
|-----------|-------------------------|--|
| ১ | তালিকা তৈরি | তালিকা তৈরি |
| ২ | স্বকলিক গোবিন্দ |  |
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| ৪ | দীপু সাত্তা | দীপু সাত্তা |
| ৫ | আলাল হাঙ্গরা |  |
| ৬ | বাসুদেব মন্ডল | বাসুদেব মন্ডল |
| ৭ | যশী বাগী | যশী বাগী |
| ৮ | সদা বাগী | সদা বাগী |
| ৯ | গীতা গানি |  |
| ১০ | বল্লু গানি | বল্লু গানি |
| ১১ | গোলাপ গানি | গোলাপ গানি |

INTRODUCTION AND OBJECTIVES OF THE SOCIAL OUTREACH PROGRAMME

Medicinal plants have been used since ancient times for the treatment and management of diabetic mellitus (DM) and several degradative diseases in traditional medicine systems of many cultures throughout the world. Recently, the World Health Organization recommended the use medicinal plants for the management of these hazardous diseases and further encourage the expansion of the frontiers of scientific evaluation of the hypoglycemic properties along with anti-inflammatory, anti-lipid peroxydation several antioxidant properties of diverse plant species.

In India, several medicinal plants are used as the traditional medical treatment but in last few decades, there has been exponential growth in the field and herbal medicine. It is getting popularized and developing for its natural origin and lesser side-effect. The leaves and other parts of some underutilized plants have the strong antioxidant properties and has been recognized for several health benefits such as prevention of growth and reduction of size of bladder and urethral compliance, allevation of diabetes by promoting hypo glycemic activity, lowering the level of gastric, breast, lung and colorectal cancer and several inflammatory symptoms provide by degradative diseases.

Phyllanthus niruri & *Chenopodium album*, both these plants are having medicinal properties but they are underutilized. Both these plants can be consumed as vegetables which are enriched with several medicinal properties.

The reasons behind choosing these two plants

There are several reasons to choose these two plants, *Phyllanthus niruri* & *Chenopodium album*, the reasons are as follows:

A. MEDICINAL PROPERTIES:

The important medicinal properties presents in both of these plants are calculated below:

Medicinal properties of *Phyllanthus niruri*

1. **Anti-Diabetic Activity:** An alcoholic extract of *Phyllanthus niruri* was found to reduce significantly the blood sugar in normal rats and in alloxan diabetes rats. In normal rats,

administration of *Phyllanthus niruri* 200mg/kg body weight reduced the blood sugar by 34.5

2. percent and to 47.4 percent at the concentration of 1000mg/kg by weight at 1 hour. However at 6th hour, values are almost similar to normal value. Continuous administration of the drug produced significant reduction in normal blood sugar in rats, which on 15th day was also found to reduce the blood sugar in alloxan diabetic rats. The results indicate potential antidiabetic action of *Phyllanthus niruri*.

2. Anti-spasmodic activity: Research done in Brazil at the Federal University of Santa Catarina in 1984 on *Phyllanthus niruri* revealed an alkaloid (phyllanthoside) in the leaves and stem with strong antispasmodic activity. It served as a relaxing agent for smooth muscles and they concluded that its spasmolytic action probably accounted for the efficacy of *Phyllanthus niruri* in expelling stones.

3. Hepatoprotective Effect: Hepatitis B is one of the major diseases inflicting human population. *Phyllanthus niruri* L. have been reported to be effective against Hepatitis B and other viral infections. A study reports quantitative determination of the anti-viral effect of this herb in well-defined in vitro systems.

4. Antioxidant activity: *Phyllanthus niruri* showed significant improvement of body antioxidant activities in both insulin and non-insulin dependent diabetes mellitus animals. A protein isolated from *Phyllanthus niruri* has also been showed to act as radical scavenger, thereby scavenging the free hepatoprotective effect of *Phyllanthus niruri* may be associated with its action at cellular level by reducing oxidative stress as a radical scavenger and promoting antioxidative defense mechanism of the cells. In vitro antioxidant assay showed that the plant is an effective radical scavenger.

MEDICINAL PROPERTIES OF *Chenopodium album*:

1. Antioxidant and free radical scavenging activity: Free radicals such as superoxide anions, hydrogen peroxide and hydroxyl nitric oxide radicals cause degenerative human disease such as cancer, heart disease and cerebrovascular components delay or inhibit lipid peroxidation by inhibiting the initiation or propagation of oxidizing chain reactions and are also involved in scavenging free radicals.

2. Assessment of Hypolipidemic potential of *Chenopodium album*: Hyperlipidemia, including Hypercholesterolemia and Hypertriglyceridemia, is major risk factor for the development of Cardiovascular disease. Consumption of *Chenopodium album* Linn. Can be linked to a reduction in the risk of Cardiovascular disease.

3. Sperm Immobilizing activity: *Chenopodium album* possesses appreciable spermicidal potential which may be explored as an effector constitute of vaginal contraceptive.

4. Inhibition of mineralization of urinary stone: The inhibition efficacy was studied increased intake of fruits juice and seed extract of *Chenopodium album* would be helpful in urinary stone prophylaxis.

5. Anti-inflammatory activity: It has been established that anti-inflammatory activities of essential oils are attributable to the presence of substituent such as; limonene, linalool, linalyl acetate and α -pinene. The result revealed that the anti-inflammatory action of the oil is concentration dependent. Hence, the percentage reduction in the ear edema increases with increase in concentration of the oil. Furthermore, the oil caused significant reduction ($p < 0.05$) in the ear edema except at 0.625 mg concentration.

FUNCTIONAL FOOD PROPERTY OF *chenopodium album*:

In India, the plant is popularly called Bathua and found abundantly in the winter season. The leaves and young shoots may be eaten as a leaf vegetable. *Chenopodium album* have some nutritious and healthy addition to the diet. etc.

The leaves and young shoots of this plant are used in dishes such as soups, curries, and paratha. *Chenopodium album* used to treat various symptoms attributable to nutritional deficiencies. It's also said to have sedative and refrigerant properties, and people have used the poultice leaves to soothe burns.

Nutritional analysis In the present study, the potential benefits were shown by nutritional attributes of dried bathua . Moisture content and dry matter analysis, reporting during nutritional

analysis is very important because it directly affects the nutritional content of vegetable. The moisture content was quite low (5.06%) which may be advantageous in view of increasing the sample's shelf life. Bathua was found to be rich in carbohydrates (40.84%). There was an appreciable amount of protein (28.69 % by weight) making it a good source of protein, while its fiber content is less. There is evidence that dietary fiber has a number of beneficial effects related to its indigestibility in the small intestine . It has low amount of fat (4.41%) which makes it an ideal diet for overweight people. The energy value of bathua was calculated and the value obtained was 317.81 kcal. It was also found to contain potassium, sodium, calcium, magnesium, iron and zinc in high amounts followed by many other beneficial nutrients.

B. Functional food properties of *phyllanthus niruri*

Like *chenopodium album*, *phyllanthus niruri* have also several important food property. Generally, in India the plant are commonly called bhumi amla and found abundantly in all time. Thus, taking into account the results obtained in this present work where the aqueous extracts of *P. niruri* had antiproliferative and mutagenic action, the few studies done to date on the toxic effects of this plant at the cellular level, recognizing that common sense often considers medicinal plants free from adverse reactions to the body often leading to their indiscriminate use, and that the *P. niruri* plant is easily found in medicinal plant nurseries, herbalists, natural food stores and farmers markets, it is highly relevant to carry out work similar to this one with *A. cepa*, with other test-systems, exposure times and different treatments to thereby establish, with propriety, what the ideal and safe concentrations are for the use of this plant.

OUTREACH PROGRAMME REPORT

- Social outreach programme was done at 26/07/19 at vill- kalyanpur, Dist-East Burdwan.
- Around 7-8 Peoples were present at that time and they co-operate widely.
- After a speech on the medicinal as well as functional properties of these plants was discussed and tried to pointout the importance of the plants.
- They did a great interation and shown their interest to know the preventing ability of the degradative diseases and want to know if there is another way to solve these hazardous diseases.
- I also have distributed some Xerox copies of handwrite on medicinal and functional properties of phyllanthus niruri & chenopodium album among them.
- The list of the co-operative people, one sample of handwrite certificate are attached here.

Phyllanthus niruri (ছুই আমলা) সহ

Chenopodium album (বেথ জাক)

জুলাই ও উপভোগ

বর্তমান সমাজে জীবন যাত্রার প্রত্যেক দিনের পর দিন জটিল চলেছে, এই সমাজে জীবন যাত্রার হাত থেকে রক্ষা পেতে পারিলে কামনা নৈশপুলের ডাঙে ডাঙে, অস্বস্তিতে আত্মপ্রশ্নও বিজ্ঞানসত্তা প্রসঙ্গত।

কিছু কৃষিজাত দ্রব্য আছে, যেগুলি স্বাস্থ্যকর হলে বিজ্ঞান উপস্থিত, যিহা - একইসকল দ্রব্য কিছু কিছু - এলু (আমদ্রা বীজ সহ) আছে, মায়া বিজ্ঞান জীবনযাত্রা (মেমোর - ক্যান্ডার, ডায়াগনোইস, গিলবার্টের অমসুহ) - নিম্নতম স্তরে সুস্বাদু দুধিকা লেবু।

এছাড়া আছে - সুই-ডাউ-সাদ - সুই আমলা সহ বেথজাক - উল্লেখযোগ্য। মাংস পাতার বিজ্ঞান পরিমাণে অ্যান্টিঅক্সিডেন্ট, অ্যান্টি-অক্সিডেন্ট সহ অ্যান্টিবায়োটিক - সুই-ডাউ-সাদ আছে। মা-অসুস্থ হলে সুই-অসুস্থ জীবনযাত্রা দুলাকে হঠাৎ করে পারে,

সুডাউ-সুই-ডাউ-সাদ - গিলবার্টের অমসুহ সহ ডাউ-সাদ সহ সুই-ডাউ-সাদ সহ অসুস্থ। সহ মসুহ সুস্বাদু, তাই অসুস্থ কৃষিজাত দ্রব্য পাছাপাছি সুই-ডাউ-সাদ সহ - Phyllanthus niruri (ছুই আমলা)

সহ Chenopodium album (বেথজাক) চক চাক সহ মেতে পারে।