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RESEARCH ARTICLE

Taxonomic Study of Leafy Vegetables at Santahar Pouroshova of District Bogra, Bangladesh with Emphasis on Medicinal Plants

A.H.M. Mahbubur Rahman* Sazeda Akter, Rony Rani, A.K.M. Rafiul Islam

Plant Taxonomy Laboratory, Department of Botany, University of Rajshahi, Rajshahi-6205, Bangladesh

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*Corresponding Author

**A.H.M. Mahbubur
Rahman**

Abstract

Taxonomic investigation of the leafy vegetables growing throughout the Santahar Pouroshova was carried out during July 2013 to March 2015. A total of 24 species belonging to 22 genera and 16 families were collected and identified. For each species botanical name, local name, taxonomic description, habit, habitat, flowering season, flower color, status of occurrence, specimen examined and medicinal uses have been mentioned. Twenty four (24) medicinal plants have been documented with their uses for the cure of more than 59 diseases. Documentation of traditional knowledge is the basic and essential templates for new drug designing.

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INTRODUCTION

Leafy vegetables are referred to leaves of any plants used as vegetables, sometimes accompanied by tender petioles and shoots. They constitute a major portion of our diet and play an important part in alleviating malnutrition. Leafy vegetables are important protective foods and highly beneficial for the maintenance of health and prevention of diseases as they contain valuable food ingredients. Usually they have no or very little poisonous alkaloids and do not cause any gastrological disturbance when they are consumed as food. The daily intake of at least 100 g of fresh leafy vegetables is recommended for the adult by nutrition experts. It has been estimated that 100 g of tropical leafy vegetables can provide 60-140 mg of ascorbic acid, 100 mg of folic acid, 4-7 mg of iron and 200-400 mg of calcium. Traditional leafy vegetables are said to be an invaluable substitute for meat and therefore form important part of daily diets of rural communities in particular. Leafy vegetables also contain antioxidants which offer protection against many chronic diseases including heart disease and certain types of cancer (Rashid, 1999).

In Bangladesh, people have a long heritage of taking leafy vegetables. However, very little attempt has been made to study the leafy vegetables of Bangladesh although they constitute a large proportion of the daily diet of the rural dweller of the country. Despite the importance of leafy vegetables in the present day human lives, no systematic work has been carried out in Bangladesh to identify and document the plant species. In view of potential beneficial attributes of leafy vegetables, there is a need to explore, identify and document the leafy vegetables of the country. Leafy green vegetables have more nutrition per calorie than any other food. Greens make up significant source vitamins A, C, E and K as well as several B vitamins. They are rich sources of minerals such as calcium, magnesium, iron and potassium. They are rich in fiber, extremely low in fat and carbohydrates and provide an excellent source of protein (Rashid, 1999).

The importance of studying local floristic diversity and medicinal uses has been realized and carried out in Bangladesh by Anisuzzaman et al (2007), Ara et al (2011, 2013), Rahman et al (2006), Rahman et al (2007a, 2007b, 2007c) Rahman et al (2008a, 2008b, 2008c, 2008d), Rahman et al (2011, 2013a, 2013b, 2013c, 2013d, 2013e,

2013f), Rahman and Akter (2013), Rahman and Khanom (2013), Rahman (2013a, 2013b, 2013c, 2013d, 2013e, 2013f, 2013g, 2013h, 2013i, 2013j, 2013k, 2013l, 2013m, 2013n, 2013o), Rahman (2014), Rahman and Debnath (2014a, 2014b), Rahman and Keya (2014a, 2014b), Rahman and Gulshana (2014), Rahman and Rahman (2014), Rahman and Rogonigondha (2014), Rahman et al (2014a, 2014b, 2014c, 2014d), Uddin and Rahman (1999), Rahman (2015) and Uddin et al (2014).

The objectives of the present study are three-heads : i) to make an inventory, and identify the leafy vegetables, ii) to document the leafy vegetables including wild and cultivated ones, and iii) to carry out a detailed systematic study on the leafy vegetables in the study area.

Materials and Methods

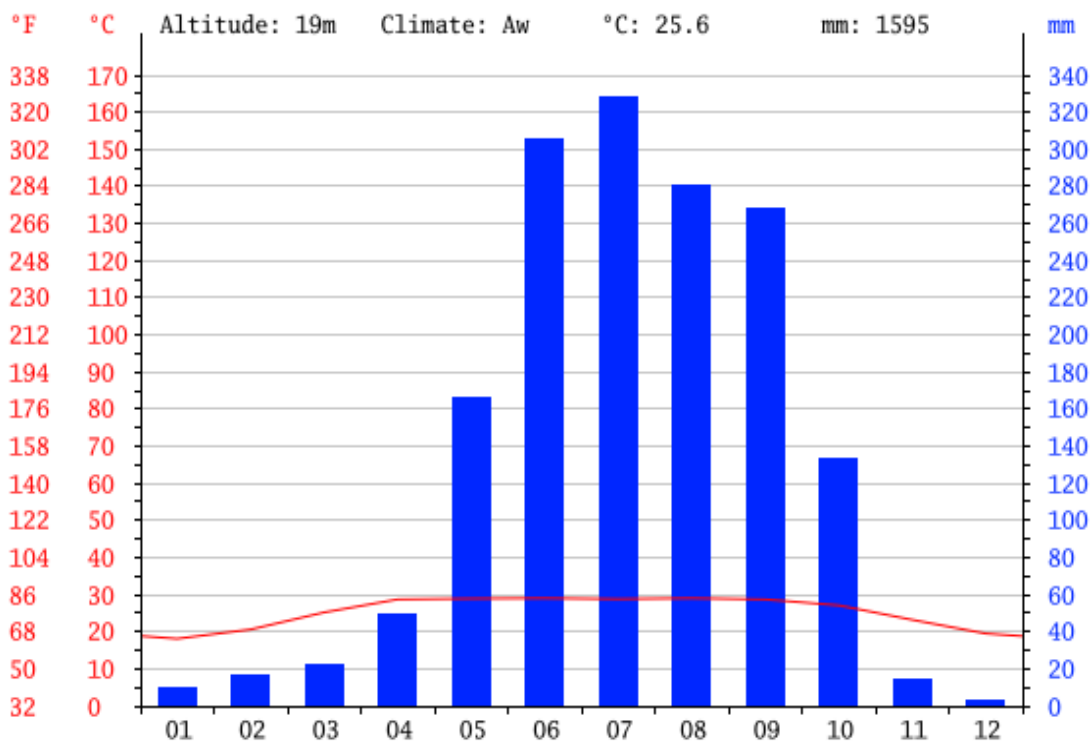
Taxonomic investigation on the leafy vegetables growing throughout the santahar pouroshova, Bogra District was carried out. A total of 24 species belonging to 22 genera and 16 families were collected and identified. The collected specimens were identified studding related taxonomic books and book least from the library of Rajshahi University. The major collection materials were identified and described up to species with the help of Hooker (1877), Ahmed et al (2009), Pain (1903) and Kirtikar and Basu (1987). For the current name and up to date nomenclature Huq (1986), Pasha and Uddin (2013) were consulted.

STUDY AREA

The study area conducted at Santahar purosova, Bogra District. The study area is bounded by Adamdighi in east, Naogaon in west, Chatingram in north and Chatni in south.Type of land of this study area such as fallow land, cultivated land, grazing and nograzing land. For this reason various kind of leafy vegetables is present in the study area.

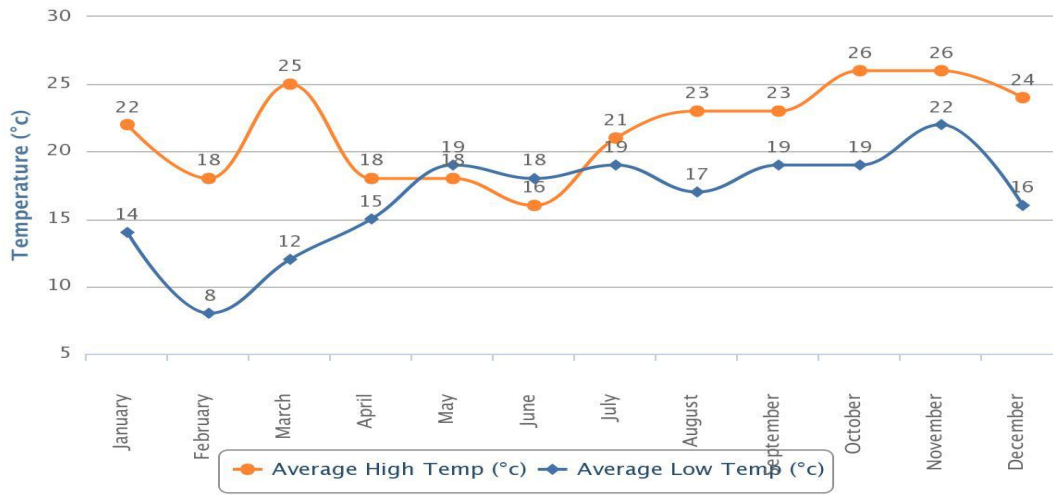
Geographical position: Santahar is located at N24°48'32.11", E88°59'13.27". Area Elevation (average): 19m (62 feet) (Average elevation of 3"x3" (ca 90mx90m) or 30"x30" (ca 900mx900m) area in meters)

Climate: This city has a tropical climate. In winter, there is much less rainfall than in summer. This climate is considered to be Aw according to the Köppen-Geiger climate classification. The temperature here averages 25.6 °C. In a year, the average rainfall is 1595 mm.



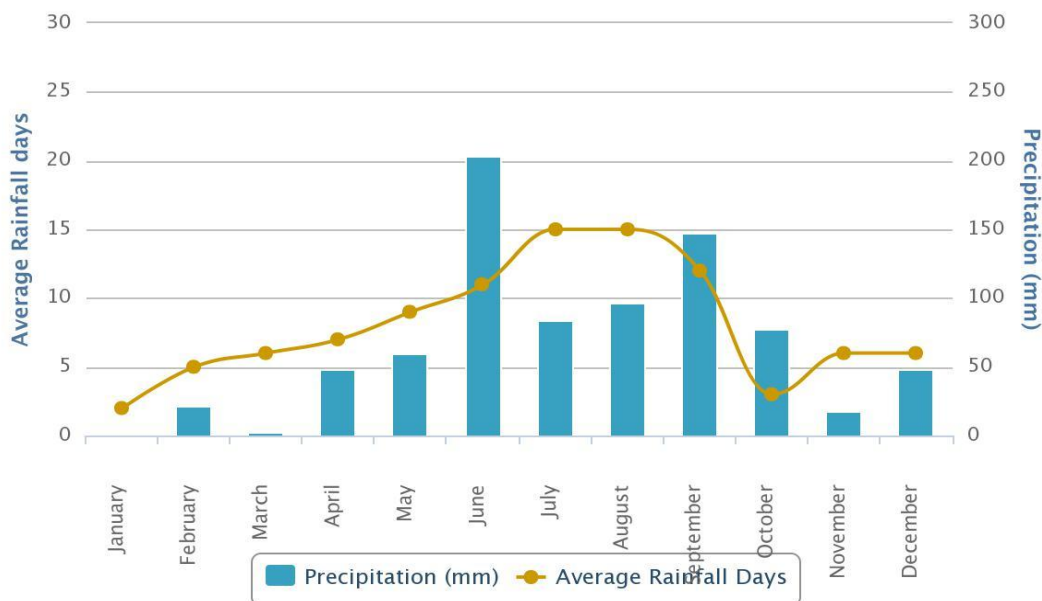
Temperature: The temperatures are highest on average in June, at around 29.0 °C. In January, the average temperature is 18.1 °C. It is the lowest average temperature of the whole year.

Average Temperature (°C) Graph for Santahar



Rainfall: The least amount of rainfall occurs in December. The average in this month is 3 mm. Most precipitation falls in July, with an average of 328 mm (BBS, 2009).

Average Rainfall (mm Graph for Santahar)



Results and Discussion

Taxonomic investigation of the leafy vegetables growing throughout the Santahar Pourosova was carried out during July 2013 to March 2015. A total of 24 species belonging to 22 genera and 16 families were collected and identified. For each species botanical name, local name, taxonomic description, habit, habitat, flowering season, flower color, status of occurrence and specimen examined have been mentioned.

By examining the plant materials collected from the study area using the identification methods and medicinal information was accumulated and described below.

1. *Alternanthera sessilis* (L.) DC.

Description: An annual herb. The stems are mostly straggling and sprawling and spread widely, sometimes as much as 6 feet (1.8 m) in length. The often stalk less leaves are alternate, oval and 0.5 to 1.5 in (13 to 38 mm) long. The

tiny clusters of two or three flowers grow in the leaf axils. The flowers are about 0.1 inches (2.5 mm) long, pink, green or dull white (**Figure no. G**).

Local Name: Bou shohagi shak

Family: Amaranthaceae

Habit: Herb

Habitat: A weed of waste ground and roadsides

Flowering color: Dull white

Flowering season: May to October

Status of occurrence: Common

Specimen examined: SA 07, Santahar, Bogra, 01. 04. 2014.

2. *Amaranthus tricolor* L.

Description: It is an annual flowering plant with deep purple flowers. It can grow from 2–3 feet in height. In Bangladesh, it has been used as a leafy vegetable. Scientific study suggests that it may inhibit calcium retention (**Figure no. E**).

Local Name: Lal shak

Family: Amaranthaceae

Habit: Herb

Habitat: A widely cultivated mesophyte plant,

Flowering color: Red

Flowering season: Throughout the year

Status of occurrence: Common

Specimen examined: SA 05, Santahar, Bogra, 28.03.2014.

3. *Amaranthus viridis* L.

Description: An annual herb with stems erect or occasionally ascending, 10-80 cm long with branched stems. Leaves are triangular-ovate to narrowly rhombic, 2-7 cm long, 1.5-5.5 cm wide, hairless. Flowers are green, in slender, paniculate spikes, in leaf axils or at the end of branches (**Figure no. F**).

Local Name: Notay shak

Family: Amaranthaceae

Habit: Herb

Habitat: A weed of waste ground and roadsides

Flowering color: Greenish

Flowering season: Throughout the year

Status of occurrence: Common

Specimen examined: SA 06, Santahar, Bogra, 28.03.2014.

4. *Alternanthera philoxeroides* (Mart.) Griseb.

Description: It is a non-woody perennial aquatic/shoreline plant. Leaves and stems vary greatly in size and shape. The horizontal stems (called stolons) may reach a length of 10 m. The leaves are opposite in pairs or whorls, with a distinctive midrib, and range in size from 5-10 cm (**Figure no. H**).

Local Name: Shanchi shak

Family: Amaranthaceae

Habit: Herb

Habitat: Stagnant or slow moving shallow water, pools, ditches and wet soil.

Flowering season: March-June

Flowering color: Dull white

Status of occurrence: Common

Specimen examined: SA 08, Santahar, Bogra, 01. 04. 2014.

5. *Basella alba* L.

Description: *Basella alba* is a fast-growing, soft-stemmed vine, reaching 10 metres (33 ft) in length. Its thick, semi-succulent, heart-shaped leaves have a mild flavour and mucilaginous texture. The stem of the cultivar *Basella alba* 'Rubra' is reddish-purple (**Figure no. D**).

Local Name: Pui shak

Family: Basellaceae

Habit: Herb
Habitat: Garden/Mesophyte
Flowering color: Greenish
Flowering season: November-March
Status of occurrence: Common
Specimen examined: SA 04, Santahar, Bogra, 28.03.2014.

6. *Boerhaavia repens* L.

Description: *Boerhaavia repens* is a perennial herb. *Boerhaaviarepensare* straight, contain white and pink flowers and also possess obconical (cone-like) glabrous (smooth) fruit (**Figure no. R**).
Local Name: Purnima shak
Family: Nyctaginaceae
Habit: Herb
Habitat: Roadside and waste land.
Flowering color: White and pink
Flowering season: Early summer to mid-fall.
Status of occurrence: Common
Specimen examined: SA 18, Santahar, Bogra, 30. 09. 2014.

7. *Benincasa hispida* (Thunb.) Cogn.

Description: The *Benincasa hispida*, also called white gourd, winter gourd, tallow gourd, Chinese preserving melon, or ash gourd, is a vine grown for its very large fruit, eaten as a vegetable when mature. It is the only member of the genus *Benincasa*. The fruit is fuzzy when young. The immature melon has thick white flesh that is sweet when eaten. By maturity, the fruit loses its hairs and develops a waxy coating, giving rise to the name wax gourd, and providing a long shelf life. The melon may grow as large as 80 cm in length (**Figure no. O**).
Local Name: Chal kumra
Family: Cucurbitaceae
Habit: Herb
Habitat: Grow well in moderately dry areas with soil containing high organic matter.
Flowering color: Yellowish
Flowering season: May-November
Status of occurrence: Common
Specimen examined: SA 13, Santahar, Bogra, 28. 08. 2014.

8. *Coccinia grandis* (L.) Voigt.

Description: A perennial, climbing herb. Stem slender, slightly woody, many branched, angular, glabrous. Tendrills filiform, glabrous, simple. Leaves entire to palmately lobed, 5-10 cm long. Flowering and fruiting March-December (**Figure no. P**).
Local Name: Telacucha shak
Habit: Herb
Family: Cucurbitaceae
Habitat: Grassland roadside
Flowering color: White
Flowering season: March-December
Status of occurrence: Common
Specimen examined: SA 14, Santahar, Bogra, 28. 08. 2014.

9. *Colocasia esculenta* (Lour.) Kunth.

Description: Rhizomes of different shapes and sizes. Leaves up to 40×24.8 cm, sprouts from rhizome, dark green above and light green beneath, triangular-ovate, sub-rounded and mucronate at apex, tip of the basal lobes rounded or sub-rounded. Petiole 0.8 -1.2 m high. Spathe up to 25 cm long. Spadix about 3/5 as long as the spathe, flowering parts up to 8 mm in diameter (**Figure no. M**).
Local Name: Kochu shak
Family: Araceae
Habit: Herb
Habitat: Aquatic plant

Flowering color: Greenish

Flowering season: Throughout the year

Status of occurrence: Common

Specimen examined: SA 15, Santahar, Bogra, 28. 08. 2014.

10. *Commelina diffusa* Burm. f.

Description: An annual herb, diffusely branched, stem creeping or sub – scan dent, up to 40 cm long or more, rooting at the nodes. Leaves 2.5 – 6.0×1.0-2.5cm, ablong-lanceolate, acuminate, sheaths prominent, surrounding the stem, glabrous, ciliate on the free margins. Flowers in leaf–opposed 2 fid cymes emerging from a spathaceous (**Figure no. N**).

Local Name: Bashpatari shak

Family: Commelinaceae

Habit: Herb

Habitat: Ground soil

Flowering color: Violet

Flowering season: June to October

Status of occurrence: Common

Specimen examined: SA 16, Santahar, Bogra, 30. 09. 2014.

11. *Corchorus capsularis* L.

Description: The plants are tall, usually annual herbs, reaching a height of 2–4 m, unbranched or with only a few side branches. The leaves are alternate, simple, lanceolate, 5–15 cm long, with an acuminate tip and a finely serrated or lobed margin. The flowers are small (2–3 cm diameter) and yellow, with five petals; the fruit is a many-seeded capsule. It thrives almost anywhere, and can be grown year-round (**Figure no. B**).

Local Name: Pat Shak

Family: Tiliaceae

Habit: Herb

Habitat: Cultivated Beds

Flowering color: Yellow

Flowering season: August

Status of occurrence: Common

Specimen examined: SA 02, Santahar, Bogra, 19.03.2014.

12. *Cucurbita maxima* Duch.

Description: An annual climbing herb. Stem cylindrical, elongate, grooved. Tendrils 2-6 fid, slightly setose leaves more or less reniform with five rounded shallow lobes, c6-19*7-30 cm. Female flowers:peduncles 5-7 cm long. Fruits large variable in shape (**Figure no. L**).

Local Name: Misti kumra

Family: Cucurbitaceae

Habit: Herb

Habitat: Open sunny areas

Flowering color: Yellowish

Flowering season: March–October

Status of occurrence: Common

Specimen examined: SA 12, Santahar, Bogra, 15. 06. 2014.

13. *Chenopodium album* L.

Description: Chenopodium album erect annual herb to 3 (but rarely above 1.2) m high. Stems ribbed, often tinged with purple or red. Leaves alternate, ovate to rhombic becoming more linear up stem, 2–8 cm long, 0.5–5 cm wide, margins entire to variously toothed, at least lower leaves with leaf stalks. Seed round, flattened with a marginal notch, brownish green to black, 1–1.3 mm wide. Seed falling enclosed within fruit (**Figure no. T**).

Local Name: Bathua shak

Family: Chenopodiaceae

Habit: Herb

Habitat: Cultivated ground, especially on rich soils and old manure heaps

Flowering color: Green

Flowering season: Between June and October

Status of occurrence: Common

Specimen examined: SA 20, Santahar, Bogra, 13. 10. 2014.

14. *Coriandrum sativum* L.

Description: Coriander sativum is a delicately branched annual that reaches a height of 2-3 ft (0.6-0.9 m) with a spread of 1-2 ft (0.3-0.6 m). It often becomes top heavy and falls over, sprawling along the ground and sending up branches like so many new plants. The lower leaves of coriander are lobed, about 1-2 in (2.5-5.1 cm) across, and look a little like Italian parsley (*Petroselinum crispum*) (**Figure no. W**).

Local Name: Dhania shak

Family: Apiaceae

Habit: Herb

Habitat: Waste places and arable land, often by the sides of rivers.

Flowering color: White or pink

Flowering season: Any time during the year.

Status of occurrence: Common

Specimen examined: SA 23, Santahar, Bogra, 24. 12. 2014.

15. *Glinus oppositifolius* (L.) DC.

Description: A small, glabrous, annual herb. Leaves small, in whorls of 2-9, linear-lanceolate to obovate, obtuse or acute. Flowers small, white, numerous in lax, corymbose, terminal cymes; peduncles and pedicels filiform. Capsules minute, subglobose (**Figure no. J**).

Local Name: Gima shak

Family: Molluginaceae

Habit: Herb

Habitat: A weed of waste ground and roadsides.

Flowering color: Dull white

Flowering season: Throughout the year

Status of occurrence: Common

Specimen examined: SA 10, Santahar, Bogra, 15. 03. 2015.

16. *Ipomoea aquatica* Forssk.

Description: *Ipomoea aquatica* grows in water or on moist soil. Its stems are 2–3 metres (7–10 ft) or more long, rooting at the nodes, and they are hollow and can float. The flowers are trumpet-shaped, 3–5 cm (1–2 in) in diameter, and usually white in colour with a mauve centre. Propagation is either by planting cuttings of the stem shoots that will root along nodes or planting the seeds from flowers that produce seed pods (**Figure no. C**).

Local Name: Kalmi Shak

Family: Convolvulaceae

Habit: Herb

Habitat: Amphibious

Flowering color: Violet

Flowering season: Late October to early April

Status of occurrence: Common

Specimen examined: SA 03, Santahar, Bogra, 19.03.2014.

17. *Lagenaria siceraria* (Molina) Standl.

Description: A large, annual, climbing herb. Stem branched, sulcate-angulate, pubescent. Tendrils filiform. Two bilateral secretory glands at the juncture of petioles and the blade distinguish this species from all other species of cucurbitaceae. Leaves ovate-cordate or reniformovate, 10-35-10-35 cm (**Figure no. K**).

Local Name: Sachi laou

Family: Cucurbitaceae

Habit: Herb.

Habitat: Sunny places and well-drained soil

Flowering color: White

Flowering season: Throughout the year. But mostly from February-May.

Status of occurrence: Common

Specimen examined: SA 11, Santahar, Bogra, 15. 06. 2014.

18. *Moringa oleifera* L.

Description: *Moringa oleifera* is a fast-growing, deciduous tree. It can reach a height of 10–12 m (32-40 ft) and the trunk can reach a diameter of 45 cm (1.5 ft). The bark has a whitish-grey colour and is surrounded by thick cork. Young shoots have purplish or greenish-white, hairy bark. The tree has an open crown of drooping, fragile branches and the leaves build up a feathery foliage of tripinnate leaves (**Figure no. X**).

Local Name: Sojina Shak

Family: Moringaceae

Habit: Herb

Habitat: Well-drained sandy or loamy soil.

Flowering color: Yellowish-white petals.

Flowering season: April and June

Status of occurrence: Common

Specimen examined: SA 24, Santahar, Bogra, 24. 02. 2015.

19. *Oxalis corniculata* L.

Description: *Oxalis corniculata*, the creeping wood sorrel, also called procumbent yellow-sorrel or sleeping beauty, resembles the common yellow wood sorrel, *Oxalis stricta*. The trifoliate leaves are subdivided into three rounded leaflets and resemble a clover in shape. The leaves have inconspicuous stipules at the base of each petiole (**Figure no. A**).

Local Name: Nindali Shak

Family: Oxalidaceae

Habit: Herb

Habitat: gardens, agricultural fields, and lawns.

Flowering color: Yellow

Flowering season: April-October

Status of occurrence: Common

Specimen examined: SA 01, Santahar, Bogra, 19.03.2014.

20. *Portulaca oleracea* L.

Description: It has smooth, reddish, mostly prostrate stems and alternate leaves clustered at stem joints and ends. The yellow flowers have five regular parts and are up to 6 mm wide. Depending upon rainfall, the flowers appear at any time during the year. The flowers open singly at the center of the leaf cluster for only a few hours on sunny mornings (**Figure no. V**)

Local Name: Nonta shak

Family: Portulacaceae

Habit: Herb

Habitat: Fields, waste ground, roadside verges, cultivated ground.

Flowering color: Yellow

Flowering season: Any time during the year

Status of occurrence: Common

Specimen examined: SA 22, Santahar, Bogra, 24. 12. 2014.

21. *Rumex vesicarius* L.

Description: An annual, pale green, glabrous herb, branched from the root, rather fleshy, 15-30 cm high. Leaves 2.5-7.5 cm, elliptic, ovate or oblong, obtuse or acute, base cuneate. Racemes 2.5-3.8 cm, terminal and leaf-opposed. Flowers sometimes 2-nate and connate, valves large, orbicular, 2-lobed at each end, very membranous and reticulate without a marginal nerve (**Figure no. Q**).

Local Name: Takpalong, Chukapalong, Amlabetom.

Family: Polygonaceae

Habit: Annual herb

Habitat: Moist places.

Flower colour: Yellowish-white.

Flowering season: July to August.

Status of occurrence: Frequent

Specimen examined: SA 17, Santahar, Bogra, 30. 01. 2015.

22. *Raphanus sativus* L.

Description: *Raphanus sativus* are annual or biennial brassicaceous crops grown for their swollen tap-roots which can be globular, tapering or cylindrical. The root skin colour ranges from white through pink, red, purple, yellow and green to black but the flesh is usually white. Smaller types have a few leaves about 13 cm (5 in) long with round roots up to 2.5 cm (1 in) in diameter or more slender, long roots up to 7 cm (3 in) long (**Figure no. S**).

Local Name: Mula shak

Family: Brassicaceae

Habit: Herb

Habitat: Sandy loams

Flowering color: Violet

Flowering season: Annual or biennial

Status of occurrence: Common

Specimen examined: SA 19, Santahar, Bogra, 13. 10. 2014.

23. *Solanum tuberosum* L.

Description: The *Solanum tuberosum* plant is a leafy, sprawling, almost vinelike annual to 3 ft (0.9 m) tall and spreading out a little more. The compound leaves are about 10 in (25 cm) long and the 7-15 leaflets about 3 in (7.6 cm) long. The tubers are not roots, but modified stems or rhizomes, and the "eyes" are really leaf buds. Potato flowers are rather showy: they are star-shaped, white, lavender, pink or light blue with yellow centers, about an inch across, and borne in clusters (**Figure no. U**).

Local Name: Alu shak

Family: Solanaceae

Habit: Herb

Habitat: Well drained soil.

Flowering color: White, lavender, pink or light blue with yellow centers.

Flowering season: January or February

Status of occurrence: Common

Specimen examined: SA 21, Santahar, Bogra, 13. 10. 2014.

24. *Spinacia oleracea* L.

Description: *Spinacia oleracea* is an annual plant (rarely biennial), which grows to a height of up to 30 cm. It may survive over winter in temperate regions. The leaves are alternate, simple, and ovate to triangular, very variable in size from about 2–30 cm long and 1–15 cm broad, with larger leaves at the base of the plant and small leaves higher on the flowering stem. The flowers are inconspicuous, yellow-green, 3–4 mm diameter, maturing into a small, hard, dry, lumpy fruit cluster 5–10 mm across containing several seeds (**Figure no. I**).

Local Name: Palong Shak

Family: Amaranthaceae

Habit: Herb

Habitat: Cultivated Beds

Flowering color: yellow-green

Flowering season: June to September

Status of occurrence: Common

Specimen examined: SA 09, Santahar, Bogra, 01. 04. 2014.

Medicinally important leafy vegetables: The important medicinal angiosperm leafy vegetables at Santahar Pouroshova of Bogra were carried out. Twenty four (24) medicinal plants have been documented with their uses for the cure of more than 59 diseases. The medicinal plants are used by the local people to cure following the diseases, especially for anemia, asthma, burning sensation, blood disease, bronchitis, cough, chicken pox, constipation, dysentery, diarrhea, diabetes, eczema, fever, headache, itches, jaundice, menstrual disease, paralysis, piles, sex problems, skin diseases, snake-bite, toothache, worm, wound and others. Different plant parts of different spp. are used as medicine for treating various diseases; leaf of 14, fruit of 5, root of 3, stem of 3, seed of 4, tuber of 2 and whole plant of 9 species were used as medicine. This finding of common medicinal plants in the study is in agreement with Yusuf et al (2009), Alam (2007), Ahmad (2012) and Ghani (1998). The present study revealed that medicinal plants still play an important in the primary health care of the rural communities. The information

gathered from the local traditional healers are useful for further researchers in the field of ethno-botany, taxonomy and development of new drug from natural resources.

Table 1. Medicinal angiosperm leafy vegetables are used by local people at Santahar Pouroshova of Bogra district, Bangladesh

S/N	Plant species	Family name	Parts used	Diseases to be treated
1	<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae	WP	Diuretic, headache, cough.
2	<i>Amaranthus tricolor</i> L.	Amaranthaceae	L, WP	Diarrhea, dysentery, excessive menstruation.
3	<i>Amaranthus viridis</i> L.	Amaranthaceae	L	Menstrual flow, diuretic, snake-bite.
4	<i>Alternanthera philoxeroides</i> (Mart.) Griseb.	Amaranthaceae	WP	Asthma, bronchitis, dyspepsia, fever, eczema.
5	<i>Basella alba</i> L.	Basellaceae	L, S	Diarrhea, dysentery, diuretic, oral cancer, hypertension.
6	<i>Benincasa hispida</i> (Thunb.) Cogn.	Cucurbitaceae	F, S	Diuretic, urinary dysfunction, summer fevers, cough, anthelmintic, vaginal discharges and tape worms.
7	<i>Boerhaavia repens</i> L.	Nyctaginaceae	L, R	Stomachic, laxative, emetic, diuretic, dropsy, pain, dysentery, epilepsy, jaundice, anemia, ophthalmia, gonorrhoea, blood disease, leucorrhoea, jaundice.
8	<i>Chenopodium album</i> L.	Chenopodiaceae	L	Digestive, stomachic, constipation.
9	<i>Coccinia grandis</i> (L.) Voigt.	Cucurbitaceae	L, F	Leprosy, fever, asthma, bronchitis, diabetes, jaundice, digestive, carminative, ophthalmia, gonorrhoea.
10	<i>Colocasia esculenta</i> (Lour.) Kunth.	Araceae	L, T	Constipation, colic, digestive
11	<i>Commelina diffusa</i> Burm. f.	Commelinaceae	WP	Snake-bite, leprosy.
12	<i>Coriandrum sativum</i> L.	Apiaceae	WP, SD	Diabetes, high blood pressure, ulcers, urinary tract problems, skin problems and liver diseases.
13	<i>Corchorus capsularis</i> L.	Tiliaceae	L	Burning sensation, liver disorder, tonic, dysentery, skin diseases and disorder of the digestive system.
14	<i>Cucurbita maxima</i> Duch.	Cucurbitaceae	F, SD	Anthelmintic, diuretic, tonic and boils.
15	<i>Glinus oppositifolius</i> (L.) DC.	Molluginaceae	L, WP	Asthma, stomachic, antiseptic, women menstrual discharge, earache.
16	<i>Ipomoea aquatic</i> Forssk.	Convolvulaceae	L, WP	Fever, ringworm, leprosy, jaundice, wounds and eye diseases.
17	<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	F, SD	Diuretic, headache, constipation and brain tonic.
18	<i>Moringa oleifera</i> L.	Moringaceae	F, R	Chicken pox, diabetes, paralysis, fever.
19	<i>Oxalis corniculata</i> L.	Oxalidaceae	L	Cough, scabies, itches, dysentery, anemia, piles, dyspepsia and fever.
20	<i>Portulaca oleracea</i> L.	Portulacaceae	WP	Diuretic, dysentery, diseases of liver, spleen

				disorder, kidney, scurvy, piles
21	<i>Raphanus sativus</i> L.	Brassicaceae	R, S	Urinary disease, piles, laxative, diuretic, spleen disorders and paralysis
22	<i>Rumex vesicarius</i> L.	Polygonaceae	WP, L	Tonic, stomachic, laxative, constipation, asthma, bronchitis, piles, diuretic, toothache, jaundice, indigestion, dysentery.
23	<i>Solanum tuberosum</i> L.	Solanaceae	T	Peptic ulcers, skin rashes, rheumatic joint pain, swellings, digestive.
24	<i>Spinacia oleracea</i> L.	Amaranthaceae	L, SD	Liver disease, Jaundice, Urinary disease, inflammation of Lungs.

L=Leaf, S=Stem, R=Root, WP=Whole plant, F=Fruit, SD=Seed, T=Tuber



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



P



Q



R



S



T



U



V



W



X

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References

- Ahmad, S. (2012): Lokaj Chikitsay Vesaja Udvid (Traditional Treatments and Medicinal Plants). Anupam Prokashni, Dhaka, Bangladesh. Pp. 1-775.
- Ahmed, Z.U., Begum, Z.N.T., Hassan, M.A., Khondker, M., Kabir, S.M.H., Ahmad, M., Ahmed, A.T.A., Rahman, A.K.A. and Haque, E.U.(Eds). (2009): Encyclopedia of Flora and Fauna of Bangladesh. Angiosperms; Dicotyledons. Vol. 11. Asiat. Soc. Bangladesh, Dhaka.
- Alam, M.J. (2007): Traditional Medicine in Bangladesh. Asiatic Society of Bangladesh, Dhaka. pp. 1-311.
- Anisuzzaman, M., Rahman, A.H.M.M., Rashid, M. H., Naderuzzaman, A.T.M. and Islam, A.K.M.R. (2007): An Ethnobotanical Study of Madhupur, Tangail. *Journal of Applied Sciences Research*. Pakistan. 3(7): 519-530.
- Ara, T., Islam, A.K.M.R. and Rahman, A.H.M.M. (2013): Taxonomy of Solanaceae: Taxonomic Enumeration of the family Solanaceae in the Rajshahi University Campus, Bangladesh. Lambert Academic Publishing AG & CO KG. Germany. 104 pages, ISBN 978-3-659-31315-8.
- Ara, T., Khokan, E.H. and Rahman, A.H.M.M. (2011): Taxonomic Studies on the Family Solanaceae in the Rajshahi University Campus. *Journal of Biodiversity and Environmental Sciences*. Bangladesh. 4(1):29-34.
- BBS (Bangladesh Bureau of Statistics). (2009): Statistical Year Book of Bangladesh, 23rd edition, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning Government of Peoples Republic of Bangladesh, Dhaka.
- Ghani, A. (1998): Medicinal Plants of Bangladesh. Asiatic Society of Bangladesh, Dhaka.
- Hooker, J.D. (1872-1888): The Flora of British India. Vols. 1-7 (Ind. Repr. 1973). Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Huq, A.M. (1986): Plant Names of Bangladesh. Bangladesh National Herbarium, BARC, Dhaka, Bangladesh.
- Kirtikar, K.R. and Basu, B.D. (1987): Indian Medicinal Plants. Vols. 1-4. Lalit Mohan Basu, Alhabad, India.
- Pasha, M.K. and Uddin, S.B. (2013): Dictionary of Plant Names of Bangladesh (Vascular Plants). Janokalyan Prokashani. Chittagong, Dhaka, Bangladesh.

- Prain, D. (1903): Bengal Plants. Vols. 1 & 2 (Ind. Repr. 1981). Bishen Singh Mahendra Pal Singh, Dehra Dun, India.
- Rahman, A.H.M.M., Anisuzzaman, M., Alam, M.Z., Islam, A.K.M.R. and Zaman, A.T.M. N. (2006): Taxonomic Studies of the Cucurbits Grown in the Northern Parts of Bangladesh. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 2(6):299-302.
- Rahman, A.H.M.M., Anisuzzaman, M., Ahmed, F., Zaman, A.T.M.N. and Islam, A.K.M. R. (2007a): A Floristic Study in the Graveyards of Rajshahi City. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 3(6): 670-675.
- Rahman, A.H.M.M., Islam, A.K.M.R. and Naderuzzaman, A.T.M. (2007b): Studies on the herbaceous plant species in the graveyard areas of Rajshahi city. *Plant Environment Development*. Bangladesh. 1(1): 57-60.
- Rahman, A.H.M.M., Islam, A.K.M.R., Naderuzzaman, A.T.M., Hossain, M.D. and Afza, R. (2007c): Studies on the Aquatic Angiosperms of the Rajshahi University Campus. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 3(5): 474-480.
- Rahman, A.H.M.M., Alam, M.S., Hossain, M.B., Nesa, M.N., Islam, A.K.M.R. and Rahman, M.M. (2008a): Study of Species Diversity on the family Asteraceae (Compositae) of the Rajshahi Division. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 4(6): 794-797.
- Rahman, A.H.M.M., Alam, M.S., Khan, S.K., Ahmed, F., Islam, A.K.M.R. and Rahman, M.M. (2008b): Taxonomic Studies on the family Asteraceae (Compositae) of the Rajshahi Division. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 4(2): 134-140.
- Rahman, A.H.M.M., Anisuzzaman, M., Ahmed, F., Islam, A.K.M.R. and Naderuzzaman, A. T.M. (2008c): Study of Nutritive Value and Medicinal Uses of Cultivated Cucurbits. *Journal of Applied Sciences Research*. Pakistan. 4(5): 555-558.
- Rahman, A.H.M.M., Anisuzzaman, M., Haider, S.A., Ahmed, F., Islam, A.K.M.R. and Naderuzzaman, A.T.M. (2008d): Study of Medicinal Plants in the Graveyards of Rajshahi City. *Research Journal of Agriculture and Biological Sciences*. Pakistan. 4(1): 70-74.
- Rahman, A.H.M.M., Kabir, E.Z.M.F., Sima, S.N., Sultana, R.S., Nasiruddin, M. and Naderuzzaman, A.T.M. (2010): Study of an Ethnobotany at the Village Dohanagar, Naogaon. *Journal of Applied Sciences Research*. Pakistan. 6(9): 1466-1473.
- Rahman, A.H.M.M., Islam, A.K.M.R. and Rahman, M.M. (2011): The Family Asteraceae of Rajshahi Division, Bangladesh. VDM Verlag Dr. Muller e.k. Publishers, Germany. 304 pages, ISBN 978-3-639-37815-3.
- Rahman, A.H.M.M., Gulsan, J.E., Alam, M.S., Ahmad, S., Naderuzzaman, A.T.M. and Islam, A.K.M.R. (2012): An Ethnobotanical Portrait of a Village: Koikuri, Dinajpur with Reference to Medicinal Plants. *International Journal of Biosciences*. Bangladesh. 2(7): 1-10.
- Rahman, A.H.M.M. and Akter, M. (2013): Taxonomy and Medicinal Uses of Euphorbiaceae (Spurge) Family of Rajshahi, Bangladesh. *Research in Plant Sciences*. USA. 1(3): 74-80.
- Rahman, A.H.M.M. and Khanom, A. (2013): Taxonomic and Ethno-Medicinal Study of Species from Moraceae (Mulberry) Family in Bangladesh Flora. *Research in Plant Sciences*. USA. 1(3): 53-57.
- Rahman, A.H.M.M., Biswas, M.C., Islam, A.K.M.R. and Zaman, A.T.M.N. (2013a): Assessment of Traditional Medicinal Plants Used by Local People of Monirampur Thana under Jessore District of Bangladesh. *Wudpecker Journal of Medicinal Plants*. Nigeria. 2(6): 099-109.
- Rahman, A.H.M.M., Islam, A.K.M.R. and Rahman, M.M. (2013b): An anatomical investigation on Asteraceae family at Rajshahi Division, Bangladesh. *International Journal of Biosciences*. Bangladesh. 3(1): 13-23.
- Rahman, A.H.M.M., Islam, A.K.M.R. and Hossain, M.M. (2013c): Taxonomy of Cucurbitaceae: Taxonomic investigation of wild & cultivated cucurbits of Northern parts of Bangladesh. Lambert Academic Publishing AG & CO KG. Germany. 176 pages, ISBN 978-3-845-42855-0.
- Rahman, A.H.M.M., Saika Kabir Nitu, S.K., Ferdows, Z. and Islam, A.K.M.R. (2013d): Medico-botany on herbaceous plants of Rajshahi, Bangladesh. *American Journal of Life Sciences*. USA. 1(3): 136-144.

- Rahman, A.H.M.M., Sultana, N., Islam, A.K.M.R. and Zaman, A.T.M.N. (2013e): Study of Medical Ethno-botany of traditional medicinal plants used by local people at the village Genda under Savar Upazilla of district Dhaka, Bangladesh. *Journal of Medicinal Plants Studies*, India. 1(5): 72-86.
- Rahman, A.H.M.M., Kabir, E.Z.M.F., Islam, A.K.M.R. and Zaman, A.T.M.N. (2013f): Medico-botanical investigation by the tribal people of Naogaon district, Bangladesh. *Journal of Medicinal Plants Studies*. India. 1(4): 136-147.
- Rahman, A.H.M.M. (2013a): A Checklist of Common Angiosperm Weeds of Rajshahi District, Bangladesh. *International Journal of Agricultural and Soil Science*. 1(1): 1-6.
- Rahman, A.H.M.M. (2013b): Assessment of Angiosperm Weeds of Rajshahi, Bangladesh with emphasis on medicinal plants. *Research in Plant Sciences*. 1(3): 62-67.
- Rahman, A.H.M.M. (2013c): An Ethno-botanical investigation on Asteraceae family at Rajshahi, Bangladesh. *Academia Journal of Medicinal Plants*. 1(5): 92-100.
- Rahman, A.H.M.M. (2013d): Angiospermic flora of Rajshahi district, Bangladesh. *American Journal of Life Sciences*. 1(3): 105-112.
- Rahman, A.H.M.M. (2013e): Ethno-botanical Survey of Traditional Medicine Practice for the Treatment of Cough, Diabetes, Diarrhea, Dysentery and Fever of Santals at Abdullahpur Village under Akkelpur Upazilla of Joypurhat District, Bangladesh. *Biomedicine and Biotechnology*. 1(2): 27-30.
- Rahman, A.H.M.M. (2013f): Ethno-medicinal investigation on ethnic community in the northern region of Bangladesh. *American Journal of Life Sciences*. 1(2): 77-81.
- Rahman, A.H.M.M. (2013g): Ethno-medico-botanical investigation on cucurbits of the Rajshahi Division, Bangladesh. *Journal of Medicinal Plants Studies*. India. 1(3): 118-125.
- Rahman, A.H.M.M. (2013h): Graveyards angiosperm diversity of Rajshahi city, Bangladesh with emphasis on medicinal plants. *American Journal of Life Sciences*. USA. 1 (3): 98-104.
- Rahman, A.H.M.M. (2013i): Medico-botanical study of commonly used angiosperm weeds of Rajshahi, Bangladesh. *Wudpecker Journal of Medicinal Plants*. Nigeria. 2(3): 044-052.
- Rahman, A.H.M.M. (2013j): Medico-botanical study of the plants found in the Rajshahi district of Bangladesh. *Prudence Journal of Medicinal Plants Research*. Nigeria. 1(1): 1-8.
- Rahman, A.H.M.M. (2013k): Medico-Ethnobotany: A study on the tribal people of Rajshahi Division, Bangladesh. *Peak Journal of Medicinal Plants Research*. Nigeria. 1(1): 1-8.
- Rahman, A.H.M.M. (2013l): Study of Species Diversity on Cucurbitaceae family at Rajshahi Division, Bangladesh. *Journal of Plant Sciences*. USA. 1(2): 18-21.
- Rahman, A.H.M.M. (2013m): Systematic studies on Asteraceae in the northern region of Bangladesh. *American Journal of Life Sciences*. USA. 1(4): 155-164.
- Rahman, A.H.M.M. (2013n): Systematic studies on Cucurbitaceae family at Rajshahi division, Bangladesh. *Plant*. USA. 1(2): 10-15.
- Rahman, A.H.M.M. (2013o): Traditional Medicinal Plants Used in the Treatment of different Skin diseases of Santals at Abdullahpur Village under Akkelpur Upazilla of Joypurhat district, Bangladesh. *Biomedicine and Biotechnology*. USA. 1(2): 17-20.
- Rahman, A.H.M.M. (2014a): Angiosperm Flora in the Graveyards of Rajshahi City, Bangladesh. Lambert Academic Publishing AG & CO KG. Germany. 197 pages, ISBN 978-3-659-52094-5.
- Rahman, A.H.M.M. (2014b): Ethno-gynecological study of traditional medicinal plants used by Santals of Joypurhat district, Bangladesh. *Biomedicine and Biotechnology*. USA. 2(1): 10-13.
- Rahman, A.H.M.M. (2014c): Ethno-medicinal Practices for the Treatment of Asthma, Diuretic, Jaundice, Piles, Rheumatism and Vomiting at the Village Abdullahpur under Akkelpur Upazilla of Joypurhat District, Bangladesh. *International Journal of Engineering and Applied Sciences*. India. 1(2): 4-8.

- Rahman, A.H.M.M. and Debnath, A. (2014a): Angiosperm Diversity of Pandit Para Village under Palash Upazila of Narsingdi District, Bangladesh. *Frontiers of Biological & Life Sciences*. USA. 2(4): 98-105.
- Rahman, A.H.M.M. and Debnath, A. (2014b): Taxonomy and Ethnobotany of Palash Upazila of Narsingdi, Bangladesh. Lap Lambert Academic Publishing, Germany. 209 pages. ISBN 978-3-659-61350-0
- Rahman, A.H.M.M. and Gulshana, M.I.A. (2014): Taxonomy and Medicinal Uses on Amaranthaceae Family of Rajshahi, Bangladesh. *Applied Ecology and Environmental Sciences*. USA. 2(2): 54-59.
- Rahman, A.H.M.M. and Keya, M.A. (2014a): Angiosperm Diversity of Bogra District, Bangladesh. Lap Lambert Academic Publishing, Germany. 276 pages. ISBN 978-3-659-62020-1
- Rahman, A.H.M.M. and Keya, M.A. (2014b): Assessment of Angiosperm Flora at the Village Sabgram under Sadar Upazila of Bogra District, Bangladesh. *International Journal of Advanced Research*. India. 2(11): 443-458.
- Rahman, A.H.M.M. and Parvin, M.I.A. (2014): Study of Medicinal Uses on Fabaceae Family at Rajshahi, Bangladesh. *Research in Plant Sciences*. USA. 2(1): 6-8.
- Rahman, A.H.M.M. and Rahman, M.M. (2014): An Enumeration of Angiosperm weeds in the Paddy field of Rajshahi, Bangladesh with emphasis on medicinal Plants. *Journal of Applied Science And Research*. USA. 2(2): 36-42.
- Rahman, A.H.M.M. and Rojonigondha. (2014): Taxonomy and Traditional Medicine Practices on Malvaceae (Mallow Family) of Rajshahi, Bangladesh. *Open Journal of Botany*. USA. 1(2): 19-24.
- Rahman, A.H.M.M., Afsana, M.W. and Islam, A.K.M.R. (2014a): Taxonomy and Medicinal Uses on Acanthaceae Family of Rajshahi, Bangladesh. *Journal of Applied Science And Research*. USA. 2(1): 82-93.
- Rahman, A.H.M.M., Ferdous, Z. and Islam, A.K.M.R. (2014b): A Preliminary Assessment of Angiosperm Flora of Bangladesh Police Academy. *Research in Plant Sciences*. USA. 2(1): 9-15.
- Rahman, A.H.M.M., Hossain, M.M. and Islam, A.K.M.R. (2014c): Taxonomy and Medicinal Uses of Angiosperm weeds in the wheat field of Rajshahi, Bangladesh. *Frontiers of Biological and Life Sciences*. USA. 2(1): 8-11.
- Rahman, A.H.M.M., Jahan-E-Gulsan, S.M. and Naderuzzaman, A.T.M. (2014d): Ethno-Gynecological Disorders of Folk Medicinal Plants Used by Santhals of Dinajpur District, Bangladesh. *Frontiers of Biological & Life Sciences*. USA. 2(3): 62-66.
- Rahman, A.H.M.M. (2015): Traditional Medicinal Plants in the treatment of Important Human Diseases of Joypurhat District, Bangladesh. *Journal of Biological Pharmaceutical and Chemical Research*, India. 2(1): 21-29.
- Rashid, M.M. (1999): Sobgi Bijnan. Rashid Publishing House. Dhaka, Bangladesh.
- Uddin, K., Rahman, A.H.M.M. and Islam, A.K.M.R. (2014): Taxonomy and Traditional Medicine Practices of Polygonaceae (Smartweed) Family at Rajshahi, Bangladesh. *International Journal of Advanced Research*. India. 2(11): 459-469.
- Uddin, S.B. and Rahman, M.A. (1999): Angiospermic flora of Himchari National Park, Cox's Bazar, Bangladesh. *Bangladesh J. Plant Taxon*. 6(1): 31-68.
- Yusuf, M., Begum, J., Hoque, M. N. and Choudhury, J. U. (2009): Medicinal plants of Bangladesh-Revised and Enlarged. Bangladesh Coun. Sci. Ind. Res. Lab. Chittagong, Bangladesh.