

## Taxonomic Studies of the Cucurbits Grown in the Northern Parts of Bangladesh

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**Abstract:** A taxonomic investigation of the cucurbits (family-Cucurbitaceae) growing throughout the northern parts of Bangladesh was carried out. A total of 24 species under 13 genera of the family Cucurbitaceae were collected. A brief taxonomic account of each species is given with current nomenclature, local name, English name and uses. About the species *Benincasa hispida*, *Citrullus lanatus*, *Coccinia grandis*, *Cucumis sativus*, *C. melo*, *Cucurbita maxima*, *C. moschata*, *C. pepo*, *Lagenaria siceraria*, *Luffa acutangula*, *L. cylindrica*, *Momordica charantia*, *M. cochinchinensis*, *Melothria maderaspatana*, *Trichosanthes anguina*, *T. dioica*, *T. cucumerina*, *T. bracteata* were abundant and *Diplocyclos palmatus*, *Cucumis callosus*, *Thladiantha cordifolia*, *Trichosanthes cordata*, *Gymnopetalum cochinchinense* were very rare.

**Key words:** Checklist, cucurbits, northern parts of Bangladesh

### INTRODUCTION

Cucurbits are the popular name of the family Cucurbitaceae, commonly known as the gourd family. They are widely distributed in the tropics and warm temperate regions of South, Southeast and East Asia, Africa including Madagascar and central South America. The family is represented by about 110 genera and 650 to 850 species<sup>[12]</sup>.

Cucurbitaceae is a medium sized and botanically highly specialized family of mainly climbing plants. There are about 90 genera and 700 species mainly used as food<sup>[1]</sup>.

The cultivated species investigated in this study belong to the genera *Benincasa*, *Citrullus*, *Cucumis*, *Cucurbita*, *Lagenaria*, *Luffa*, *Momordica* and *Trichosanthes*. These are used as fruits and vegetables, and most of them have considerable economic value<sup>[11]</sup>.

Many species of this family are the sources of medicine. Some are widely cultivated in the field for vegetable and food. A few taxa are also grown as ornamental plants. Cucurbitaceae is the largest group of summer vegetable crops. These include cucumber, musk melon, water melon, tinda, bottle gourd, luffa, bitter gourd, pumpkin, squashes, parwal and snake gourd.

Most of the members of the family Cucurbitaceae are monoecious and a few are dioecious. A number of hermaphrodite and andromonoecious cultivars are also available in some crops. They are all summer season crops and are susceptible to frost<sup>[3]</sup>.

### MATERIALS AND METHODS

A total of 24 species under 13 genera of the family Cucurbitaceae were collected. Plant species were collected as systematically as possible from the study

area. Collections were made throughout the year and particular care was taken not to miss the flowering stages or the fruits. All field data that cannot be observed from the herbarium specimen, i.e. date, collection number, habitat, uses and distribution were recorded.

Herbarium sheets were prepared in multiple sets and flowers were preserved in 70% alcohol for future study. Identifications were made with the help of Hooker<sup>[4]</sup>, Prain<sup>[10]</sup>, Kirtikar and Basu<sup>[7]</sup>, Lawrence<sup>[8]</sup> and Heywood<sup>[6]</sup>. For the current name<sup>[5]</sup> was consulted. All the collected specimens were kept in the Herbarium, Department of Botany, Rajshahi University, Bangladesh.

### RESULTS AND DISCUSSIONS

From this study 24 species under 13 genera of the family Cucurbitaceae were collected and identified. Following is the list of collected cucurbit species placed alphabetically.

*Benincasa* Savi.

*Benincasa hispida* (Thunb.) Cogn

Local name: Chal kumra English name: White gourd  
Leaves are cordate, reniform, orbicular. Flowers are solitary, monoecious. Fruits are fleshy, oblong, pubescent. Uses: The young and immature fruits are cooked as vegetables. The fruit is largely used for making confectionary<sup>[9]</sup>.

*Citrullus* Frosk

*Citrullus lanatus* (Thunb.) Mart. & Nakai

Local name: Turmuz English name: Water melon  
Leaves are triangular ovate, cordate, deeply divided. Flowers are yellow. Fruits are subglobose or ellipsoid, smooth, flesh rose to red.

Uses: The ripe fruits are directly edible and immature fruits are cooked as vegetable. The fruit is largely used for making confectionary.

*Coccinia* Wight and Arn.

*Coccinia grandis* (Linn) Voigt

Local name: Telakucha English name: Scarlet gourd  
Leaves are petiolate, angular or lobed. Flowers are solitary. Fruits are fusiform ovoid, cylindrical, bright scarlet.

Uses: The unripe fruits are used as vegetables. Juice of the plant is used in diabetes. It is also used in anorexia, asthma, fever, dropsy, and gonorrhoea. Leaves are externally used in skin eruptions<sup>[14]</sup>.

*Cucumis* Linn.

*Cucumis sativus* Linn.

Local name: Khira English name: Cucumber  
Leaves are 5-angular or slightly lobed. Flowers are yellow, monoecious. Fruits are glabrous, sometimes tuberculated commonly elongate.

Uses: The fruits are eaten as salad and vegetables. The fruits are much used during summer as a cooling food. Leaves are along with cumin seeds administrated in throat affections<sup>[14]</sup>.

*Cucumis melo* Linn.

Local name: Bangi, futi English name: Musk melon  
Leaves are orbicular, reniform, 5-angular or lobed. Flowers are yellow. Fruits are glabrous.

Uses: The ripe fruits are edible and immature fruits are cooked as vegetables. The fruit is largely used for making confectionary. The ripe fruits are useful in kidney diseases. The ripe fruit is cooling, tonic, laxative, aphrodisiac and cures biliousness<sup>[14]</sup>.

*Cucumis callosus* Cogn

Local name: Bangumak English name: Unknown  
Leaves are cordate, suborbicular, deeply palmately 5-7 lobed. Flowers are yellow. Fruits are smooth, obovoid.  
Uses: The fruit is used to prevent insanity to strong memory and remove vertigo. The seeds are cooling and astringent and useful in bilious disorder<sup>[7]</sup>.

*Cucurbita* Linn.

*Cucurbita maxima* Duch

Local name: Bilati English name: Melon pumpkin,  
Squash gourd

Leaves are large, dark green and cordate. Flowers are large and yellow. Fruits are round, flattened or oval and hard yellow orange colour.

Uses: Fruits are used as a vegetable.

*Cucurbita pepo* Linn.

Local name: Mistikadu English name: Pumpkin  
Leaves are large, dark green and 5-lobed. Flowers are yellow in colour. Fruits are round.  
Uses: Fruits are used as a vegetable.

*Cucurbita moschata* Duch. ex Poir.

Local name: Mistikadu English name: Pumpkin  
Leaves are large and cordate, green in colour. Flowers are yellow. Fruits are cylindrical or flattened.

Uses: Matured fruits of pumpkin are used as table vegetable for baking in pies and for making jam, also as a livestock feed. The yellow flesh of the fruit is cooked and eaten as vegetable<sup>[2]</sup>.

*Diplocyclos* (Endl.) Post & Kuntz

*Diplocyclos palmatus* (Linn.) Jeffrey

Local name: Mala English name: Unknown  
Leaves are suborbicular in outline, 3-lobed, base cordate. Flowers are white in colour, Fruits are globose or ovoid.  
Uses: Plants are used as medicine by the local people.

*Gymnopetalum* Arn.

*Gymnopetalum cochinchinense* (Lour.) Kurj.

Local name: Kaubuti English name: Unknown  
Leaves are ovate, 3-lobed. Acuminate. Flowers are solitary and white in colour. Fruits are ovoid-oblong.  
Uses: The fruit is said to be poisonous.

*Lagenaria* Seringe

*Lagenaria siceraria* (Mol.) Standl.

Local name: Panilau English name: Bottle gourd  
Leaves are ovate or orbicular, cordate. Flowers are white in colour. Fruits are long or round.

Uses: The fruits are used as vegetables. The hard fruit shills when ripe are used as bottles, bowels, pipes, blowing horns, snuff boxes, musical instruments like Sitar and Bina<sup>[2]</sup>.

*Luffa* Mill.

*Luffa acutangula* (Linn.) Roxb.

Local name: Toroy, Jhinga English name: Ribbed gourd.  
Leaves are scabrous, 5-angled or shallowly lobed. Flowers are solitary, yellowish in colour. Fruits are elongate or club-shaped.

Uses: Young tender fruits are used as vegetables. Fruit is demulcent, diuretic and nutritive<sup>[14]</sup>.

*Luffa cylindrica* (Linn.) Roem.

Local name: Dhundol English name: Sponge gourd  
Leaves are reniform, orbicular, 5-angled or somewhat 5-lobed dentate, usually scabrous. Flowers are solitary, yellow. Fruits are elongate or clavate.

Uses: The young fruits are cooked as vegetables. The dried fruits yield a spongy substance which is used as a bath sponge<sup>[9]</sup>.

*Melothria* Linn.

*Melothria maderaspatana* (Linn.) Cogn.

Local name: Agmuki English name: Unknown.  
Leaves are deltoid-ovate, entire angled or 3-5 lobed, acute or subacuminate, coarsely dentate-serrate, scabrous with stiff hairs on bothsides. Flowers are yellowish in colour. Fruits are globose, red and glossy at maturity.

Uses: The leaves and fruits are used as vegetables <sup>[13]</sup>. Both ripe and unripe fruits and roots are eaten <sup>[2]</sup>.

*Momordica* Linn.

*Momordica cochinchinensis* (Lour.) Spring.

Local name: Kakrol English name: Teasle gourd  
Leaves are cordate, ovate, usually 3-lobed, glabrous or a little pubescent. Flowers are yellow with white lined. Fruit is muricated, ovate, pointed, bright red, very fleshy, without ribs, covered with conical points.

Uses: The young fruits are used as vegetables <sup>[13]</sup>. Fruits and leaves are used in external application for lumbago, ulceration and fracture of bones. The roots are given in rheumatism with swelling of the lower limbs <sup>[14]</sup>.

*Momordica carantia* Linn.

Local name: Karala English name: Bitter gourd  
Leaves are orbicular glabrous or slightly pubescent, cut nearly to the base into 5-7 narrow sinuate or subpinnatifid lobes. Flowers are yellowish in colour. Fruit is ovoid narrow to both ends many ribbed covered with triangular tubercles.

Uses: The young bitter gourd are cooked and eaten as a vegetable. The fruits, leaves and roots have been used as a folk remedy for diabetes. The fruits are considered tonic, stomachic, fibrifuge, carminative and cooling. The juice of the fresh leaves acts as a mild purgative and is prescribed for children <sup>[14]</sup>.

*Momordica dioica* Roxb. ex Willd.

Local name: Ghee corolla English name: Unknown  
Leaves are ovate, acuminate, base cordate, smooth, unlobed or with 3-5 ovate lobes, glabrous, often punctate beneath. Flowers are yellow, solitary. Fruits are ovoid, densely soft echinate.

Uses: The fruits are used as vegetables.

*Thladiantha* Bunge

*Thladiantha cordifolia* (Bl.) Cogn.

Local name: Unknown English name: Unknown  
Leaves are ovate, acuminate, base deeply cordate rounded, undivided margins denticulate, villose. Flowers are golden yellow. Fruit is oblong, longitudinally 12-25 nerved.

Uses: Not known.

*Trichosanthes* Linn.

*Trichosanthes cordata* Roxb.

Local name: Buikakra English name: Unknown  
Leaves are acute entire or obscurely angular-lobed hair beneath, bracts elongate obovate entire or scarcely serrate, tendrils usually 3-fid. Flowers are whitish yellow. Fruit is globose size of small orange colour.

Uses: The roots are used as a tonic. The root dried and reduced to powder is given in enlargements of the spleen, liver and abdominal viscera <sup>[7]</sup>.

*Trichosanthes dioica* Roxb.

Local name: Pitol English name: Pointed gourd  
Leaves are cordate, oblong, acute, sinuate-dentate, not lobed. Petiole scabrous woody. Flowers are whitish green. Fruits are oblong or nearly spherical, acute.

Uses: The pointed gourd is one of the most nutritive and wholesome vegetables. It is grown for its fruit and leaves are used as vegetable. Fruit is fibrifuge, laxative, antibilious <sup>[14]</sup>.

*Trichosanthes anguina* Linn.

Local name: Chichinga English name: Snake gourd.  
Leaves are cordate, subreniform, 3-5 lobed or 5-angular lobes, not acuminate, pubescent or puberulous on both surface. Fruit is elongate cylindrical sometimes contorted.

Uses: The fruits are used as vegetables. The fruit is also used as a laxative <sup>[13]</sup>.

*Trichosanthes bracteata* (Lamk.) Voigt.

Local name: Makal English name: Unknown  
Leaves are broadly ovate or suborbicular, subentire or often deeply palmately 3-5 lobed, denticulate, upper surface scabrous.

Uses: The fruit is used as a cure for asthma. The seeds are emetic and purgative <sup>[7]</sup>.

*Trichosanthes cucumerina* Linn.

Local name: Banchichinga English name: Unknown  
Leaves are suborbicular, reniform or broadly ovate, deeply 5-7 lobed, lobes obtuse acute, denticulate, hairy on the both surfaces.

Uses: The fruits are used as vegetables. The juice of the leaves and fruits are useful in congesting of the liver and bilious headache <sup>[2]</sup>.

**Conclusion:** The taxonomic investigation of the family Cucurbitaceae were collected and identified in the study area. A total of 24 species under 13 genera of the family were collected. A total number of 14 species were cultivated and 10 were wild. For the current nomenclature, uses and a brief taxonomic description are provided for each species. About the species *Benincasa hispida*, *Citrullus lanatus*, *Coccinia grandis*, *Cucumis sativus*, *Lagenaria siceraria* are common all over the study area and *Diplocyclos palmatus* and *Thladiantha cordifolia* are very rare species in the study area.

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