

## A TAXONOMIC STUDY OF FABACEAE LINDL. OCCURRING IN THE KHULNA DIVISION OF BANGLADESH

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### Abstract

This study presents the first exclusive taxonomic assessment of Fabaceae in Khulna Division, Bangladesh, documenting 142 species under 80 genera. *Crotalaria* L. was the largest genus with eight species, followed by *Senna* Mill. (7), *Vigna* Savi (6), *Albizia* Durazz. (5). Herbs were the dominant life form (46.48%), and wild species constituted the majority (54.23%). Native species accounted for 65.50% of the flora, while exotic species comprised 34.50%. Homesteads harboured the highest species richness (108 species), and Khulna district recorded the maximum species count (124) compared to Jhenaidah (80). A total of 49.30% of species were occasional, 28.87% common, and 21.83% rare. Three taxa have been listed as Endangered and four as Vulnerable on the IUCN Red List of Bangladesh. All of the species have economic importance in one or another way, but most of the species (74.25%) contribute medicinally. These findings establish a critical baseline for biodiversity conservation and sustainable land management in the region.

### Introduction

The Fabaceae represents one of the most significant and extensively studied families of angiosperms due to its remarkable diversity, ecological adaptability, and profound economic importance. The family comprises a wide range of life forms, including large trees, woody shrubs, Lianas, climbing vines, and both annual and perennial herbaceous plants (Watson and Dallwitz, 1992). Fabaceae represents a highly successful evolutionary lineage characterized by early Cenozoic diversification, complex phylogenetic history, and repeated innovations in symbiosis, morphology, and ecology (Herendeen *et al.*, 2022). Its monophyletic status is strongly supported by molecular data, while its ecological dominance is reinforced by nitrogen fixation and broad habitat adaptability (Wojciechowski *et al.*, 2006). This family is highly valuable due to their extraordinary diversity, abundance, medicinal uses, and different kinds of edible vegetables. The plants of this family contribute to food security, industrial materials, and ecological sustainability (Allen and Allen, 1981).

The defining morphological feature of this family is the production of a characteristic fruit known as a legume (pod), which typically dehisces along two sutures. In addition, most members possess compound leaves with stipules, although variations in leaf architecture occur across different subgroups. Taxonomically, Fabaceae is a challenging and complex group, though, it has been great interest to the botanists, conservationist, traders and laymen. The problem is the confusion existing in the identification and taxonomic delimitation of some taxa sharing overlapping or intermediate character states. Such problem can be resolved through a proper and detail study of the family based on careful observation of adequate specimens.

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Previously, many taxonomic studies were conducted on various floristic areas (Uddin *et al.*, 1998; Uddin *et al.*, 2003; Rahman *et al.*, 2015; Hossain *et al.*, 2021; Hossain *et al.*, 2022; Khan *et al.*, 2021a & b; Shetu *et al.*, 2022) or on different plant groups, including different families (e.g., Khan, 1972–1987; Khan *et al.*, 1996; Khanam and Ara, 2007, 2008; Islam, 2023) of Bangladesh, but in all previous studies covering the Fabaceae of this country, information on the precise distribution, localities, and habitats of the species of this family and citations of their specimens examined are lacking. Besides, nomenclature changes are taking place spontaneously owing to new combinations or merging of taxa based on intensive taxonomic research and newer systematic evidence. The occurrences of some species in the Khulna division which are cited in the previous literature are also questionable due to the unavailability of the specimens or the lack of information on their specific distribution within the political boundary of Bangladesh. Many areas of this division, previously covered with natural vegetation, do not harbour now any notable number of species or level of plant species diversity due to which a number of species might be lost before their documentation. Therefore, conducting a comprehensive taxonomic study across this division was found to be crucial for documenting the current species composition of Fabaceae, identifying potentially threatened taxa, and assessing temporal changes in species composition in the context of climate change. This study aimed to generate fundamental taxonomic data to support the effective conservation and sustainable management of Fabaceae species within the region.

### Materials and Methods

Khulna Division is the second-largest division of Bangladesh, covering an area of about 22,285 square kilometers and home to over 17 million people according to the 2022 census. Established in 1960, Khulna Division currently consists of ten districts: Bagerhat, Chuadanga, Jashore, Jhenaidah, Khulna, Kushtia, Magura, Meherpur, Narail, and Satkhira (Fig. 1). These districts are further divided into 59 sub-districts (upazilas), forming a well-organized administrative framework (Bangladesh Bureau of Statistics, 2022). Khulna Division stands as a region of immense historical, geographical, and ecological importance. From its roots in colonial administrative structures to its present-day role as a major division of Bangladesh, it has evolved significantly over time. Its fertile delta lands, extensive river systems, and the globally significant Sundarbans make it one of the most unique and valuable regions in the country (Miah, 2015). Most of the areas harboring the flora of Khulna division are being replaced by the effect of climate change, salinity intrusions, rapid urbanization with numerous infrastructures, industrialization, habitat fragmentation, agricultural expansion, unplanned tourism and other human interventions (Bangladesh Planning Commission, 2018).

This taxonomic study of the family was based on fresh collections of representative plant samples from the different habitats of the Khulna division of Bangladesh and the herbarium materials preserved in different herbaria of this country. Some floristic works and literature in the study area available by different researchers were consulted also (Rahman *et al.* 2015; Hossain *et al.* 2021; Hossain *et al.* 2022). A detailed survey was carried out in the Bangladesh Forest Research Institute Herbarium (BFRIH), Bangladesh National Herbarium (DACB), Dhaka University Salar Khan Herbarium (DUSH), Chittagong University Herbarium (HCU), and Jahangirnagar University Herbarium (JUH) during 2023-2025. Species-specific field visits were conducted for the collection of the representative plant specimens from the different districts of Khulna Division, including the Sundarbans of Bangladesh. Representative plant specimens were collected, prepared, dried, and preserved using conventional herbarium procedures and techniques (Bridson and Forman, 1989; Singh and Subramaniam, 2008). All the collected plant specimens were stored and studied at Jahangirnagar University Herbarium (JUH).

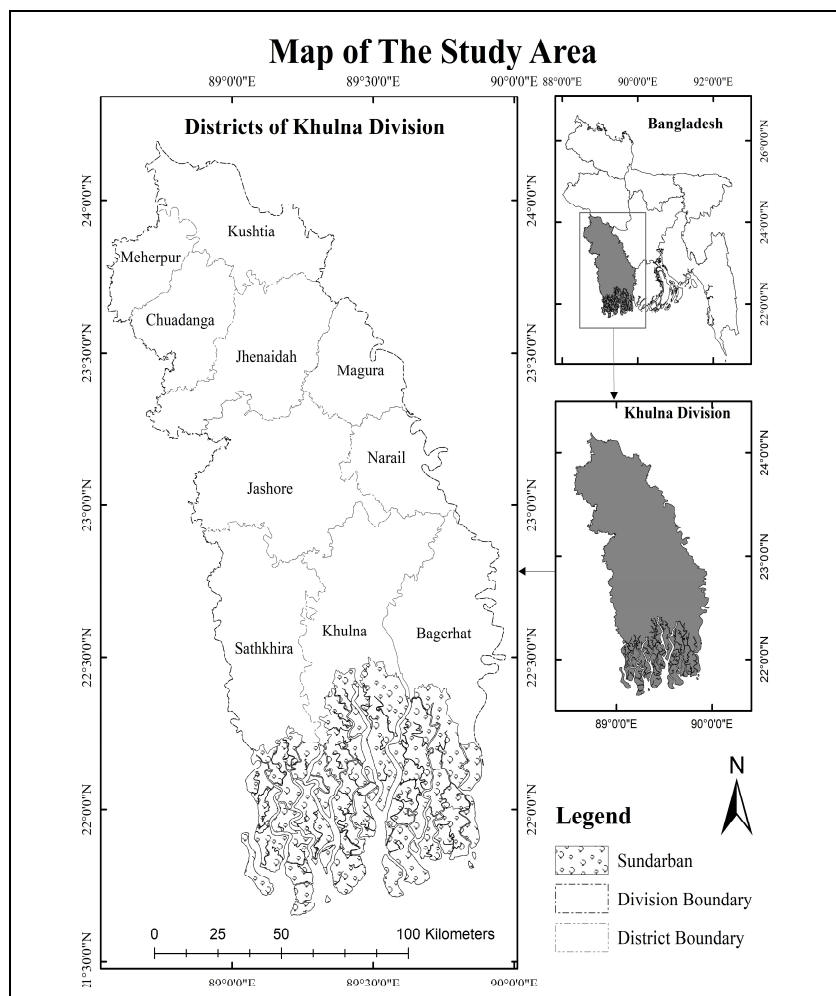


Fig. 1. Map of the study area.

In this study, the family limit of Fabaceae has been circumscribed following the APG IV system (Angiosperm Phylogeny Group, 2016), and all taxa have been arranged alphabetically in the checklist. All plant specimens belonging to each taxon were preliminarily identified through consulting the expert plant taxonomists and matching them with authentically identified voucher specimens preserved at Bangladesh National Herbarium (DACB), Salar Khan Herbarium of Dhaka University (DUSH), and Jahangirnagar University Herbarium (JUH). Besides, the morphological characters of each taxon, known through careful observation on its representative specimens, including the dissected parts, using hand lenses and stereo-binocular microscopes, were matched with the taxonomic descriptions and key characters available in taxonomic literature, including the modern floras (Hooker, 1876; Prain, 1903; Khatun, 2008–9; Khatun *et al.*, 2009; Wu *et al.*, 1999–2013). Specimens of the preliminarily identified taxa were compared with the clear type images available on the websites of various international herbaria (e.g., B, BM, K, P, etc.). The nomenclature of each taxon was verified and adopted by consulting international nomenclatural databases, *viz.*, GBIF 2023, POWO 2026, Tropicos 2026, and WFO 2026.

Nativeness of the identified taxa was checked in POWO (2026). The local name and uses were collected through interviews with the local people and relevant literature (Ghani, 1998; Huq, 2019). The occurrence (Table.1) of the plant species was inferred through the estimation of their current population size, distribution range and regeneration in the area based on field observation.

## Results and Discussion

This taxonomic study has confirmed the occurrence of 142 species under 80 genera of Fabaceae in the Khulna Division of Bangladesh (Table 1). The genus *Crotalaria* L., with eight species, was the largest, which was followed by *Senna* Mill. With seven species, *Vigna* Savi with six species, *Albizia* Durazz. with five species, *Alysicarpus* Desv., and *Sesbania* Adans. with four species each. Among these species, 66 (46.48%) are herbs, followed by 44 (30.98%) species of trees, 22 (15.50%) species of shrubs, and 10 (7.04%) species of lianas. Among these, wild species constituted the largest proportion, 77 species (54.23%), whereas 65 species (45.77%) are found as cultivated or planted.

The majority of the species are found as native (93, or 65.50% of species), and the rest of the species are recorded as exotic (49, or 34.50%). Most species are recorded in homesteads (108 species, 76.05%), followed by woodlands (77 species, 54.23%), scrub jungles (62 species, 43.66%), and agricultural fields (48 species, 33.80%). forests (42 species, 29.57%), roadsides and fallow lands (38 species, 26.76%). Among the 142 Fabaceae species documented in the study area, 74 species are found in each of the Khulna Division's ten districts, which reflects their widespread distribution and ecological adaptability across the division. The highest number of Fabaceae species are found in Khulna district (124 species), whereas the lowest number of species are recorded from Jhenaidah district (80 species).

Based on their frequency of occurrence, 41 (28.87%) species in the study area are categorized as common, 70 (49.30%) species as occasional, and 31 (21.83%) species as rare, indicating distinct patterns of the species distribution and abundance within the area. Some exotic species, such as *Alysicarpus rugosus*, *Crotalaria alata*, *Gliricidia sepium*, *Guilandina bonduc*, *Indigofera tinctoria*, *Neptunia oleracea*, *Smithia blanda*, etc., are rarely found in the study area.

All the species are found as economically and agriculturally important (Fig. 2). Among these, 104 species are significant for medicine and are followed by ornamental (25), green manure (23), fodder (21), timber (16), vegetables (11), fuelwood (10), pulses (8), Soil improver (7), Soil binder (6), fiber (5) and others (7) (Fig. 2).

Among the 142 species, *Alysicarpus ovalifolius*, *Intsia bijuga* var. *bijuga*, and *Intsia bijuga* var. *retusa* are listed as Endangered (EN) and *Aganope heptaphylla*, *Alysicarpus rugosus*, *Entada phaseoloides*, *Ticanto crista* are listed as Vulnerable (VU) in the IUCN's Plant Red List of Bangladesh and 28 as Least Concern (LC), one Data Deficient (DD), while the status of 107 species has not yet been assessed (IUCN Bangladesh, 2024). These threatened species are rarely found in the study area.

This study represents the first exclusive taxonomic assessment of leguminous plant species extant in the Khulna Division. The diverse assemblage of leguminous plant species found in the Khulna Division of Bangladesh plays a crucial role in the local ecosystem and sustainable agriculture by enhancing soil fertility through nitrogen fixation; by habitat protection through soil binding; by crop rotation to restore soil nutrients and increase crop productivity; by providing important support, including food, for humans, livestock, and other groups of animals; and by contributing substantially to economic and environmental stability and the overall biodiversity of the country.

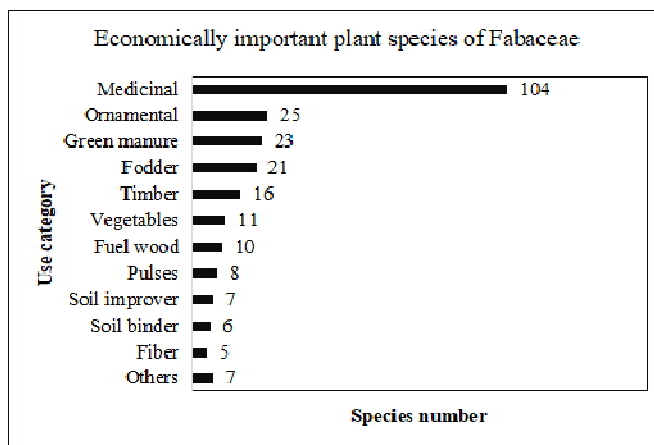


Fig. 2. Economic importance of Fabaceae species found in the Khulna division, Bangladesh.

**Table 1. List of the Fabaceae family's plant species extant in Khulna Division, Bangladesh.**

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>Abrus precatorius</i> L.	Kunch	L, w	Na	All districts	Occasional	LC	M	SSS 6010
<i>Acacia auriculiformis</i> A. Cunn. ex Benth.	Akashmoni	T, pl	Ex	All districts	Common	NA	Tm	SSS 6002
<i>A. mangium</i> Willd.	Mangium	T, pl	Ex	All districts	Common	NA	Tm	SSS 6015
<i>Adenanthera pavonina</i> L.	Raktachandan	T, pl	Na	All districts	Occasional	NA	Tm, M	SSS 6033
<i>Aeschynomene aspera</i> L.	Shola	S, w	Na	All districts	Common	NA	Gm, Fw	SSS 6023
<i>A. indica</i> L.	Bhathsola	S, w	Na	All districts	Common	NA	Gm, Fw	SSS 6003
<i>Aganope heptaphylla</i> (L.) Polhill	Pan-nata	L, w	Na	S, Kh, B	Occasional	VU	M	DACB 47453
<i>Albizia chinensis</i> (Osbeck) Merr.	Chakua koro	T, pl	Na	All districts	Common	LC	Tm	SSS 6055
<i>A. julibrissin</i> Durazz.	Golapi siris	T, pl	Na	All districts	Common	NA	Tm	SSS 6007
<i>A. lebeck</i> (L.) Benth.	Kalo koro	T, pl	Na	All districts	Common	LC	Tm	SSS 6019
<i>A. lucida</i> (Jacques) Benth.	Motor koro	T, pl	Na	Ja, Kh, Ma, Me, Na	Common	LC	Tm, M	SSS 6038
<i>A. procera</i> (Roxb.) Benth.	Sada koro	T, pl	Na	All districts	Common	LC	Tm, Fw	SSS 6040
<i>Amherstia nobilis</i> Wall.	Raj ashok	T, pl	Ex	Ja, Kh, Me	Occasional	NA	O	SSS 6186
<i>Alysicarpus bupleurifolius</i> (L.) DC.	Pan-nata	H, w	Na	B, Ja, Kh, S	Occasional	NA	M	SSS 6156
<i>A. ovalifolius</i> (Schumach.) J.Léonard	Nk	H, w	Na	B, Kh	Rare	EN	Gm, M	SSS 3520
<i>A. rugosus</i> (Willd.) DC.	NK	H, w	Na	Kh, Ku	Rare	VU	Fo, M	SSS 6218
<i>A. vaginalis</i> (L.) DC.	Pan-nata	H, w	Na	All districts	Common	NA	Fo, Sb	SSS 6096
<i>Arachis hypogaea</i> L.	Cheena badam	H, cv	Ex	C, Ja, Jh, Kh, Ku, Ma, Me	Occasional	NA	N, Oy	SSS 6406
<i>A. pinto</i> Krapov. & W.C.Greg.	Badam phul	H, pl	Ex	Kh, Ja, Ku	Occasional	Na	O	SSS 6309

Table 1 contd.

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>Bauhinia acuminata</i> L.	Sada kanchan	S, pl	Ex	All districts	Common	LC	O	SSS 6380
<i>B. purpurea</i> L.	Raktakanchan	T, pl	Na	All districts	Common	LC	M, O	SSS 6395
<i>Brachypterum scandens</i> (Roxb.) Wight & Arn. ex Miq.	Mahajanilata	L, w	Na	B, C, Ja, Kh, Na, S,	Occasional	LC	M	DACB 8998
<i>Brownea coccinea</i> Jacq.	Supti	T, pl	Ex	B, Jh, Kh, Ku, Me	Occasional	NA	O	SSS 6381
<i>Butea monosperma</i> (Lam.) Kuntze	Palash	T, pl	Na	All districts	Occasional	LC	M, O	SSS 6339
<i>Caesalpinia pulcherrima</i> (L.) Sw.	Radhachura	S, pl	Ex	All districts	Occasional	NA	M, O	SSS 6392
<i>Cajanus cajan</i> (L.) Huth	Arhar	S, pl	Ex	All districts	Common	NA	M, Pu	SSS 6282
<i>C. scarabaeoides</i> (L.) Thouars	Banurkalai	H, w	Na	All districts	Common	NA	M	SSS 6189
<i>Calliandra emarginata</i> (Humb. & Bonpl. Ex Willd.) Benth.	Lal calliandra	T, pl	Ex	Ja, Kh, Ku, Me, Na	Occasional	NA	O	SSS 6128
<i>C. haematocephala</i> Hassk.	Powder puff	T, pl	Ex	All districts	Occasional	NA	M, O	SSS 6238
<i>Canavalia cathartica</i> Thouars	Kaloshim	H, w	Na	B	Rare	NA	Fb, Sb, M	Hossain <i>et al.</i> 2022
<i>C. gladiata</i> (Jacq.) DC.	Moushim	H, cv	Na	All districts	Occasional	NA	Vg, Gm	SSS 6147
<i>C. rosea</i> (Sw.) DC.	Banshim	H, w	Na	B	Rare	NA	M, Sb	Hossain <i>et al.</i> 2022
<i>Cassia fistula</i> L.	Sonalu	T, pl	Ex	All districts	Occasional	LC	M, O	SSS 6177
<i>C. javanica</i> L.	Java sonalu	T, pl	Na	B, Ja, Kh, Ku, Na, S	Rare	LC	M, O	SSS 6269
<i>Centrosema pubescens</i> Benth.	Projapoti shim	H, w	Ex	Ja, Kh, Ku, Ma, Me	Occasional	NA	M	SSS 6256
<i>Cicer arietinum</i> L.	Chhola	H, cv	Ex	All districts	Occasional	NA	Pu	SSS 6372
<i>Clitoria ternatea</i> L.	Aparajita	H, pl	Ex	All districts	Common	NA	M, O	SSS 6169
<i>Codariocalyx gyroides</i> (Roxb. ex Link) Hassk.	Beguni shalpan	H, w	Na	All districts	Occasional	NA	Gm	SSS 6114
<i>C. motorius</i> (Houtt.) H. Ohashi	Turup chandal	S, w	Na	All districts	Rare	NA	M	SSS 6271
<i>Crotalaria alata</i> Buch-Ham. Ex D. Don	Pakha-jhunjhuni	H, w	Na	All districts	Occasional	NA	Fo, Gm	SSS 6077
<i>C. juncea</i> L.	Shonpat	H, cv	Na	All districts	Occasional	NA	Fb	SSS 6180
<i>C. pallida</i> Aiton	Jhunjhuni	H, w	Na	All districts	Common	LC	Fb, M	SSS 6106
<i>C. prostrata</i> Rottler ex Willd.	Choto-jhunjhuni	H, w	Na	C, Kh, Ku, Ma	Common	NA	M	SSS 6782
<i>C. mysorensis</i> Roth	Misori-jhunjhuni	S, w	Na	B	Rare	NA	M	DACB 4690
<i>C. retusa</i> L.	Bil-jhunjhuni	H, w	Na	B, Kh, S	Occasional	NA	Fb, Gm	SSS 6142
<i>C. spectabilis</i> Roth	Pipli-jhunjhuni	H, w	Na	M, S	Occasional	NA	Fo, M	SSS 6085
<i>C. verrucosa</i> L.	Bansan	H, w	Na	B, Kh	Rare	NA	M	Hossain <i>et al.</i> 2022
<i>Cynometra ramiflora</i> L.	Singra	T, w	Na	B, Kh, S	Occasional	LC	M, Tm	SSS 6274

**Table 1 contd.**

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>Dalbergia candenatensis</i> (Dennst.) Prain	Chandalata	S, w	Na	B, Kh, S	Occasional	LC	M	Hossain <i>et al.</i> 2022
<i>D. horrida</i> var. <i>horrida</i>	Kutumkanta	S, w	Na	B, Kh, S	Occasional	LC	M	SSS 3470
<i>D. sissoo</i> DC.	Sissoo	T, pl	Na	All districts	Occasional	NA	Tm, Fw	SSS 6427
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Krishnachura	T, pl	Ex	All districts	Common	NA	O	SSS 6005
<i>Derris trifoliata</i> Lour.	Kalialata	H, w	Na	B, Kh, S	Common	LC	M	SSS 6028
<i>Entada phaseoloides</i> (L.) Merr.	Gila	L, w	Na	B, Kh	Rare	VU	M	SSS 6581
<i>Erythrina fusca</i> Lour.	Kanta mandar	T, pl	Na	All districts	Common	LC	M	SSS 6184
<i>E. stricta</i> Roxb.	Teliamandar	T, pl	Na	All districts	Common	LC	M	SSS 6230
<i>E. variegata</i> L.	Mandar	T, pl	Na	All districts	Occasional	LC	M, O	SSS 6058
<i>Flemingia macrophylla</i> (Willd.) Kuntze ex Merr.	Bara-salpan	S, w	Na	B, Ja, Kh, Me	Occasional	LC	M	SSS 6192
<i>F. semialata</i> Roxb. ex W.T. Aiton	NK	S, w	Na	S	Rare	NA	Si, M	DACB 9543
<i>Gliricidia sepium</i> (Jacq.) Kunth	Gliricidia	T, pl	Ex	Ja, Kh, Ku, Me	Occasional	NA	Gm, O	DACB 9375
<i>Grona heterophylla</i> (Willd.) H. Ohashi & K. Ohashi	Bon motorshuti	H, w	Na	B, C, Jh, Kh, Ku	Common	NA	M	SSS 6374
<i>G. triflora</i> (L.) H. Ohashi & K. Ohashi	Kulaliya	H, w	Na	All districts	Common	NA	M, Sb	SSS 6606
<i>Guilandina bonduc</i> L.	Nata	L, w	Na	B, Kh, S, Na	Rare	LC	M	SSS 6725
<i>Indigofera tinctoria</i> L.	Nil	H, pl	Na	B, Kh, S	Rare	NA	Dy, M	SSS 6668
<i>I. trifoliata</i> L.	Ban nil	H, w	Na	B	Rare	NA	Gm, M	Rahman <i>et al.</i> 2015
<i>Intsia bijuga</i> var. <i>bijuga</i>	Bhaela	T, w	Na	B, Kh	Occasional	EN	M	DACB 30908
<i>I. bijuga</i> var. <i>retusa</i> (Kurz) Sanjappa	Hinga	T, w	Na	B, Kh	Occasional	EN	M	SSS 6075
<i>Lablab purpureus</i> (L.) Sweet	Sheem	H, pl	Ex	All districts	Common	NA	Vg	SSS 6670
<i>Lathyrus aphaca</i> L.	Jangli motor	H, w	Na	C, Ja, Jh, Ma, Me	Occasional	NA	Fo, Vg	SSS 6721
<i>L. oleraceus</i> Lam.	Motor	H, cv	Ex	All districts	Occasional	NA	Pu, Vg	SSS 6726
<i>L. sativus</i> L.	Khesari	H, cv	Ex	All districts	Occasional	NA	Pu, Vg	SSS 6737
<i>Leptodesmia microphylla</i> (Thunb.) H. Ohashi & K. Ohashi	Chotomodi	H, w	Na	All districts	Rare	NA	Si	SSS 6098
<i>Leptospron adenanthum</i> (G.Mey.) A. Delgado	Ban barboti	H, w	Na	B, Ja, Kh,	Occasional	NA	Fo, M	SSS 6022
<i>Leucaena leucocephala</i> (Lam.) de Wit	Ipil-ipil	T, w	Ex	All districts	Common	NA	Fw	SSS 6732
<i>Medicago polymorpha</i> L.	Treful	H, w	Ex	B, C, Kh, Ja, Me, Ma, Na	Occasional	NA	Fo, M	SSS 6129
<i>Melilotus albus</i> Medik.	Sada methi	H, w	Na	All districts	Common	NA	M, Sp	SSS 6715
<i>M. indicus</i> (L.) All.	Bon methi	H, w	Na	J, M	Common	NA	Fo, M	SSS 6417

Table 1 contd.

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>Mezoneuron cucullatum</i> (Roxb.) Wight & Arn.	Kutum kanta	L, w	Na	B, Kh, S	Occasional	LC	Fw, M	SSS 6759
<i>Millettia peguensis</i> Ali	Gauj	T, pl	Na	Ja, Kh,	Rare	NA	M, O	SSS 6577
<i>Mimosa diplotricha</i> C. Wright	Bara lajjaboti	S, w	Ex	M, S	Occasional	NA	Sb, M	SSS 6545
<i>M. himalayana</i> Gamble	Kuch kanta	S, w	Na	J, Kh	Rare	NA	M	SSS 6717
<i>M. pudica</i> L.	Lajjabati	H, w	Ex	All districts	Common	NA	M, O	SSS 6116
<i>Mucuna gigantea</i> (Willd.) DC.	Boro alkushi	H, w	Na	B, Kh, S	Rare	NA	M	SSS 6134
<i>M. pruriens</i> (L.) DC.	Alkushi	H, w	Na	All districts	Common	NA	M	SSS 6772
<i>Moullava digyna</i> (Rottler) Gagnon & G.P. Lewis	Umul kuchi	L, w	Na	Kh, Ku, Na, Me	Rare	NA	M	SSS 6554
<i>Neptunia oleracea</i> Lour.	Pani lajjaboti	H, w	Na	B, S	Rare	NA	M	SSS 6786
<i>Neustanthus phaseoloides</i> (Roxb.) Benth.	NK	H, w	Na	B, C, Ja, Me, S	Common	LC	Fo, Si	DACB 27584
<i>Pachyrhizus erosus</i> (L.) Urb.	Keshur	H, cv	Ex	All districts	Occasional	NA	Vg	SSS 6774
<i>Parkinsonia aculeata</i> L.	Bilati babla	T, pl	Ex	S	Rare	DD	Fw, M	DACB 2736
<i>Peltophorum pterocarpum</i> (DC.) Backer ex K. Heyne	Halud krishnachura	T, pl	Ex	All districts	Occasional	NA	Fw, O	SSS 6149
<i>Phanera scandens</i> (L.) Lour. ex Raf.	Nagpat	L, w	Na	Ja, Kh, Ku	Occasional	LC	M	SSS 675
<i>P. vahlii</i> (Wight & Arn.) Benth.	Kanchan lata	L, w	Na	B, Ja, Kh, Ku	Occasional	NA	Fb, M	SSS 6742
<i>Phaseolus coccineus</i> L.	Begunilata shim	H, w	Ex	B, Kh, S	Rare	NA	Pu, M	SSS 3462
<i>P. vulgaris</i> L.	Farash bean	H, cv	Ex	All districts	Occasional	NA	Vg	SSS 6262
<i>Phyllodium pulchellum</i> (L.) Desv.	Jata salpani	S, pl	Na	All districts	Occasional	NA	M, O	SSS 6483
<i>Pithecellobium dulce</i> (Roxb.) Benth.	Khai-babla	T, pl	Ex	All districts	Occasional	NA	Fr, M	SSS 6187
<i>Pleurolobus gangeticus</i> (L.) J.St.-Hil. ex H. Ohashi & K. Ohashi	Salpani	S, w	Na	All districts	Common	NA	M	SSS 6267
<i>Pongamia pinnata</i> (L.) Pierre	Karanja	T, pl	Na	B, Kh, S	Occasional	LC	M, Bf	SSS 6112
<i>Pseudalbizzia niopoides</i> var. <i>niopoides</i>	Gagan siris	T, pl	Ex	All districts	Common	NA	Tm	SSS 6648
<i>Psophocarpus tetragonolobus</i> (L.) DC.	Kamranga shim	H, cv	Ex	All districts	Occasional	NA	Vg	SSS 6751
<i>Pterocarpus indicus</i> Willd.	Rakto chandan	T, pl	Ex	Ja, Kh	Occasional	NA	Tm, M	SSS 6247
<i>P. santalinus</i> L.f.	Lal chandan	T, pl	Ex	Ja, Kh	Occasional	NA	Co, M	SSS 6746
<i>Rhynchosia minima</i> (L.) DC.	Mini bhatraji	H, w	Na	B	Rare	NA	Fo, M	DACB 35738

Table 1 contd.

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>R. rufescens</i> DC.	Shim bhatraji	H, w	Na	B	Rare	NA	Sb, M	DACB 35733
<i>Samanea saman</i> (Jacq.) Merr.	Randi-koroi	T, pl	Ex	All districts	Common	NA	Tm, Fw	SSS 6053
<i>Saraca asoca</i> (Roxb.) W.J. de Wilde	Ashok	T, pl	Na	All districts	Common	LC	O, M	SSS 6389
<i>S. indica</i> L.	Ashok	T, pl	Ex	Ja, Kh, Ku	Rare	LC	O, M	SSS 6348
<i>Senegalia catechu</i> (L.f.) P.J.H.Hurter & Mabb.	Khair	T, pl	Na	All districts	Rare	LC	Dy, M	SSS 6542
<i>Senna alata</i> (L.) Roxb.	Dadmardan	S, w	Ex	All districts	Occasional	NA	M, O	SSS 6713
<i>S. occidentalis</i> (L.) Link	Bara chalkesunda	S, w	Ex	All districts	Occasional	NA	M	SSS 6171
<i>S. polyphylla</i> (Jacq.) H.S.Irwin & Barneby	Rani chura	T, pl	Ex	B, Kh, Ku, Ma, Me,	Occasional	NA	M, O	SSS 6062
<i>S. siamea</i> (Lam.) Irwin & Barneby	H.S. Minjiri	T, pl	Ex	All districts	Occasional	NA	M, Tm	SSS 6672
<i>S. sophera</i> (L.) Roxb.	Kalkesunda	S, w	Ex	All districts	Common	NA	M	SSS 6662
<i>S. surattensis</i> (Burm.f.) H.S.Irwin & Barneby	Surati senna	S, pl	Na	Kh, Ja	Occasional	NA	M, O	SSS 6206
<i>S. tora</i> (L.) Roxb.	Chakunda	H, w	Ex	All districts	Common	NA	M	SSS 6667
<i>Sesbania bispinosa</i> (Jacq.) W.Wight	Dhaincha	H,cv	Na	All districts	Common	NA	Fw, Gm	SSS 6714
<i>S. cannabina</i> (Retz.) Poir.	Dhanchi	H, cv	Na	C, Ja, Jh, Ma, Me	Occasional	NA	Fo, Si	SSS 6663
<i>S. grandiflora</i> (L.) Poir.	Bakful	T, pl	Ex	All districts	Common	NA	Vg	SSS 6675
<i>S. sesban</i> (L.) Merr.	Jyonti	H, w	Na	All districts	Occasional	NA	Fo, Si	SSS 6665
<i>Smithia blanda</i> Wall. ex Wight & Arn.	Bat-shakuriao	H, w	Na	Ja, Kh, Ku, Ma	Occasional	NA	Fo, Gm	SSS 6212
<i>Sohmaea laxiflora</i> (DC.) H. Ohashi & K. Ohashi	NK	S, w	Na	B, Kh, Na, S	Rare	NA	M	SSS 6661
<i>Tadehagi pseudotriquetrum</i> (DC.)	Ram manda	S, w	Na	B	Rare	NA	M	Rahman <i>et al.</i> 2015
<i>T. triquetrum</i> (L.) H. Ohashi	Luri manda	S, w	Na	All districts	Occasional	NA	M	SSS 6711
<i>Tamarindus indica</i> L.	Tentul	T, pl	Ex	All districts	Common	NA	Fr, Tm	SSS 6659
<i>Tephrosia candida</i> DC.	Bilakshani	H, w	Na	C, Ku, Ma	Occasional	NA	Fo, Si	SSS 6144
<i>T. purpurea</i> (L.) Pers.	Bon-neel	H, w	Na	All districts	Common	NA	M	SSS 6358
<i>Trigonella foenum-graecum</i> L.	Methi	H, cv	Ex	All districts	Occasional	NA	M, Sp	SSS 6657
<i>Ticanto crista</i> (L.) R.Clark & Gagnon	Kutumkata	L, w	Na	B, Kh, S,	Occasional	VU	M	SSS 6684
<i>Uraria lagopodioides</i> (L.) DC.	Chakulia	H, w	Na	B, C, Jh, S	Occasional	NA	M	SSS 6710
<i>U. picta</i> (Jacq.) Desv. ex DC.	Shankar jata	H, w	Na	All districts	Occasional	NA	M	SSS 6709
<i>Vachellia farnesiana</i> (L.) Wight & Arn.	Belati babla	T, pl	Ex	All districts	Occasional	NA	M, Pf	DACB 10091
<i>V. nilotica</i> (L.) P.J.H. Hurter & Mabb.	Babla	T, pl	Na	All districts	Occasional	NA	Dy, Fo	SSS 6693

**Table 1 contd.**

Scientific name	Bangla name	Habit	Origin	Distribution	Occurrence	Red list status	Use	RSE
<i>Vicia hirsuta</i> (L.) Gray	Masurechana	H, w	Na	All districts	Occasional	NA	Fo, Si	SSS 6276
<i>V. lens</i> (L.) Coss. & Germ.	Masur	H, cv	Ex	All districts	Occasional	NA	Gm, Pu	SSS 6283
<i>V. sativa</i> L.	Ankari	H, w	Na	All districts	Occasional	NA	Fo, Gm	SSS 6278
<i>Vigna luteola</i> (Jacq.) Benth.	Holdey mug	H, w	Na	B, Kh, S	Rare	NA	Fo, Gm	Rahman <i>et al.</i> 2015
<i>V. marina</i> (Burm.) Merr.	Nonta shim	H, w	Na	B, Kh, S	Rare	NA	Gm, Vg	SSS 6433
<i>V. mungo</i> (L.) Hepper	Mashkalai	H, cv	Ex	All districts	Occasional	NA	Gm, Pu	SSS 6679
<i>V. radiata</i> (L.) R.Wilczek	Moog	H, cv	Na	All districts	Occasional	NA	Fo, Pu	SSS 6740
<i>V. trilobata</i> (L.) Verdc.	Mugani	H, w	Na	B, Kh	Rare	NA	Fo, Gm	SSS 3456
<i>V. unguiculata</i> (L.) Walp.	Borboti	H, cv	Ex	All districts	Common	NA	Fo, Vg	SSS 6383
<i>Xylia xylocarpa</i> (Roxb.) W.Theob.	Lohakath	T, pl	Na	All districts	Occasional	NA	Tm, M	SSS 6736
<i>Zornia diphylla</i> (L.) Pers.	Nk	H, w	Na	B, Kh	Rare	NA	M	DACB 30797

**Notes:** **Habit:** H-Herb, S-Shrub, T-Tree, L-Liana, cv-cultivated, pl-Planted; **Origin:** Ex-Exotic, Na-Native; **Distribution:** B-Bagerhat, C-Chuadanga, J-Jashore, Jh-Jhenaidah, Kh-Khulna, Ku-Kushtia, Ma-Magura, Me-Meherpur, Na-Narail, S-Satkhira. **Red List status:** DD- Data deficient, EN- Endangered, VU- Vulnerable, LC-Least Concern, NA-Not Assessed; **Use:** Dy-Dye yielding, Fb-Fibre yielding, Fo-Fodder, Fr-Fruit, Fw-Fuel wood, Gm-Green manure, M- Medicine, N-Nut, O- Ornamental, Oy-Oil Yielding, Pu-Pulse, Sb-Soil binder, Si-Soil improver, Sp-Spice, Tm-Timber, Vg-Vegetable; **RSE-** Representative Specimen Examined, **DACB-** Bangladesh National Herbarium, **SSS-**Shayla Sharmin Shetu.

The findings of this study will contribute to knowing the ethnobotanical importance of the family in the study area, for evaluating its potential socioeconomic significance, and for assessing the threatened plant species for IUCN's red listing. Furthermore, the taxonomic data presented here will support future research on plant genetic resources, biodiversity assessments, and conservation initiatives related to Fabaceae in Bangladesh. The data provided by this study will be particularly useful for resource managers, conservation planners, and red-listing authorities in developing effective conservation and management strategies to safeguard these valuable plant resources. The taxonomic information generated through this study will advance fundamental knowledge of Fabaceae in Bangladesh and provide a reliable baseline for future studies.

The study area is currently facing several anthropogenic and natural threats, including habitat loss, over-exploitation, pollution, riverbank erosion, seasonal flooding, and water logging. In light of these challenges, the study strongly recommends the development and implementation of a comprehensive master plan aimed at mitigating these threats and ensuring the sustainable management and conservation of plant resources. Additionally, reducing human pressures, increasing public awareness, and improving the condition of key natural habitats are essential for the long-term conservation of the region's vegetation.

## Conclusion

This pioneering taxonomic study, the first exclusive assessment of leguminous plants in Khulna Division, Bangladesh, documents 142 species under 80 genera of Fabaceae, underscoring the remarkable botanical diversity of the region. The predominance of herbaceous life forms (46.48%) alongside a substantial wild species proportion (54.23%) of this plant group suggests a

naturally self-sustaining flora, while the considerable share of cultivated species (45.77%) highlights longstanding human dependence on legumes for food, fiber, and livelihoods. Nearly two-thirds of the documented taxa of the plant group (65.50%), constituted of native species, points to a relatively well-preserved indigenous plant community in the region, whereas the existence of 34.50% exotic species warrants continuous monitoring for potential ecological disruption. Homesteads and woodlands emerged as the most species-rich habitats, reinforcing the importance of non-forest land-use types in conserving plant biodiversity. The widespread distribution of 74 species across all ten districts of the division demonstrates strong ecological adaptability. Further research is required to recognize the cause of the significant variation in species composition or whether there is any localized environmental or human influence on this variation.

The IUCN threatened status of several taxa, such as *Alysicarpus ovalifolius*, *Intsia bijuga* var. *bijuga*, *Intsia bijuga* var. *retusa*, *Aganope heptaphylla*, *Alysicarpus rugosus*, *Entada phaseoloides*, and *Ticanto crista*, combined with a high proportion of occasional (49.3%) and rare (21.83%) species, signals an urgent need for targeted conservation interventions. Economically, the overwhelmingly important role of the Fabaceae, as well as their well-documented contributions to nitrogen fixation, soil binding, and crop rotation, affirms that the conservation and rational use of the legumes and sustainable land management in the study area are inseparable from the well-being of local communities and agricultural systems. The results of this study offer a crucial baseline for further floristic, ecological, and conservation studies and strongly recommend for the conservation of both wild habitats and ethnobotanically significant leguminous species throughout Bangladesh.

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