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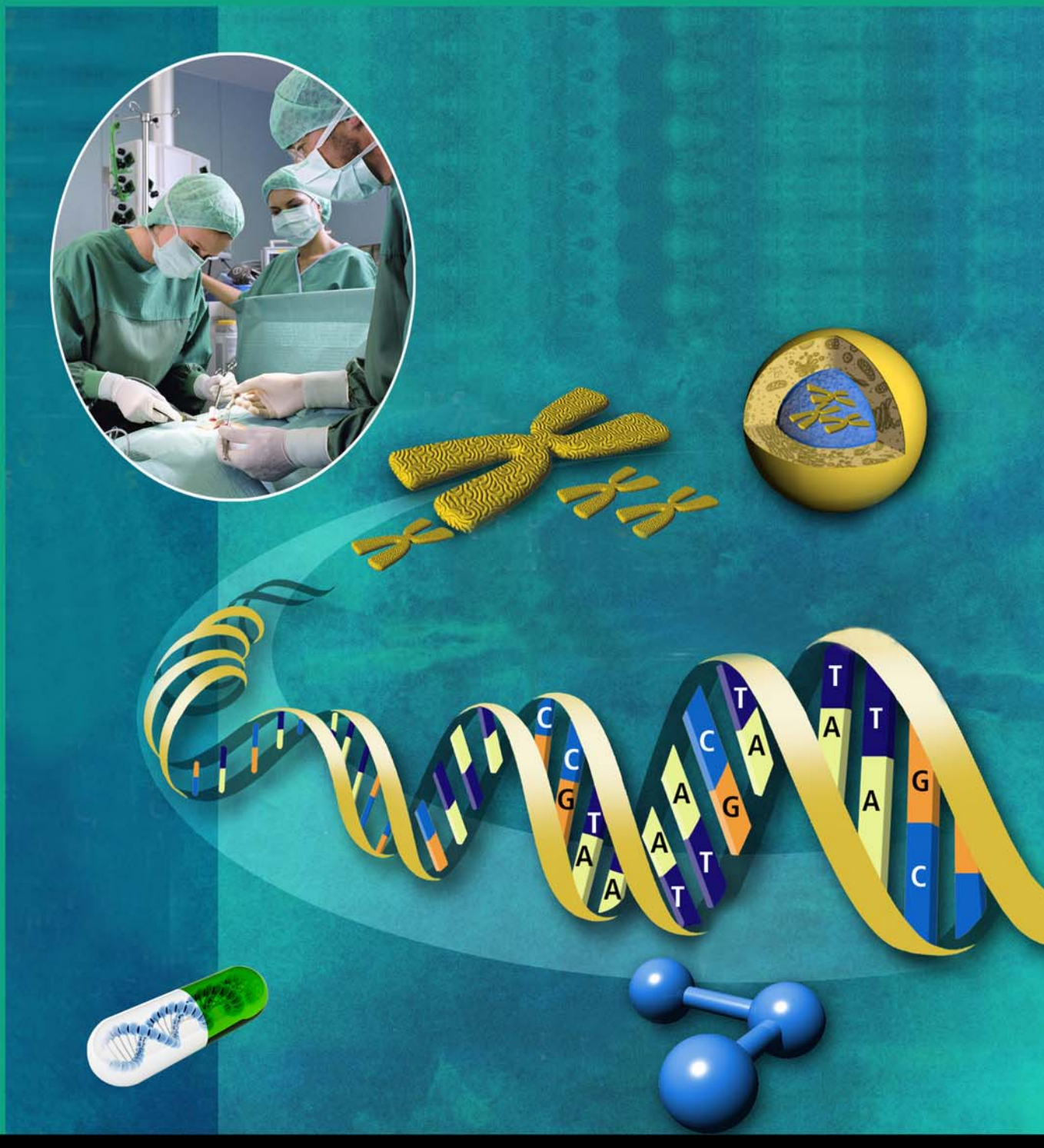

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Research Paper

THE ASSESSMENT OF DESERTIFICATION CONTROL BY FABACEAE FAMILY OF BUNDELKHAND REGION, UP, INDIA

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Fabaceaus plants play a major role for the land which leads to desert like condition and depleted surface. It is considered as a Bundelkhand region where structural entity on the basis of topographic, climate, soil geography and socio-cultural profile. The floristic assessment provides an overlapping vegetation pattern due to varied ecological and climatic habitat. The vegetation of Bundelkhand region is emphasized by xerophytic adaptations, where some of the common sp. are grown well such as *Abrous precatorious, Aschynomene indica, Alhagi maurorum, Alysicarpous vaginalis, Butea monosperma, Rhynchosia minima, Tephrosia villosa,* etc., this vegetation can help in the development of new vegetation in the desert region.

Key words: Fabaceae, Bundelkhand region, Desertification

INTRODUCTION

The family Fabaceae is the largest family in Dicotyledons with cosmopolitan distribution, including about 100 genera and 1083 species (Jain 1983) in India, while Duthie (1903-29) includes 57 genera and 189 species of family Fabaceae in Upper Gangetic Plain of which 93 species and 39 genera were reported from Bundelkhand region. The region is one of the richest and interesting transitional botanical regions among western desert, Gangetic plain and Deccan Plateau and has quite varied flora. The Bundelkhand region includes seven districts, i.e., Banda, Jalaun, Lalitpur, Hamirpur, Mahoba, Jhansi and Chitrakoot (Figure 1). Among these, Banda (includes Chitrakoot) was first explored by Edgeworth (1852-67). Raizada (1976) published a supplement of 33 additions made to Duthie flora. Kangilal (1933) mention only casual reference to plants of this region, they did not given any particular district. The distribution of Fabaceous plants in Bundelkhand region (UP) compiled from district floras. Bhattacharya and Malhottra (1964) enumerate 47 species of 27 genera from Hamirpur district and the herbaceous flora of Jhansi was described by Trivedi *et al*.

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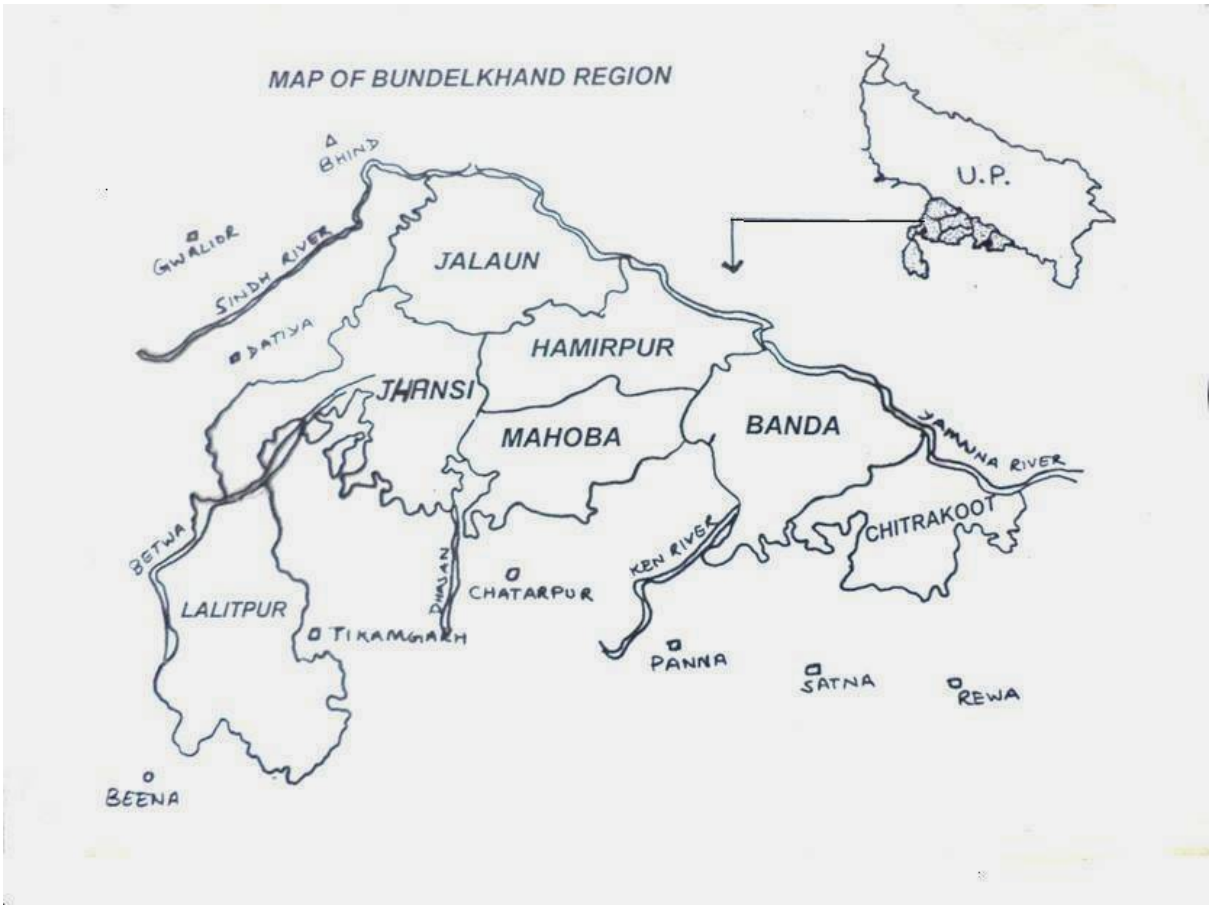
Figure 1: Map of Bundelkhand Region



(1979) while Satya Narain (2001) published notes of Legumes of Hamirpur district (including Mahoba). According to earliest study has been reveled by Narain and Singh (2008), of the region where the Legume are most dominant.

RESULTS AND DISCUSSION

Uttar Pradesh is the most densely populated region of India and having been under continuous and intensive cultivation, due to which forest areas reduced and lost its original identity of flora. Tremendous increase in human population most of the place replaced even xerophytic vegetation to open dry grasslands forming grazing tracts has contributed a great deal of developing desert. The biotic factors are also play an important role in the formation and extension of spread of the desert. The Bundelkhand region is also affected for the extension of desert eastward. Vast areas of forest were used for fire wood, much beyond their reparative power. The applied fertilizers in fields are available for the plants due to deep percolation of water due to which the vegetation remain stresses.

Fabaceous plants play a major role for the land which leads to desert like conditions and depleted surface. The presence of root nodules they have Nitrogen-fixing capacity can helps in development

of new vegetation or floras in the desert region. Behalf of herbarium and study of literature we compiled there is 23 species of family Fabaceae, are most common in Bundelkhand region belong to 17 genera such as *Alysicarpous, Butea, Dalbergia, Desmodium, Lathyrus, Medicago, Mellilotus, Pisum, Tephrosia* etc. The Bundelkhand region is represented by about 39 genera and 93 species as raw floristic account of family Fabaceae, which grown well in this desert region for e.g., *Aeschynomen indica, Alhagi maurorum, Alysicarpous monilifer, A. vaginalis, Atylosia scarabaeoides, Butea monosperma, Crotalaria burhia, C. juncea, Dalbergia sp., Pongamia pinnata, Indigofera sp., Rhynchosia minima, Tephrosia villosa,* etc. The analytical account is given here, in which shows 21.39% species are common in all the four districts, 15.81% species common in three, 13.95% are present in two and 16.74% species are not found in any districts (Table 1). Accept this we show a comparison of 10 dominant families in Bundelkhand region, given in order of the frequency of species. There is a general resemblance of the flora of these areas, as far as the ten dominant families are concerned; mainly the grasses and Fabaceous plants occupy the foremost places in all these regions. Family

Table 1: Statistic Diversity of Fabaceae Family in Bundelkhand Region, UP, India

No. of species common in Bundelkhand region (%)			No. of species not found in the region	Total No. of Species In The Region	Habit			
All the Four District	All the Three District	All the two District			Herbs	Trees	Climber	Shrubs
23 (21.39%)	17 (15.81%)	15 (13.95%)	18 (16.74%)	93	63 (58.59%)	15 (13.95%)	8 (7.44%)	7 (6.51%)

Table 2: Comparative Analysis of Ten Dominant Families in Bundelkhand Region

S. No.	India Hooker (1904)	FUGP Hooker (1907)	RajasthanBhandari (1990)	Banda Sinha (1987)	Jalaun Shukla (1989)	Lalitpur Ranjan (1993)	Hamirpur Narain (1996)
1.	Orchidaceae	Poaceae	Poaceae	Poaceae	Poaceae	Poaceae	Poaceae
2.	Leguminoseae	Leguminoseae	Fabaceae	Fabaceae	Fabaceae	Fabaceae	Fabaceae
3.	Poaceae	Cyperaceae	Asteraceae	Asteraceae	Asteraceae	Asteraceae	Asteraceae
4.	Rubiaceae	Asteraceae	Cyperaceae	Cyperaceae	Cyperaceae	Cyperaceae	Cyperaceae
5.	Euphorbiace	Scrophulariace	Convolvulaceae	Acanthaceae	Acanthaceae	Euphorbiaceae	Acanthaceae
6.	Acanthaceae	Malvaceae	Malvaceae	Euphorbiaceae	Euphorbiaceae	Acanthaceae	Euphorbiaceae
7.	Asteraceae	Acanthaceae	Euphorbiaceae	Convolvulaceae	Malvaceae	Scrophulariace	Malvaceae
8.	Cyperaceae	Euphorbiaceae	Acanthaceae	Malvaceae	Caesalpinace	Convolvulace	Convolvulace
9.	Lamiaceae	Convolvulace	Mimosaceae	Amaranthace	Convolvulace	Rubiaceae	Scrophulariace
10.	Urticaceae	Lamiaceae	Cucurbitaceae	Scrophulariace	Amaranthace	Amaranthace	Amaranthace

Cyperaceae and Asteraceae take up the next position as far as family Urticaceae, Cucurbitaceae, Lamiaceae, Scrophulariaceae, Amarantheceae are lost there identity as well as poorly resistant to desert. There is given the diversity (Table 2) of Bundelkhand region, where the plants of family Fabaceae are more suitable to control the soil fertility due to this, desertification should also be controlled. These plants are tolerant more then other flowering plants with there soil binding capacity.

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