In our earlier study, purified phytocystatin from long series of observations (Sahu, 2003). localities has accumulated over a sufficient span, through a behaviour of complex ecology and utilization system in the indigenous knowledge of the aboriginal people based on the \( \text{coined by Harshberger in 1895 for the study of plants used} \)

half of the twentieth century. The term ethnobotany was first coined by Harshberger in 1895 for the study of plants used by primitive and aboriginal people (Trivedi, 2002). The broad indigenous knowledge of the aboriginal people based on the behaviour of complex ecology and utilization system in the localities has accumulated over a sufficient span, through a long series of observations (Sahu, 2003).

In our earlier study, purified phytocystatin from Catharanthus-roseus has been reported to possess strong antioxidant activity in the purified inhibitors CRC-I and II against \( E. \ coli \) and S. aureus [Sharma et al. 2011]. The present research work is concerned with the ways of human perception and use of plants, and the influence on the environment. Efforts shall also be made to adopt an interdisciplinary and utilitarian approach by probing into the ethos of local population and their understanding of the immediate environment with a bearing of the relationship to plants coupled with its regulation on their day to day usages vis-a-vis interaction. The Bhoja, Bengalis, and some Bhotias tribal groups are inhabitants living in Haldaur, Nehtaur, Chandpur, Noorpur, Dhampur, and Bijnour. The present work focuses on the ethnobotanical study and survey of district Bijnour with special focus on the traditional medicinal plants and their religious and ornamental significance, the plant parts used and the dosage and route of administration. The study, documents comprehensive information about the plants given by traditional healers, vaidyas and elderly people interviewed in district Bijnour.

Materials and Methods

The work was undertaken through field study carried out throughout the seasons of August 2010 to May 2014 in various areas of Bijnour. To fulfill this purpose, ethnobotanical survey of areas around district Bijnour (western U.P.) were selected to collect the information through traditional medicinal plant healers and practitioners. Attempt was also made to provide the most acceptable scientific, common and local names, FL (Fidelity level) values of various plants of medicinal, traditional and religious significance found in the study area. First hand information about the folk medicinal uses of plants was collected from the traditional healers, Vaidyas, Hakims, Jarrahs, Tribals and elderly rural people. The age of the respondents ranges between 45 to 80 years and the number of male respondents was higher (80%) as compared to the female respondents (20%). Few of the informants were reluctant to reveal any information but many of them consented for collection from the forest/agricultural lands and for the interviews. The village cultivators, also revealed many plants used for daily ailments and also agreed for field trips to identify the plant species.

The specimens have been identified using relevant floras and standard literature (Hooker, 1989, Kanjilal et al. 1982 and Gaur, 1999). The respondents were selected randomly and prior informed consent was obtained from each respondent to get traditional knowledge of the plants.

Results

Documentation and conservation of the medicinal plants has become big challenge to scientific communities throughout the world. The forests/agricultural regions of western Uttar pradesh is a rich source of medicinal plants due to its geographical and climatic conditions. The present study provides an account of 22 medicinal plants belonging to 22 species. Out of which 18 plants belong to different families while rest of them belong to the same family. Ethnobotanical survey and study of the medicinal plants revealed in the present study are being utilized to treat and cure 57 diseases/deficiencies and ailments, which includes: “Gastric disorders, piles, oedema, jaundice, obesity, paediatric disorders, urinary complaints, gynaecological disorders, rotavirus, giardia, kidney pain, appendicitis, placental disorders, migraine, inflammation and allergy caused by honey-bee bite, skin infections, asthma, diabetes, diarrhoea, epilepsy, dengue, enlarged spleen, urological disorders, regulation of blood pressure, bone strengthening, protein deficiency, cough and cold, viral conjunctivitis of eyes and eye inflammation, improper bowel movements, bronchitis, hypertension, reoval of gall bladder and kidney stones, to treat boils, corns and calluses on the feet, burn wound healing, swelling and joint pain, hair line bone dislocation, appetite stimulant, mouth ulcers, liver related ailments, diuretic, anti pyretic, hypercholesteremia, strengthening hair follicles, skin moisturiser and softening, rheumatism, gout, tranquiliser, depression, malnutrition, Vitamin C, B, K, mangenese and essential amino acid deficiency, abortions, induction of labor and contraceptive, insect repellant, chicken-pox, eczema, malaria and apopto-
sis”. Table-1 presents comprehensive overview of the medicinal plants found in district Bijnor.

Most of the preparations are orally administered either as extract, juice, churn, syrup powder or pasted in the form of paste, dust/powder, decoction etc. The plant parts used include root, trunk, leaves, flowers, ripened and unripened fruit and seeds. There is enough scope of the amalgamation of these drugs in the mainstream of prenatal medicine suggested today after the tribal drug are subjected to the phytochemical and biological screening, together with clinical trials. The medicinal plants that are widely used by the local people have higher FL values than those are less popular. On the other hand, medicinal plants that can be utilized to treat single ailment have 100% fidelity level in comparison with those medicinal plants that are being used as a remedy for more than one ailment. In our study, we conclude that extract of Aloe vera, Curcuma longa, Catharanthus roseus and Piper nigrum if taken in combination reduces blood glucose levels and lipid profile to a significant level, and thus have 100% fidelity level. Otherwise, rest of the medicinal plants discussed in the present study are being utilized to treat multiple diseases.

Discussion
This study has documented the variety of plants and their uses by these people. Interviews conducted at numerous households in the regions of Nehtaur, Mandavar, Chandpur, Noorpur, Dhampur, Aftalgarh, Keeratpur and other adjoining villages in district Bijnor give us an idea on local dependence of villagers and healers to forest/agricultural land resources as a means of sustenance. During our numerous interviews and interactions with healers/village dwellers, we noticed a vivid significant information documented in this study. The need of the hour is to do strong networking with potential collaborators at national and international level and these collaborators may include expert academicians, botanists, ethnobotanists, scientists and researchers in both private and government organizations as well as strong international funding agencies with a sincere approach which can contribute in conserving the existing ethnobotanical resources, extinct plant species with traditional and medicinal significance and medicinal plants of western Uttar Pradesh (UP) which will help us in taking a step ahead in taking out the conserved ethnobotanical data out of Research and development labs and will further help in promoting the Indian ethnobotanical knowledge at national and international level.

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Table 1: Overview of “Medico-ethnobotany” of medicinal plants found in district Bijnor (U.P.) with their religious/oriental significance

| S. No. | Botanical name | Family | Vernacular name | Flowering-fruited season | Traditional Medicinal Significance/Uses | Religious /Ornamental significance |
|--------|----------------|--------|-----------------|---------------------------|---------------------------------------|-----------------------------------|
| 1      | Catharanthus roseus (Linn.) | Apocynaceae | Sadabahar | April- September | Leukemia/Malaria and Diabetes: 20gms of root and shoot extract is given in the form of paste, (2g/serving). Even 5-10ml of extract in water is prescribed once in a day | Pink and white flowers are beautiful and the plant is grown in gardens for beautification. |
| 2      | Bryophyllum pinnatum (Linn.) | Crassulaceae | Pattharchat | April-July | Kidney and Gall stones: get dissolved in 15-20 days, 2-3 leaves chewed empty stomach, paste applied to heal boils and calluses, dislocated bones and joint pain. | None |
| 3      | Argemone maxicana (Linn.) | Papaveracea | PeeliKatheli | May-July | Infusion helps expel torn placenta, used as sedative, to treat dengue and constipation | None |
| 4      | Calotropis procera (Linn.) | Asclepiadaceae | Akh/Mudar | May-July | None | Flowers and leaves are offered during Shivratri, and are considered to be auspicious, keeps away bad spirits |
| 5      | Nerium oleander (Linn.) | Apocynaceae | Lalkaner | April-June | None | Pink and red flowers are used to decorate lawns and gardens |
| 6      | Pterocarpus santalinus (Linn.) | Fabaceae | Lalchandani | September- November | Alleviates Skin allergies: Bark is crushed and paste is applied on skin | Sacred and used during ritual, ceremonies and worship |
| No. | Species Name | Family | Common Names | Season | Medicinal Uses |
|-----|--------------|--------|--------------|--------|---------------|
| 7.  | *Solanum nigrum* (Linn.) | Solanaceae | Makoi | April-June | Gastric, Respiratory and hepatic problems: Berries chewed to cure diseases |
| 8.  | *Ficus religiosa* (Linn.) | Moraceae | Peepal | May-September | Cures gastric respiratory problems, controls dyspepsia; leaves used as a tannin. |
| 9.  | *Cannabis sativa* (Linn.) | Cannabaceae | Bhaang | April-May | Rheumatoid arthritis and Piles: soup relieves pain and depression, used to cure piles and as a tannin. |
| 10. | *Acyranthes aspera* (Linn.) | Amaranthaceae | Latjeera | April-June | Obstetrics and gynaecological problems: Boiled leaf extract is used for abotions and induction of labor |
| 11. | *Ziziphus mauritiana* (Linn.) | Rhamnaceae | Ber | December-February | Alleviates gout and rheumatism: Juice of the root bark (4-5 ml), twice/day is given. The root decoction heals wounds and reduces flatulence. |
| 12. | *Aloe vera* (Linn.) | Xanthorrhoeaceae | Gwar-patha | March-April | Used during inflammation, to reduce blood sugar levels and cure cancer as extract and juice. |
| 13. | *Phyllanthus emblica* (Linn.) | Phyllanthaceae | Amla | November-February | Fruit and boiled leaf extract cures osteoporosis, arthritis, renal diseases and pancreatitis. |
| 14. | *Ficus benghalensis* (Linn.) | Moraceae | Bargad | May-August | None |
| 15. | *Ocimum tenuiflorum* (Linn.) | Lamiaceae | Tulsi | April-June | Insect repellent to store grains, to cure sore throat, cold and cough. |
| 16. | *Curcuma longa* (Linn.) | Zingiberaceae | Haldi | October-December | Diabetes and blood clotting: Rhizome is cooked along with other leafy vegetables in required amounts (10-20 g/serving), reduces blood sugar and helps to alleviate certain skin allergies. |
| 17. | *Artocarpus heterophyllus* (Linn.) | Moraceae | Kathal | March-June | Alleviates Potassium, calcium and iron deficiency: 100 gm of ripe fruit/once in 2 days also strengthens bones. |
| 18. | *Morus nigra* (Linn.) | Moraceae | Shehtoot | March-May | Fruits are eaten to treat epilepsy and diarrhoea and to stimulate immune system. |
| 19. | *Ricinus communis* (Linn.) | Euphorbiaceae | Arandi | April-August | Oil is applied to strengthen bones and relieve joint pain, has strong antioxidant activity. |
| 20. | *Aegle marmelos* (Linn.) | Rutaceae | Bel-patthar | April-June | Combating Giardia and Rotavirus (diarrhoeal diseases) in infants: Unripe Baelfruit given in the form of syrup (5-10 ml/twice a day) is effective. |
| 21. | *Moringa oleifera* (Linn.) | Moringaceae | Sahjan | April-June | Leaves and beans cooked with leafy vegetables provide rich source of essential amino acids and vitamins. |
22. *Ficus racemosa* (Linn.) Moraceae Goolar Mid February-July Bark decoction and paste is applied to cure honey-bee and insect bite, paste cures skin allergies Ripened fruit is offered to monkeys to please Lord Hanuman

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