

AN EVALUATION OF TRADITIONAL KNOWLEDGE BASED STUDIES IN UTTAR PRADESH AND UTTARAKHAND

Lokendra Singh, Preeti Vats and Ranjana

Doon (P.G.) Paramedical College, Dehradun

Abstract: Dwindling ethnicity in states in question and renaissance of traditional knowledge and phytotherapy especially in AYUSH systems of alternative medicine have prompted the authors to document the present scenario of traditional knowledge for the benefit of new researchers and technothirsty Herbalists because despite recognition of 175 medicinal species in Uttarakhand alone, there remains untapped reservoir of various phytochemicals awaiting intensive investigation for their biological activity based on existing pool of traditional knowledge which is being documented in present communication.

INTRODUCTION

Since remote past wide variety of plants/their parts (root, stem, bark, flower, fruit)/products (edible carbohydrates, proteins, carotenoids, fibers, gums, resins, flavonoids, terpenoids, vitamins, essential oils, etc.) are known to meet daily sustenance, religious, cultural, social, economic and health needs of human beings besides maintaining biodiversity and eco-equilibrium. Plants are also known for their nutritional, mineral, medicinal, aromatic and savory quality besides contraceptive, insecticidal and antioxidant properties (Singh and Vats, 2006; Ansari and Joshi, 2004; Agrawal, 1988).

Renaissance of traditional knowledge and phytotherapy became imperative due to the diversity, accessibility,

affordability, biodegradability, less phyto-toxicity, preventive as well as curative properties of NTFPS in Ayurvedic, Unani, Sidha, Homeopathic and Tibetan systems of alternative medicines used to treat stress related, anxiety related, psychosomatic, post traumatic, digestion related, radiation related, toxicity related, disability related, infection related and life style related disorders (Singh and Vats, 2006; Sharma, 2007). Consequently, ethnobotanical studies/traditional knowledge were undertaken in UP and Uttarakhand and their update is presented herein, especially so because agrotechniques of high altitude medicinal and aromatic plants may be developed in view of threats to plants and, herbal potential may be fully worked out. Present work comprises only of references without details for which papers cited may be referred to.

Table.1- Documentation of Ethnobotanical Studies in Uttar Pradesh and Uttarakhand

S.No.	Place	Author(s)	Year
1.	Supplementary food plants of Kumaon	K S Bhargava	1959
2.	Medicinal plants of Saharanpur	B S Ahuja	1965
3.	Plant lore of western UP	S B Arya	1965
4.	Medicinal Plants of Bhagirathi valley	S. Juyal & M R Uniyal	1966
5.	Ethnobotany of Kumaon	R. Sahay & N C Joshi	1973
6.	Botanical drugs from hill districts of UP	N C Shah	1975
7.	Wild edible fruits of Garhwal himalayas	R D Gaur	1977
8.	Some medicinal ferns from Pithoragarh hills	A K S Niranjana & J P Dude	1978
9.	Ethnobotany of district Garhwal	M. Kaur	1979
10.	Medicinal plants of Dharchula block (Pithoragarh)	A K Singh, S K Palvi & H. Singh	1980
11.	Ethnobotany of Tharus of Kheri district, UP	J K Maheshwari, K K Singh & S. Saha	1981
12.	Alpine flora of Tungnath, Garhwal	J K Semwal & R D Gaur	1981
13.	Ethnobotanical records of infectious diseases from tribals of Banda district	A P Saxena & K H Vyas	1981
14.	Unusual supplementary wild plants of Kumaon	P S Pangtey, R D Rawat & B. Kalakoty	1982
15.	Some medicinal plants of district Saharanpur	S. Bhargava	1982
16.	Ferns of Chakrata	S P Khullar, S S Sharma & P. Singh	1982
17.	Some little known wild edibles of Garhwal	R D Gaur & J.K. Semwal	1983
18.	Folk medicinal claims of Chakrata forests	V K Singh, A. Mohd & Abrar M Khan	1984
19.	Wild medicinal ferns of Shahjahanpur distt (UP)	S C Sharma	1985

- | | | | |
|-----|--|---|------|
| 20. | Ethnobotanical approach of Jaunsar & Siwalik | Wazahat Husain & M B Siddiqui | 1987 |
| 21. | Ethnobotany of Alpine regions of Kumaon | G S Rawat & Y P S Pangtey | 1987 |
| 22. | Some less known edible & economic ferns of Kumaon region of western Himalaya | P C Pande & Y P S Pangtey | 1987 |
| 23. | Ethnobotanical study of common trees in Garhwal | K S Negi, J K Tiwari & R D Gaur | 1987 |
| 24. | Socioeconomic plant resources in Vyasi valley of Tehri Garhwal | S K Dhyani & R K Sharma | 1987 |
| 25. | Ethnobotany of Kumaon Himalayas | N C Sahay and S K Jain | 1988 |
| 26. | Indian Butter Tree: some ethnobotanical notes | K S Negi <i>et al</i> | 1988 |
| 27. | Traditional herbal remedies of Tharus in Bahraich | K K Singh & J K Maheshwari | 1989 |
| 28. | Medicinal hydrophytes of Shahjahanpur | S C Sharma, R. Sarabhai & S A Ahmad | 1989 |
| 29. | Ethnobotanical wealth of district Muzaffarnagar | Dhrupal & S K Gupta | 1989 |
| 30. | Ethnobotanical importance of fern flora of Balmiki Nagar (Eastern U.P.) | R B Srivastava & R M P Verma | 1991 |
| 31. | Ethnobotany of Tons valley of Uttarkashi district | S K Jain & A. Saklani | 1991 |
| 32. | Ethnobotanical observations on some gymnosperms of Garhwal | H. Singh, A. Saklani & B. Lal | 1991 |
| 33. | Flavouring and masticating plants of Bhotias | K C Bhat, M.K. Bist & R D Gaur | 1991 |
| 34. | Folk medicines of Tharus of Gorakhpur | K K Singh & J K Maheshwari | 1992 |
| 35. | Medicobotanical studies on the trees of Badaun district | S C Sharma & Madhu Gautam | 1992 |
| 36. | Ethnobotany of Rajis in Pithoragarh district | K C Bhat & R D Gaur | 1992 |
| 37. | Ethnobotany of Bundelkhand | S K Saxena & J K Tripathi | 1993 |
| 38. | Ethnobotany of tribals of Kumaon | Pramila Joshi | 1993 |
| 39. | Traditional herbal medicines of Shahjahanpur distt., UP | S C Sharma | 1993 |
| 40. | Ancient therapeutic wealth of Tehri Garhwal | G S Negi | 1994 |
| 41. | Medicobotanical study in relation to veterinary medicines of Shahjahanpur | S C Sharma | 1995 |
| 42. | Common medicinal Pteridophytes | P. Kaushik & A K Dhiman | 1995 |
| 43. | Vedic medicinal plants of Hardwar region | P. Kaushik & A. Dhiman | 1995 |
| 44. | Ethnobotanical uses of some ferns amongst tribals of UP | K K Singh, S. Sahai & J K Maheshwari | 1997 |
| 45. | Ethnobotany of Pteridophytes of hilly districts of UP | Pramila Joshi | 1997 |
| 46. | Ethnobotany of Bhotia tribe of Kumaon | P. Joshi & P C Pande | 1997 |
| 47. | Medicinal plants from Nanda Devi biosphere in traditional health care | R K Malkhuri, S. Nautiyal, K S Rao & K G Saxena | 1998 |
| 48. | Ethnobotanical study on tribal areas of Almora district | R P Arya, P C Pande & Ved Prakesh | 1999 |
| 49. | Ethnobotanical studies on Gymnosperms of Kumaon | B. Pandey & P C Pande | 1999 |
| 50. | Ethnobotany of Pteridophytes of hilly districts of UP | P. Joshi | 1999 |
| 51. | Flora of the Distt Garhwal with ethnobotanical notes | R D Gaur | 1999 |
| 52. | Studies on traditional medicines in Kumaon | Hema Joshi & P C Pande | 2000 |
| 53. | Phytochemical studies of some medicinal plants of Garhwal | Sati | 2000 |
| 54. | Traditional therapeutic methods of Tehri Garhwal | A. Barthwal, G S Negi & P P Badoni | 2002 |
| 55. | Indigenous phytotherapy among rural women of Shahjahanpur district | S C Sharma | 2002 |
| 56. | Ethnobotany of Philibhit, Kheri, Konda, Bahraich, Sidharthnagar, Basti (Gorakhpur) & Maharajganj | K K Khanna | 2002 |
| 57. | Cultivation techniques of some high altitudes medicinal herbs | M C Nautiyal, V. Prakash & B P Nautiyal | 2002 |
| 58. | Folk Botany of a weed in Tarai belt of north eastern UP | A Kumar, D D Tiwari & Sachin Tripathi | 2003 |
| 59. | Sacred plants of district Hardwar | A K Dhiman | 2003 |
| 60. | Medicinal value of gum & resin secreting plants of | P. Nagiyan, A K Dhiman & A K | 2003 |

	Saharanpur district	Bhargava	
61.	Sugandhit chikitsa padwati or Lavender	K S Negi	2003
62.	Ethnobotany of Bageshwar	A K Paliwal	2004
63.	Medicinal Pteridophytes	R D Dixit & Shweta Singh	2004
64.	Antimicrobial herbal drugs	S. Javed, MMM Siddiqui, M Z Abdin, M. Arif Zaidi	2004
65.	Ethnobotanical aspects of pharmacological flora of Tharu tribes of Tarai belt of UP	Akhilesh Kumar	2004
66.	Ethnomedicinal plant of Mainpuri (UP)	A.K. & BPS Chauhan	2002
67.	Folk Botany of <i>Achyranthes aspera</i> of Tarai belt of UP	A. Kumar, D D Tiwari & V C Pandey	2005
68.	Abortifacient plants of Bahraich	S C Tripathi & R K Singh	2005
69.	Some medicinal plants of leguminosae in Saharanpur	Richa Kumar & A K Bhargava	2005
70.	Medicinal and ethnobotanical flora of Kanpur	N. Mohan, P. Singh, S K Shrivastava & Jitendra Mohan	2005
71.	Rare & threatened ferns of Garhwal hills	I M Semwal, J B Singh & Kanchan	2005
72.	Epiphytic ferns of Garhwal	I M Semwal, J B Singh & Sandhya Katiyar	2005
73.	Folk medicinal plants used in rheumatic disorders by the rural community of district Etawah	M. Kumar & I M Semwal	2005
74.	Folk medicinal uses of some indigenous plants of Barnawa, Baghpat, UP	A. Tomar & H. Singh	2005
75.	Medicinal Plants: Trade & Commerce opportunities	R B S Rawat & G P Garg	2005
76.	Exotic medicinal plants from Baghpat district	A. Tomar & H. Singh	2006
77.	Ethnomedicinal uses of plants by the Gujjars of foothills of Uttaranchal	J C Ghildiyal, Geeta Sadana, K M Uniyal, D. & P. Bebni	2006
78.	Use of herbal medicines in Pauri Garhwal	P. Bahuguna, P P Badoni, Meena Aswal & Aarti Barthwal	2006
79.	Ethnomedicinal use of plants from Ghar area of distt. Saharanpur	S. Kumar, A K Dhiman, P. Perveen & A K Bhargawa	2006
80.	Antipyretic traditional herbal medicinal plants of distt. Saharanpur	A. Dhiman, R. Perveen, S. Khurana, S. Kumar & A K Bhargawa	2006
81.	Ethnotherapeutics of some medicinal plants from Khatauli block of Muzzafarnagar district	A. Tomar & H. Singh	2006
82.	Medicinal plants in Lal dhang range of Lansdown forest division in Garhwal	J C Ghildiyal, Meenakshi Juyal, K M Uniyal, D. Chandra, D R Khanna & P R Chandra	2007
83.	<i>Crotalaria sericea</i> , a remedy for snakebite from Bahraich (UP)	Babli Singh & T P Mall	2007
84.	Ethnomedicinal flora of Kishanpur forest (UP)	Babli Singh & T P Mall	2007
85.	Medicinal plants affecting fertility	S P Singh & Vijay Laxmi Singh	2007
86.	Therapeutics of Kaljikhil block of distt. Pauri garhwal	Vinod Kumar	2007
87.	Ethnobotany of medicinal plants of Roopkund area of Nanda Devi Biosphere Reserve (UK)	Laxmi Rawat, Deepak Kholiya & H B Vashishtha	2007
88.	Biologically active plants of Uttarakhand	K R Arya & D K Mishra	2007
89.	Medicinal plant diversity of Shakumbhari devi hills of Shiwalik range (UK)	P K Patel & Manjul Dhiman	2007
90.	Medicinal plants of Ramnagar forest division in Kumaon region (UK)	Shikha Pandey & Ila Prakash	2007
91.	Phytodiversity of eastern Sohelwa forest distt. Balrampur (U.P.)	Archana Shukla, Preeti Prakash & D D Tiwari	2007
92.	Medicinal plants of Tarkeshwar in Garhwal	J C Ghildiyal, Savita Bisht & Rakhi Jadli	2007
93.	Plants of medicinal importance in Kujapuri hills, Garhwal	Megha Rawat, H B Vashishtha & Mridula Negi	2007

- | | | | |
|------|---|---------------------------------------|------|
| 94. | Some medicinal plants in Uttarakhand | S. Negi, B D Joshi & K L Bisht | 2007 |
| 95. | Ethnomedicinal studies in Vindhyan Kaimur region of Bahraich | Ramesh Pandey, Babli Singh & T P Mall | 2007 |
| 96. | Medicinal plants of Himalayan region | Vishal Bhumani & A K Chopra | 2007 |
| 97. | Antifungal activity of certain plants of Garhwal against opportunistic fungi | Ajay Sharma | 2007 |
| 98. | Pteridophytes in Distt. Dehradun (Uttarakhand) | Surendra Singh & H C Pande | 2007 |
| 99. | Antifungal activity of some medicinal plants of Garhwal | Singh, Bamola & P. Kumar | 2007 |
| 100. | Phytochemical & antibacterial studies on bark extracts of <i>Saraca asoka</i> against pathogenic bacteria | Katiyar <i>et al.</i> | 2007 |
| 101. | Antifungal activity of some medicinal plants of Garhwal | Bamola <i>et al.</i> | 2008 |
| 102. | Ethnomedicinal Plants in Agra Distt | N. Mittal, A.K. SI & Gunjan Agarwal | 2008 |

REFERENCES

- Agarwal, I.L.** (1988). Studies on the biological effects of some plant products on certain insects. Ph.D. Thesis, Univ. of Kanpur, pp. 186.
- Ahuja, B.S.** (1965). *Medicinal Plants of Saharanpur*. Bishen Singh, Mahendra Pal Singh, Cannaught Place, Dehra Dun, pp 95.
- Ansari, A.S. and Joshi, S.C.** (2004). Current advances in herbal based contraceptive research: A worldwide scenario. In: *Medicinal Plants* (Ed. P.C. Trivedi). Aavishkar Publishers, Jaipur, pp. 317-341.
- Arya, K.R. and Mishra, D.K.** (2007). Biologically active plants of Uttarakhand. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-6 (abstr.).
- Arya, R.P.; Pande, P.C. and Prakash, Ved** (1999). Ethnobotanical study on tribal areas of Almora distt. *Ethnobotany*, **11**: 115-121.
- Arya, S.B.** (1965). Plant lore of western U.P. *Folklore*, **6**: 144-146.
- Bahuguna, P.; Badoni, P.P.; Aswal, Meena and Arati Barthwal** (2006). On the use of herbal medicines in Pauri Garhwal. *J. Moun. Res.*, **1**: 155-157.
- Bamola, Neelam; Vats, Preeti; Singh, Lokendra; Neetu and Shweta Shyam** (2008). Antifungal activity of some medicinal plants of Garhwal. *Biochem. Cell. Archives* (accepted).
- Barthwal, A.; Negi, G.S. and Badoni, P.P.** (2002). Traditional therapeutic methods of Tehri garhwal. *H.C.P. Bulletin*, 24-28.
- Bhargava, K.S.** (1959). Unusual and supplementary food plants of Kumaon. *J. Bombay Nat. High. Soc.*, **56**: 26-31.
- Bhargava, S.** (1982). Some medicinal plants of distt. Saharanpur. M. Phil. Thesis, Meerut University, Meerut.
- Bhatt, K.C. and Gaur, R.D.** (1992). A contribution to Ethnobotany of Rajis in Pithoragarh distt. *Acta Bot. Indica*, **20**: 76-83.
- Bhatt, K.C.; Bist, M.K. and Gaur, R.D.** (1991). Flavouring and masticatory plants: a case study of Bhotias. *J. Econ. Bot.*, **15**: 41-45.
- Bhumani, Vishal and Chopra, A.K.** (2007). Medicinal Plants of Himalayan region: Need for conservation. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-43 (abstr.).
- Dhiman, A.K.** (2002). Common Bazar medicines of Haridwar. *Schitra Ayurved*, **55**: 613-619.
- Dhiman, A.K.** (2003). Sacred plants of distt. Hardwar and their medicinal uses. *Ad. Plant Sci.*, **16**(2): 377-384.
- Dhiman, Amit; Parveen, Reshma; Khurana, Seema, Kumar, Sanjay and Bhargava, A.K.** (2006). Antipyretic Traditional Herbal Medicinal Plants of Distt. Saharanpur. *Plant Archives*, **6**: 707-710.
- Dhrupal and Gupta, S.K.** (1989). Ethnobotanical wealth of distt. Muzaffarnagar: Survey of medicinal plants. *Ad. Plant Sci.*, **2**(12): 178-183.

- Dhyani, S.K. and Sharma, R.K.** (1987). Exploration of socio-economic plant resources in Vyasi valley in Tehri Garhwal. *J. Econ. Bot.*, **9**: 299-311.
- Dixit, R.D. and Singh, Shweta** (2004). Medicinal Pteridophytes. In: *Medicinal Plant*. Aavishkar Publishers, Jaipur, pp. 269-298.
- Gaur, R.D.** (1977). Wild edible fruits of Garhwal hills. *The Himalaya*, **1**(1): 66-70.
- Gaur, R.D. and J.K. Semwal** (1983). Some little known wild edibles of Garhwal Himalayas. *Man & Environ.*, **7**: 161-165.
- Gaur, R.D.** (1999). Flora of the District Garhwal with ethnobotanical notes. *Trans Media*, Srinagar (Garhwal), India, pp. 811.
- Ghildiyal, J.C.; Bisht, Savita and Jadli, Rakhi** (2007). Medicinal plants of Tarkeshwar, a sacred grove in Garhwal Himalaya. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-21 (abstr.).
- Ghildiyal, J.C.; Juyal, Meenakshi; Uniyal, K.M.; Chandra, Diwakar and Chandra, Prabhakar** (2007). Some plants species of medicinal importance in Laldhang range of Lansdowne forest division in Garhwal Himalaya. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-48 (abstr.).
- Ghildiyal, J.C., Sadana, Geeta and Juyal, Pooja** (2007). Ethnomedicinal uses of the plants by Boxa tribe of Bhabar tract in the foot hills of Garhwal Himalayas. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, D-6 (abstr.).
- Ghildiyal, J.C.; Sadana, Geeta; Uniyal, K.M., Bebn, D. and Prabhakar, Bebn** (2006). Ethnomedicinal uses of plants by the Gujjars of foothills of Uttarakhand. *J. Mountain Res.*, **1**: 115-121.
- Gupta, Mohit** (2008). Ethnomedicinal Studies of Alpine Flora of Tungnath region and organoleptic evaluation of their drug yielding parts. Ph.D. Thesis, CCS University, Meerut.
- Husain, Wazahat and Siddiqui, M.B.** (1987). Ethnobotanical approach of north-western UP. *Acta Bot. Ind.*, **15**: 94-97.
- Jain, S.K. and Saklani, A.** (1991). Observations on the ethnobotany of the Tons valley in Uttarkashi distt. *Moun. Res. & Dev.* Vol. 2.
- Javed, S.; Siddiqui, M.M.M.; Abdin, M.Z. and Asif Zaidi, S.M.** (2004). Antimicrobial herbal drugs. In: Natl. workshop on "Institute-Industry Interaction on Research in Unani medicine to identify areas of collaboration". Jan 7-9, Jamia Hamdard, New Delhi. Abstr. OP-72, pp-94.
- Joshi, Hema and Pandey, P.C.** (2000). Studies on peculiar traditional methods of medicine in Kumaon region of Uttarakhand. In: *Ethnobotany* (ed. P.C. Trivedi). Aavishkar Publishers, Jaipur, pp. 317-321.
- Joshi, P. and Pande, P.C.** (1997). *Ethnobotany of the Bhotia tribe of Kumaon Himalayas*. Indian Publishing Co., New Delhi, pp- 63-69.
- Joshi, Pramila** (1993). Ethnobotany of the tribal communities of the Kumaon Himalayas. Ph.D. Thesis, Kumaon University, Nainital.
- Joshi, Pramila** (1999). Ethnobotany of Pteridophytes of hilly distt of Uttar Pradesh. *Indian Ferns J.*, **14**: 14-18.
- Juyal, S. and Uniyal, M.R.** (1966). Medicinal Plants of Bhagirathi valley. *Nagarjun*, **16**: 26.
- Katiyar, Keerti; Singh, Lokendra; Kishor, Kunal and Vats, Preeti** (2007). Phytochemical and Antibacterial studies on bark extracts of *Saraca asoca* (Roxb.) against pathogenic bacteria. *Biochem. Cell. Archives*, **7**(2): 293-298.
- Kaushik, P. and Dhiman, A.K.** (1995). Common Medicinal Pteridophytes. *Indian Fern J.*, **12**: 139-145.
- Kaushik, P. and Dhiman, A.K.** (1995). Some Vedic medicinal plants. *Ad. Plant Sci.*, **8**: 1-12.
- Kaushik, P., Joshi, P. and Pande, P.C.** (1997). Ethnobotany of the Bhotia tribe of Kumaon Himalayas. Indian Publishing Co., New Delhi, pp. 63-69.
- Khanna, K.K.** (2002). Ethnobotany of five districts of tarai region, Uttar Pradesh. In: *Ethnobotany*. Aavishkar Publishers, Jaipur, pp. 128-145.

- Khullar, S.P.; Sharma, S.S. and Singh, P.** (1982). Observations on the ferns of Chakrata Hills. *Proc. Indian Sci. Congr.*, (pp III) 69: 67.
- Kumar, Akhilesh** (2004). Ethnobotanical aspects Pharmacological flora used by Tharu tribes of north-eastern Terai Belt of Uttar Pradesh. Ph.D. Thesis, Dr RML Avadh Univ., Faizabad.
- Kumar, Akhilesh; Tewari, D.D. and Tripathi, Sachin** (2003). Folk-Botany of an obnoxious weed *Lantana* spp. in Terai Belt of north-eastern UP. *Vegetos*, **16**(1&2): 21-26.
- Kumar, Akhilesh; Tewari, D.D. and V.C. Pandey** (2005). Folk-Botany of *Achyranthes aspera* in Terai Belt of north-eastern, UP. *Vegetos*, **18**(1&2): 89-92.
- Kumar, Mukesh and Semwal, I.M.** (2005). Studies on some folk medicinal plants used in Rheumatic disorders by the rural communities of Distt. Etawah, UP. In: Natl Seminar on "New Horizons in Biosciences", 29-30 Nov. at D.G. College, Kanpur, pp-127.
- Kumar, Richa and Bhargava, A.K.** (2005). Some important medicinal plants of fam. Leguminosae in distt. Saharanpur (vi). *Ad. Plant Sci.*, **18**(2): 659-667.
- Kumar, S.; Dhiman, A.K., Parveen, Reshma and A.K. Bhargava** (2006). Ethnomedicinal use of plants from Ghar area of distt. Saharanpur (UP). *Plant Archives*, **6**(2): 725-727.
- Kumar, Vinod** (2007). Study of ancient traditional therapeutic methods of Kaljikhil block of district Pauri Garhwal (Uttarakhand). In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, D-32 (abstr.).
- Maheshwari, J.K., Singh, K.K. and Saha, S.** (1981). The Ethnobotany of the Tharus of Kheri district in Uttar Pradesh. Lucknow, NBRI.
- Malkhuri, R.K.; Nautiyal, S.; Rao, K.S. and Saxena, K.G.** (1998). Role of medicinal plants in the traditional health care system: A case study from Nanda Devi Biosphere Reserve. *Curr. Sci.*, **72**(2): 152-157.
- Mohan, Narendra; Singh, Pradeep; Srivastava, Satendra Kumar and Mohan, Jitendra** (2005). Medicinal and Ethnobotanical flora of Kanpur (UP): Herbs and Shrubs. In: Natl Seminar on "New Horizons in Biosciences", 29-30 Nov. at D.G. College, Kanpur, pp-71.
- Nagiyan, P; Dhiman, A.K. and Bhargava, A.K.** (2003). Medicinal value of gum and resin secreting plants of Distt. Saharanpur. *Annals of Forestry*, **2**(2): 245-248.
- Nautiyal, N.C. and Nautiyal, B.P.** (2004). Agrotechniques of High Altitude Medicinal and Aromatic Plants. M/S Bishen Singh Mahendra Pal Singh, Dehradun.
- Negi, G.S.** (1994). Study of the ancient traditional therapeutic wealth of Pauri and Tehri Garhwal-Part III. *Himalayan Chemical and Pharmaceutical Bulletin*, **11**: 7-17.
- Negi, K.S.** (2003). Sugandhit Chikitsa Padwati aur Lavender. *Nainital Samachar*, **26**(33): 2.
- Negi, K.S.; Tewari, J.K. and Gaur, R.D.** (1987). Economic importance of some common trees in Garhwal Himalaya: An ethnobotanical study. *Ind. J. For.*, **8**(4): 276-289.
- Negi, K.S.; Tiwari, J.K.; Gaur, R.D. and Pant, K.C.** (1988). Indian Butter Tree- *Aesandra butyracea* (Roxb.) Baexni; Some ethnobotanical notes. *Ind. J. Forestry*, **11**(4): 319-321.
- Negi, S.; Joshi, V.D. and Bisht, K.L.** (2007). Conservation of medicinal plants in Uttarakhand. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-33 (abstr.).
- Paliwal, A.K.** (2004). The Angiospermic flora of Bageshwar distt. in Kumaon with special reference to Ethnobotany. Ph.D. Thesis, C.C.S. University, Meerut.
- Pande, P.C. and Pangtey, Y.P.S.** (1987). Studies on the Ethnobotany 1. On some less known edible, medicinal and economic ferns of Kumaon region of western Himalayas. *J. Econ. Taxon. Bot.*, **23**(2): 253-255.
- Pandey, B. and Pande, P.C.** (1999). Ethnobotanical studies on gymnospermic plants of Kumaon Himalayas. *J. Econ. Taxon. Bot.*, **23**(2): 253-255.
- Pandey, R.; Singh, Babli and T.P. Mall** (2007). Ethnomedicinal investigation among tribes of

- Vindhyyan Kaimur region of Uttar Pradesh. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-34 (abstr.).
- Pandey, Shikha and Prakash, Ila** (2007). Medicinal plants of Ramnagar forest division in Kumaon region. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-15 (abstr.).
- Pangtey, P.S., Rawat, B.S. and Kalakoty** (1982). Unusual supplementary wild plants of Kumaon Himalayas. *Moun. Res & Dev.*, **1**: 66-70.
- Patel, P.K. and Dhiman, Manjul** (2007). Loss of medicinal plant diversity of Shakumbhari Devi hills of Shivalik range. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-13 (abstr.).
- Prachi** (2009). Ethnobotanical studies and floristic biodiversity of district Muzaffarnagar with reference to Medicinal plants Ph.D. Thesis, C.C.S. University, Meerut.
- Rawat, G.S. and Pangtey, Y.P.S.** (1987). Studies in ethnobotany-1 on some less known edible and economic ferns of Kumaon region of western Himalayas. *J. Econ. Tax. Bot.*, **11**: 81-85.
- Rawat, R.B.S. and Garg, G.P.** (2005). Medicinal Plants: Trade and Commerce opportunities with India. *Indian Forester*, **131**(3): 275-287.
- Rawat, Laxmi, Kholiya, D. and Vashishtha, H.B.** (2007). Ethnobotanical recordings of some important medicinal plants of Roopkund area of Nanda Devi Biosphere Reserve. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-3 (abstr.).
- Rawat, Megha; Vashishtha, H.B. and Negi, Mridula** (2007). Plants of medicinal importance in Kujapuri hills, Garhwal. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-28 (abstr.).
- Sahay, N.C. and Jain, S.K.** (1988). Ethnobotany of the Kumaon Himalayas. *Social Pharmacol.*, **2**: 359-380.
- Sati, S.** (2000). Phytochemical studies on some useful medicinal plants of Garhwal Himalayas. Ph. D. Thesis, H.N.B.G.U., Srinagar, Garhwal.
- Saxena, A.P. and Vyas, K.H.** (1981). Curing obsterics and gynaecological disorders. Ethnobotanical records on infectious diseases from tribals of Banda district. *J. Econ. Taxon. Bot.*, **2**: 191-194.
- Saxena, S.K. and Tripathi, J.P.** (1993). Ethnobotany of Bundelkhand I & II. *J. Econ. Taxon. Bot.*, **14**: 263-270.
- Semwal, I.M.; Singh, J.B. and Kanchan** (2005). Studies on the rare and threatened ferns of Garhwal hills, Uttaranchal. In: Natl Seminar on "New Horizons in Biosciences", 29-30 Nov. at D.G. College, Kanpur, pp-119.
- Semwal, I.M., Singh, J.B. and Sandhya Katiyar** (2005). Distribution and ecology of epiphytic ferns of Garhwal Himalayas. In: Natl Seminar on "New Horizons in Biosciences", 29-30 Nov. at D.G. College, Kanpur, pp-110.
- Semwal, J.K. and Gaur, R.D.** (1981). Alpine flora of Tungnath in Garhwal Himalayas. *J. Bombay Natl. Hist. Soc.*, **78**(3): 498-512.
- Shah, N.C.** (1975). Prospect of botanical drug from hill district of Uttar Pradesh. *Indian Drugs*, **12**(11): 17-20.
- Shah, N.C.** (1982). Herbal folk medicines in northern India. *J. Ethnopharmacology*, **6**: 293-301.
- Sharma, Ajay** (2007). Studies on antifungal activity of certain medicinal plants against opportunistic fungi Meerut. Ph.D. Thesis, C.C.S. Univ., Meerut.
- Sharma, S.C.** (1985). Observations on wild medicinal ferns of Shahjahanpur distt., UP. *Ind. Bot. Cont.*, **2**: 119-121.
- Sharma, S.C.** (1993). Traditional herbal medicines from district Shahjahanpur, Uttar Pradesh. *Vegetos*, **6**(1-2): 9-14.
- Sharma, S.C.** (1995). A medicobotanical study in relation to veterinary medicines of Shahjahanpur distt. *J. Econ. Taxon. Bot. (Addl. Ser.)* **12**: 123-127.
- Sharma, S.C.** (2002). Indigenous phytotherapy among rural women of Shahjahanpur distt., UP. *Ind.*

- Ethnobotany* (ed. P.C. Trivedi) Aavishkar Publishers, Jaipur, pp. 311-321.
- Sharma, S.C. and Gautam, Madhu** (1992). Medico-botanical studies on the trees of Badaun. Distt., UP. *Vegetos*, 5: 95-101.
- Sharma, S.C., Sarabhai, R. and Ahmad, S.A.** (1989). Medicinal hydrophytes of Shahjahanpur, U.P. *Vegetos*, 2(2): 235-239.
- Sharma, Vaibhav** (2004). Biodiversity of Alpine Medicinal Herbs of Kedarnath Range (garhwal Himalayas) and their ethnomedicinal status. Ph.D. Thesis, C.C.S. University, Meerut.
- Shukla, A.; Prakash, Preeti and Tewari, D.D.** (2007). Phytodiversity of Eastern Sohelwa forest, distt. Balrampur. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, A-17 (abstr.).
- Singh, Babli and Mall, T.P.** (2007). *Crotalaria sericea*- A miraculous ethnomedicinal plant for snakebite in north-western tarai forest of UP: A new report. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, C-16 (abstr.).
- Singh, Babli and Mall, T.P.** (2007). Sanffar- a wonderful ethnomedicine from north-western tarai forest of Uttar Pradesh- A new report. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, C-17 (abstr.).
- Singh, H., Saklani, A and Lal, B.** (1990). Ethnobotanical observations on some gymnosperms of Garhwal Himalaya, Uttar Pradesh. *Ind. Econ. Bot.*, 44: 349-354.
- Singh, K.K. and Maheshwari, J.K.** (1989). Traditional herbal remedies among the Tharus of Bahraich distt., UP. *Ethnobotany*, 1: 51-56.
- Singh, K.K. and Maheshwari, J.K.** (1992). Folk medicinal uses of some plants among the Tharus of Gorakhpur district, UP. *Ethnobotany*, 4: 39-43.
- Singh, K.K.; Palvi, S.K. and Singh, H.** (1980). Survey of some medicinal plants of Dharchula block in Pithoragarh distt. *Bull. Medico. Ethno. Bot. Pes.*, 1: 8-24.
- Singh, K.K.; Sahai, S. and Maheshwari, J.K.** (1997). Ethnobotanical uses of some ferns amongst tribes of UP. *Indian Fern J.*, 6: 63-67.
- Singh, Lokendra and Vats, Preeti** (2006). Indian March from forestry and agrobased traditional knowledge to industry based pharma industry. *Asian J. Biosciences*, 1(2): 70-73.
- Singh, Lokendra and Vats, Preeti** (2006). Indian probing for a healthier and sustainable future: An overview of ethnobotanical & related modern prospects. *Plant Archives*, 6(1): 1-39.
- Singh, Lokendra; Bamola, Neelam and Pankaj Kumar** (2007). Antifungal activity of some medicinal plants against *Aspergillus niger*. In: *Natl. Symp. on Recent Trends in Plant Sciences and Herbal Medicine*. Dec. 17 & 18th, NDU&T, Faizabad (abstr.).
- Singh, Surendra and Pande, H.C.** (2007). Diversity of Pteridophytes in District Dehradun (Uttarakhand). *Indian J. Forestry*, 30(4): 513-522.
- Singh, S.P. and Singh, Vijay Laxmi** (2007). Medicinal plants affecting fertility and their possible use in family planning. In: Natl. Sem. on "Medicinal Plants: Conservation, Cultivation & Utilization II", Gurukul Kangri University, Haridwar, 9-11 March, D-21 (abstr.).
- Singh, V.K.; Mohd. A. and Khan, Abrar M.** (1984). Folk medicinal claims of Chakrata forests. *JPI, Nature*, 1(2): 16-21.
- Srivastava, R.B. and Verma, R.M.P.** (1991). Ethnobotanical importance of fern flora of Balmikinar. *Indian Fern J.*, 6: 11-15.
- Tomar, Amit and Singh, H.** (2005). Folk medicinal uses of some indigenous plants among the village people of Barnawa in Baghpat distt., UP. *Plant Archives*, 5: 81-86.
- Tomar, Amit and Singh, H.** (2006). Ethnotherapeutics of some medicinal plants from Khatauli block of Muzaffarnagar distt., UP. *Plant Archives*, 6: 639-641.
- Tomar, Amit and Singh, H.** (2006). Exotic medicinal plants from Baghpat Distt. *J. Non Timber Forest Products*, 13(4): 273-280.
- Tripathi, S.C. and Singh, Rahul K.** (2005). Abortifacient plants of Bahraich. *Vegetos*, 18(1&2): 97-98.