



A survey on phytopharmacological aspect of wild medicinal plants

Santendra Kumar Soni^{1*}, Jeetendra Singh², Vandana²

¹ Associate Professor, Department of Botany, Dayalbagh Educational Institute, Dayalbagh, Agra, Uttar Pradesh, India

² Department of Botany, Dayalbagh Educational Institute, Dayalbagh, Agra, Uttar Pradesh, India

Abstract

Khasra 359 Shanti Nagar is situated at Dayalbagh, Agra (Uttar Pradesh) of semi-arid climate Department of Botany, Faculty of Science Dayalbagh Educational Institute has already established an "Biodiversity Park". Around 48 Wild medicinal plant species spread over 24 families. Important Wild medicinal plants recorded at Khasra 359 Shanti Nagar were Bagra, Kateri, Booganbel, Ashwagandha, Aak, Bara-Gokhuru, Datura, Cutchu, Indrayan, Balam kheera, Bhumi amla, Safed til, Patsan, Chirchita, Pilabhangara, Gajar Ghas, Mahanimb, etc.

The plants documented belong to the families such as *Asteraceae*, *Acanthaceae*, *Convolvulaceae*, *Poaceae*, *Lamiaceae*, *Cleomaceae*, *Solanaceae*, *Malvaceae*, *Nyctaginaceae*, *Apocynaceae*, *Pedeliaceae*, *Zygophyllaceae*, *Commelinaceae*, *Fabaceae*, *Amaranthaceae*, etc.

Keywords: medicinal uses, wild plants, phytopharmacological aspect etc

Introduction

Therapeutic plants which are being utilized in medication to fix different sicknesses are exhausting colossally step by step because of impedance of people, over populace, contamination, urbanization and so forth.

Assume a significant part in the medical services arrangement of most non-industrial nations. The customary medical care practice is predominantly subject to restorative plants gathered from nature. (Kasagana., *et al.* 2011) [24]. In spite of this, the restorative plant biodiversity is being drained because of man-made and normal catastrophes.

Besides, the native information related with the protection and utilization of therapeutic plants is likewise vanishing at a disturbing rate. Therapeutic plants could be utilized as wellsprings of income for ranchers. All through world plants have been in constant use in treatment of different illnesses. (Mintah., *et al.* 2019) [18].

This training is profound established in India and the home grown therapeutic information has been procured through long custom and experience. Restorative plants assume a centric part, not just as customary drugs utilized in numerous nations, yet additionally as exchange products which satisfy the need of far off market.

Higher plants have been utilized as a wellspring of medication in all pieces of the world for over 5,000 years they actually keep on involving a significant spot both in customary just as current arrangement of medication (Srivastava and Kapahi, 1992). The utilization of plants as medication is as old as human civilization. Crude individuals had relied upon neighborhood cures of plant cause.

All natural medications had their cause in fables. The allopathic medications display results and are expensive, though the natural prescriptions that show less or no results and are less expensive and without any problem accessible. In addition, the old medication man bites the dust however he never reveals the secret of natural prescriptions (Rai, 1988).

Ethnobotany manages concentrates among the tribals and country individuals for recording their special information about plant abundance and for search of new assets of home grown medications, palatable plants and different parts of plants (Jain and Mudgal, 1999). The study of ethnobotany is worried about the connections between man furthermore, vegetation including man's reliance upon vegetation just as the colossal impact man has had on vegetation (King, 1974). Maheshwari (1983) characterized ethnobotany as an investigation of the over a wide span of time cooperation of crude or native human culture with the surrounding vegetation. Ethnobotany, being a multidisciplinary study, has not been a mainstream subject, albeit as of late there has been an expanding interest created in the investigation of plants corresponding to the occupants of the region (Rao and Neogi, 1980).

Plant biodiversity is the establishment of the food supply and gives numerous use of therapeutic and modern items. Be that as it may, it is being pulverized today because of different human exercises. The deficiency of biodiversity undermines the world's future food supply. The food substitute and appropriate usage of regular assets are presently worldwide concerns (Manandhar, 1993).

As per the World Health Organization (WHO), as numerous as 80% of the world's kin rely upon conventional medication for their essential medical service's needs. Documentation of conventional information on therapeutic plants is as yet completed in numerous pieces of the world; the primary explanation behind such endeavors is to proceed with transmission of the information to more youthful age. The current work is a push to investigate phytopharmacological parts of wild plants of Khasra 359, Shantinagar, Agra.

Home grown meds arranged from wild plants assume a critical part in the essential medical services needs of individuals living in agricultural nations. The review was embraced during July to October 2020 to documentation of wild therapeutic plants utilized in rustic zones of Agra area.

Most of species not presently being imperiled. Be that as it may, 13% of species exchanged is Declining or Near Threatened in the wild; this represents a genuine preservation issue. On the off chance that exchange proceeds with a particularly unreasonable way, these plants could quickly turn out to be Critically Endangered soon.

Khasra 359 Shanti Nagar is situated at Dayalbagh, Agra (Uttar Pradesh) of semi-arid climate. Around 49 Wild medicinal plant species spread over 24 families. Important Wild medicinal plants recorded at Khasra 359 Shanti Nagar were Bagra, Kateri, Booganbel, Ashwagandha, Aak, Bara Gokhuru, Datura, Cutchu, Indrayan, Balam kheera, Bhumi amla, Safed til, Patsan, Chirchita, Pilabhangara, Gajar Ghas, Mahanimb, etc. The plants documented belong to the families such as Asteraceae, Acanthaceae, Convolvulaceae,

Poaceae, Lamiaceae, Cleomaceae, Solanaceae, Malvaceae, Nyctaginaceae, Apocynaceae, Pedeliace, Zygophyllaceae, Commelinaceae, Fabaceae, Amaranthaceae, etc.

Matarial and Methods

Study Area

Khasra-359 Shanti Nagar is situated in Dayalbagh Agra-5 (Uttar Pradesh) and Border are touch Rajasthan to its west and south and these are situated at the Yamuna River. In this study has been explore wild medicinal plants and these descriptions and Phytopharmological aspect of Dayalbagh Educational Institute (D.E.I.) Khasra-359 Shanti Nagar Agra-5 Shows the study area Khasra 359 Shantinagar spreading over 8.6-acre land with diverse groups plants including of wild medicinal plants.



Fig 1: Field Map of Khasra-359 Shanti Nagar Dayalbagh Agra-5

Field Study

Field study at Khasra-359 Shanti Nagar was carried out in autumn season 2020; the sampling was conducted by identifying study participants among elderly individuals who retained traditional knowledge concerning plants, i.e. farmers and local peoples. Study participants were asked about local uses of: (a) wild food plants; (b) wild medicinal plants (wild, semi-domesticated, and cultivated) in both human and veterinary medicine. Study participants were asked to report current uses considered “traditional”, i.e. considered part of the perceived cultural heritage, as well as uses they could recall from their childhood, which may no longer be exploited. Botanical nomenclature and family assignments followed, Local plants names were transcribed following the rules of standard Latin languages.

Data analysis

All the collected field data (plant reports, i.e. plant used as medicinal and phytopharmacological way) were compared with the entire ethnobotanical literature. In order to assess if the recorded reports in the current study were “new” for the region.

Methodology

Khasra 359 Shanti Nagar is situated in Dayalbagh, district Agra (U.P.). Agra stretches across 26° 44' N to 27° 25' N

and 77° 26' E to 78° 32' E. Its borders touch Rajasthan to its west and south, situated at the Yamuna River. In this survey, an attempt has been made to explore medicinal plants, their description and medicinal uses.

Survey and field photography of Wild plants

Study area was surveyed several times for identification and photography of plants. Field photography carried out by Nikon photoshoot 21X zoom.

Collection of data







After survey and photography, the next step was to collect information through Google search engine and referenced books.






Observations







The present survey encompasses was estimated the 48 wild medicinal plant species belonging to 24 plant families, of which, herbs, shrubs, climbers and trees. The enlisted plants have been presented schematically as serial number, botanical name, family, Hindi name, Phytomorphological activity and medicinal uses. Khasra 359, Shantinagar is rich in medicinal wild plants and cultivated plants and have a great potential to be used in drug and pharmaceutical industries. These medicinal plants have been used by local







people, vendors, vaidyas and experts of Ayurvedic fields since a long time in herbal and folk remedies.








Table 1: List of Wild Medicinal Plants








S.No.	Scientific Name	Common Name	Family	Phytopharmacological Aspects	Medicinal Uses	Image
1.	<i>Cleome viscosa</i> Linn.	Bagra	<i>Cleomaceae</i>	Antidiarrheal, Anthelmintic, Antiseptic, Carminative, Antiscorbutic, Sudoprific ^[4, 29]	Fever, Headache	
2.	<i>Solanum surettens</i> Linn.	Kateri	<i>Solanaceae</i>	Immunomodulation, Antipiles activity, Antianaphylactic activity ^[54]	Digestive, Duretic	
3.	<i>Physalis peruviana</i> Linn.	Rasbhari	<i>Solanaceae</i>	Antitumor, cytostatic, Anticonvulsant, Anti-ulcerogenic, Anti-inflammatory ^[43]	Dysentery, Fever	
4.	<i>Sida acuta</i> Burm.	Baraira	<i>Malvaceae</i>	Antioxidant, Anti-microbial, Antibacterial, Antimalarial, cardiovascular, Antiulcer. ^[53]	Diarrhea, Snake bite	
5.	<i>Sida sp.</i>					
6.	<i>Sida cordifolia</i> Linn.	Kharinta	<i>Malvaceae</i>	Parkinson's disease, Analgesic, Anti-inflammatory. ^[26]	Asthma, cold	







7.	<i>Bougainvillea spectabilis</i> Willd.	Booganbel	<i>Nyctaginaceae</i>	Anti-diabetic activity, Antimicrobial activity, Antibacterial activity, Antifungal activity, [1, 17]	Anti-diabetic, Antioxidant	
8.	<i>Bougainvillea glabra</i> Choisy.	Booganbel	<i>Nyctaginaceae</i>	Antibacterial, Antifungal, Antidiabetic, Cytotoxic, Analgesic, Antipyretic, Anti-inflammatory, and Antioxidant activities [40, 42]	Anti-inflammatory, Antiulcer	
9.	<i>Withania somnifera</i> Linn.(Dunal.)	Ashwagandha	<i>Solanaceae</i>	Anti-inflammatory, Antistress, Memory enhancing, Antiparkinsonian, Hypolipidemic, Antibacterial, Cardiovascular, Antioxidant [22]	Anxiety, Neurological disorders	
10.	<i>Abutilon indicum</i> Link. (Sweet.)	Kanghi	<i>Malvaceae</i>	Immunomodulatory, Analgesic, Antimalarial, Antimicrobial, Hypoglycemic activity [32,49]	Diuretic, Laxative	
11.	<i>Calotropis procera</i> Aiton.	Aak	<i>Apocynaceae</i>	antitumor, antihelmintic, antioxidant, hepatoprotective, antidiarrhoeal, anticonvulsant, antimicrobial, oestrogenic and antimalarial activity. antitumor, antihelmintic, antioxidant, hepatoprotective, antidiarrhoeal, anticonvulsant, antimicrobial, oestrogenic and antimalarial activity. antitumor, antihelmintic, antioxidant, hepatoprotective, antidiarrhoeal, anticonvulsant, antimicrobial, oestrogenic and antimalarial activity. antitumor, antihelmintic, antioxidant, hepatoprotective, antidiarrhoeal, anticonvulsant, antimicrobial, oestrogenic and antimalarial activity. Antitumor, Antihelmintic, Antioxidant, Antimicrobial, Oestrogenic and Antimalarial disease [47]	Diarrhea, constipation and stomach ulcers	






12.	<i>Pedaliium murex</i> Linn.	Bara Gokhuru	Pedaliaceae	Antiseptic, Antimicrobial. ^[37]	Gonorrhea, Dysuria	
13.	<i>Tribulus terrestris</i> Linn.	Gokhuru	Zygophyllaceae	Antirolithic activity, Cardiotonic activity, Antidiabetic activity ^[38]	Sexual disorders, Reduces blood pressure	
14.	<i>Commelina benghalensis</i> Linn.	Kana	Commelinaceae	Anti-microbial, Anti-cancer, Anti-inflammatory, Anti-oxidant, Anti-diarrheal, Anthelmintic, Fertility inducing, Anti-viral, Anxiolytic, Hepato-protective, Anti-uroolithiasis. ^[18]	Reduce high blood pressure, Infertility	
15.	<i>Croton tiglium</i> Linn.	Jamaalgota	Euphorbiaceae	Antilipidemic, Anti-diarrheic, Antimalari, Antimutagenic. ^[41]	Pain killer, Muscle relaxant	
16.	<i>Datura stramonium</i> Linn.	Datura	Solanaceae	Sciatica, Bruises and Swellings, fever, Asthma and Bronchitis ^[16]	Stomach pain, Toothache	
17.	<i>Acacia melanoxylon</i> R.Br.	Blackwood	Fabaceae	Prevention of coronary heart disease, cognitive impairment, ^[28]	Diarrhea, Dysentery	

18.	<i>Amaranthus viridis</i> Linn.	Chaulai	<i>Amaranthaceae</i>	Diuretic, Analgesic, Antipyretic, Vermifuge, Antiulcer Antidiabetic, Anti-cholesterolemic ^[50]	Fever, Asthma	
19.	<i>Pennisetum glaucum</i> Linn.	Bajra	<i>Poaceae</i>	Anticancer activity, Antibacterial activity ^[34]	Control blood pressure and control of cholesterol levels	
20.	<i>Senegalia catechu</i> Hurter & Mabb.(Linn.)	Cutechu	<i>Fabaceae</i>	Antihyperglycemic, Antidiarrheal, Antinociceptive, and Antipyretic activities ^[7]	Heal wounds, treat obesity and diabetes, and maintain oral hygiene	
21.	<i>Cassia tora</i> Rox. (Linn.)	Panwar	<i>Fabaceae</i>	Antiproliferative, Hypolipidemic, Immunostimulatory, Anticancerous, Antimutagenic and Hepatoprotective activity ^[12]	Leprosy, Ringworm, Itching	
22.	<i>Tephrosia purpurea</i> Pers.(Linn.)	Sharpunkha	<i>Fabaceae</i>	Anti-diabetic, Anti-ulcer, Anti-diarrheal, Wound healing, Anti-inflammatory, Insecticidal, Antiviral, Anti-protozoal, Anti-fungal, Anti-plasmodial ^[44]	Ulcers, asthma, and tumors	
23.	<i>Convolvulus pircicaulus</i> Linn.	Shankh Pushpi	<i>Convolvulaceae</i>	Antiamnesic, Antioxidant, Hypolipidemic, Immunomodulatory, Anti-inflammatory, Analgesic, Antimicrobial, Insecticidal, Antifungal, Antibacterial, Antidiabetic, Antiulcer, Anticatatonic and Cardiovascular activity. ^[31]	Fatigue, insomnia	

24.	<i>Xanthium strumarium</i> Linn.	Chhota dhatura	<i>Asteraceae</i>	Antibacterial, Antitumour, Antitussive, Antifungal, Anti-inflammatory, Antinociceptive, Hypoglycaemic, Antimitotic, Antioxidant, Antitrypanosomal ^[23]	Headache, gastric ulcer	
25.	<i>Peristrophe bicalyculata</i> Nees.	Kali Anghedi	<i>Acanthaceae</i>	Anti-spasmodic, anti-inflam, Anti-inflammatory, Anti-Rheumatism, Antidiabetic, Anticarcinogenic ^[36]	Sprain, fever, cold	
26.	<i>Citrullus colocynthis</i> Schrad. (Linn.)	Indrayan	<i>Cucurbitaceae</i>	Antidiabetic, Hypolipidemic, Antineoplastic, Antioxidant, Anti-inflammatory, Profibrinolytic, Analgesic. ^[30]	Diabetes, Cough	
27.	<i>Cassia occidentalis</i> Link. (Linn.)	Kasunda	<i>Fabaceae</i>	Anti-inflammatory activity, Antibacterial activity, Antioxidant, Hepatoprotective and Immunosuppression activity ^[48]	Antibacterial, Antifungal	
29	<i>Kigelia Africana</i> Benth. (Lam.)	Balam kheera	<i>Bignoniaceae</i>	Antioxidant and Anti-inflammatory ^[2, 9]	Leprosy, Cysts	
30	<i>Phyllanthus niruri</i> Linn.	Bhumi amla	<i>Phyllanthaceae</i>	Antiviral, Anti-tumor, Hepatoprotective, Anti-diabetic, Antioxidant, Anti-hypertensive ^[14]	Kidney stones, Jaundice	
31	<i>Euphorbia hirta</i> Linn.	Bara dudhi	<i>Euphorbiaceae</i>	Anti-apoptotic, Antibacterial, Anti-oxidant, Diuretic. ^[25]	Cough, Asthma	

32	<i>Sesamum indicum</i> Linn.	Safed til	<i>Pedaliaceae</i>	Antioxidant, Antimicrobial, Antiinflammatory, Antidiabetic, Anticancer, Antihyperlipidemic, Hepatoprotective, Anthelmintic, Antileishmanial [6, 45]	Athlete's foot fungus	
33	<i>Ricinus communis</i> Linn.	Arandi	<i>Euphorbiaceae</i>	Antioxidant activity, Anti-inflammatory Activity, Antiasthmatic activity. [3]	Backache, Sleeplessness	
34	<i>Sesbania bispinosa</i> W.Wight.	Dancha	<i>Fabaceae</i>	Inflammation, Bacterial infection [20, 56]	Treat ringworm and skin disease	
35	<i>Saccharum munja</i> Roxb.	Munja	<i>Gramineae</i>	Urinary complaints, eye disease, tridosha. [39]	Burning sensation, Diseases of eyes	
36	<i>Trianthium monagyna</i> Linn.	Vishakhapara	<i>Aizoaceae</i>	Antioxidant, Diuretic, Analgesic, Hepatoprotective, and Anticarcinogenic [46]	Anemia, Inflammation	
37	<i>Asparagus setaceus</i> Kunth.	Shatavari	<i>Asparagaceae</i>	Antioxidants, Immunostimulants, Anti-inflammatory, Antihepatotoxic, Antibacterial, Antioxytotic [35]	Dysentery and Diarrhea	
38	<i>Boehavia eracta</i> Linn.	Shweta	<i>Nyctaginaceae</i>	Anti-inflammation, Antidiabetic studies, Antioxidant [33]	Stomachic, Cardiotonic	

39	<i>Tridax procumbens</i> Linn.	Kanphuli	<i>Asteraceae</i>	Antiviral, Antibiotic, Antifungal	Diarrhoea, Dysentery	
40	<i>Ziziphus mauritiana</i> Lam.	Ber	<i>Rhamnaceae</i>	Antiseptic, Sedative, Hypnotic and Cardiac diseases. [21]	Ulcers, Fever	
41	<i>Boerhavia diffusa</i> Linn.	Punarnava	<i>Nyctaginaceae</i>	<ul style="list-style-type: none"> ▪ Analgesic or Antinociceptive and Anti-inflammatory, Anti-hepatotoxic. [33] 	Anti-inflammation, Indigestion	
42	<i>Hibiscus cannabinus</i> Linn.	Patsan	<i>Malvaceae</i>	Cytotoxic, Anthelmintic, antibacterial, antiulcer, Antidiabetic, Hypolipidemic, Antioxidant, Immunological [5]	Haematinic and hepatoprotective effects	
43	<i>Achyranthes aspera</i> Linn.	Chirchita	<i>Amaranthaceae</i>	Antimicrobial, larvicidal, Antifertility, Immunostimulant, Hypoglycemic, Hypolipidemic, Anti-inflammatory, Antioxidant, Diuretic, Cardiac stimulant, Antihypertensive, Anti-anasacra. [13]	Hemorrhoids, Indigestion	
44.	<i>Millettia pinnata</i> <i>Panigrahi</i> (Linn.)	Kalinga	<i>Fabaceae</i>	Anti-ulcer, Anti-diarrhoeal, Anti-plasmodial, Anti-inflammatory, Anti-viral, Anti-bacterial, Anti-lice	Wound and gastric treatment, ulcers	

45.	<i>Sphagneticola trilobata</i> Linn.	Pilabhangara	<i>Asteraceae</i>	Antioxidant, Analgesic, Anti-inflammatory, Antimicrobial	Mental illness, Hypertension	
46.	<i>Launaea procumbens</i> Roxb.	Jangi Gobi	<i>Asteraceae</i>	Antioxidant and Anti-inflammatory	Liver and Sexual diseases like gonorrhoea	
47.	<i>Parthenium hysterophorus</i> Linn.	Gajar Ghas	<i>Asteraceae</i>	Anti-inflammatory activity, Hypoglycemic activity, Pesticidal activity ^[34]	Diarrhoea, Skin inflammation	
48.	<i>Lantana camara</i> Linn.	Raimuniya	<i>Verbenaceae</i>	Antibacterial activity, Anticancer activity, Anti-fungal activity, Anthelmintic activity, Anti-hyperglycemic activity and Antioxidant activity ^[15]	Cancers, Chicken pox, Measles	
49.	<i>Leucas martinicensis</i> Link.	Chhota halkusa	<i>Lamiaceae</i>	Anti-inflammatory, Analgesic, Anti-diarrheal, Antimicrobial, Antioxidant ^[11]	Infectious diseases, Rashes, Diarrhoea	

Conclusion

Documentation of wild medicinal plants information of Khasra 359 used in different types of Indian systems of medicine and is base for on medicinal plant research in western part of Agra. It shows that the area of this region is very potential for the medicinal plant resources for the sustainable importance of the various herbal pharmaceuticals for the management of various health disorders for used of local people.

Acknowledgement

Author are thankful to Director, DEI Dayalbagh for providing the infrastructures for successful maintained of

wild medicinal plants at Khasra-359 Shanti Nagar to be used Human Welfare.

Declaration

Ethical Approval

Not Applicable

Consent to Participate

Not Applicable

Consent to Publish

Not Applicable

Authors Contributions

Jeetendra singh and Vandana was major contributor to the writing and collection of data of the manuscript. And Dr. Santendra Kumar Soni is provided Guidance for this this work

Funding

Not Applicable

Competing Interests

The authors declare that they have no competing interests.

Availability of data and materials

Not Applicable

References

- Abdel-Salam OM, Youness ER, Ahmed NA, El-Toumy SA, Souleman AM, Shaffie N, *et al.* Bougainvillea spectabilis flowers extract protects against the rotenone-induced toxicity. *Asian Pacific journal of tropical medicine*,2017;10(5):478-490.
- Agyare C, Dwobeng AS, Agyepong N, Boakyie YD, Mensah KB, Ayande PG, *et al.* Antimicrobial, antioxidant, and wound healing properties of *Kigelia africana* (Lam.) Beneth. and *Strophanthus hispidus* DC. *Advances in pharmacological sciences*, 2013.
- Ahmad N, Mishra A, Ahsan F, Mahmood T, Hasan N, Khan Z. *Ricinus communis*: Pharmacological actions and marketed medicinal products. *World Journal of Pharmaceutical and Life Sciences*,2016;2(6):179-188.
- Ahouansinkpo E, Atanasso J, Dansi A, Adjatin A, Orobiyi A, Sanni A. Ethnobotany, phytochemical screening and toxicity risk of *Cleome gynandra* and *Cleome viscosa*, two traditional leafy vegetables consumed in Benin. *Int J Curr Microbiol Appl Sci*,2016;5(2):813-829.
- Al-Snafi AE. Pharmacological effects and therapeutic properties of *Hibiscus cannabinus*-A review. *Indo american journal of pharmaceutical sciences*,2018;5(4):2176-2182.
- Amoo SO, Okorogbona AOM, Du Plooy CP, Venter SL. *Sesamum indicum*. In *Medicinal Spices and Vegetables from Africa*. Academic Press, 2017, 549-579.
- Ansari TN, Iqbal S, Barhanpurkar S. Ecofriendly Dyeing with *Senegalia catechu* using biomordant.
- Asafo-Agyei T, Blagogee HR, Mintah SO, Archer MA, Ayertey F, Sapaty AC, *et al.* Ethnobotanical studies of medicinal plants used in traditional treatment of malaria by some herbalists in Ghana. *Journal of Medicinal Plants Research*,2019;13(16):370-383.
- Atawodi SEO, Olowoniyi OD. Pharmacological and therapeutic activities of *Kigelia africana* (Lam.) Benth. *Annual Research & Review in Biology*, 2019, 1-17.
- Bhatia H, Sharma YP, Manhas RK, Kumar K. Traditionally used wild edible plants of district Udhampur, J&K, India. *Journal of ethnobiology and ethnomedicine*,2018;14(1):73.
- Das SN, Patro VJ, Dinda SC. A review: Ethnobotanical survey of genus *Leucas*. *Pharmacognosy reviews*,2012;6(12):100.
- Deoda RS, Kadam PV, Shivatare RS, Narappanawar NS, Yadav KN, Patil MJ. Pharmacognostic and Phytopharmacological Profile of *Cassia tora* Linn-A Review. *Inventi Rapid: Planta Activa*, 2012.
- Dey A. *Achyranthes aspera* L: phytochemical and pharmacological aspects. *International journal of pharmaceutical sciences review and research*,2011;9(2):72-82.
- Du G, Xiao M, Yu S, Wang M, Xie Y, Sang S. *Phyllanthus urinaria*: a potential phytopharmacological source of natural medicine. *Int J Clin Exp Med*,2018;11(7):6509-6520.
- Edwin M. Phytopharmacological Evaluation of *Lantana Camara* Leaves'smoke.
- Gaire BP, Subedi L. A review on the pharmacological and toxicological aspects of *Datura stramonium* L. *J integr med*,2013;11(2):73-79.
- Ghogar A, Jiraungkoorskul W. Antifertility effect of *Bougainvillea spectabilis* or paper flower. *Pharmacognosy Reviews*,2017;11(21):19.
- Ghosh P, Dutta A, Biswas M, Biswas S, Hazra L, Nag SK, *et al.* Phytomorphological, chemical and pharmacological discussions about *Commelina benghalensis* Linn.(Commelinaceae): A review. *The Pharma Innovation Journal*,2019;8(6):12-18.
- GMPK, Shiddamallayya N. Coden IJABFP-CAS-USA Copyrights@ 2016 Received: 15 th Mar 2016 Revised: 4 th April 2016 Accepted: 5 th April 2016 Research article Ethnotoxic Knowledge of Poisonous Plants of Hassan District, Karnataka, India, 2016, 7(2).
- Gomase PV, Gomase PP, Anjum S, Shakil S, hahnavaj KM. Pharmacognostic study of *Sesbania bispinosa* (Jacq.) WT Weight leaves. *International Journal of Pharmaceutical Research*,2013;5(1):35.
- Hossain MA. A phytopharmacological review on the Omani medicinal plant: *Ziziphus jujube*. *Journal of King Saud University-Science*,2019;31(4):1352-1357.
- John J. Therapeutic potential of *Withania somnifera*: a report on phyto-pharmacological properties. *International Journal of Pharmaceutical sciences and research*,2014;5(6):2131-2148.
- Kamboj A, Saluja AK. Phytopharmacological review of *Xanthium strumarium* L.(Cocklebur). *International Journal of Green Pharmacy (IJGP)*, 2010, 4(3).
- Kasagana VN, Karumuri SS. Conservation of medicinal plants (past, present & future trends). *Journal of Pharmaceutical Sciences and Research*,2011;3(8):1378.
- Kausar J, Muthumani D, Hedina A, Anand V. Review of the phytochemical and pharmacological activities of *Euphorbia hirta* Linn. *Pharmacognosy Journal*, 2016, 8(4).
- Khurana Navneet, Sharma Neha, Patil Shailendr A, Asmita G. Phytopharmacological properties of *Sida cordifolia*: a review of folklore use and pharmacological activities. *Asian J Pharm Clin Res*,2016;2:52-58.
- Lele Y, Thorve B, Tomar S, Parasnis A. traditional uses of the wild plants, by the tribal communities of Jawhar, Palghar, Maharashtra, India.
- Luis A, Gil N, Amaral ME, Duarte AP. Antioxidant activities of extracts from *Acacia melanoxylon*, *Acacia dealbata* and *Olea europaea* and alkaloids estimation. *Int. J. Pharm. Pharm. Sci*,2012;4:225-231.
- Matsyagiri L, Sudhakar K, Santoshi T, Nagarjuna M, Gowrishankar NL. A Review on medicinal uses and pharmacological effects of *Cleome viscosa*. *Research*

- Journal of Pharmacognosy and Phytochemistry,2012:4(1):44-48.
30. Meybodi MSK. A Review on Pharmacological Activities of *Citrullus colocynthis* (L.) Schrad. Asian Journal of Research and Reports in Endocrinology,2020, 25-34.
 31. Mishra SH, Sethiya NK. Review on ethnomedicinal uses and phytopharmacology of memory boosting herb '*Convolvulus pluricaulis*' Choisy. Australian Journal of Medical Herbalism,2010:22(1):19.
 32. Mohite MS, Shelar PA, Raje VN, Babar SJ, Sapkal RK. Review on Pharmacological Properties of *Abutilon indicum*. Asian Journal of Pharmaceutical Research,2012:2(4):156-160.
 33. Murti K, Panchal MA, Lambole V. Pharmacological properties of *Boerhaavia diffusa*-a review. Int J Pharm Sci Rev Res,2010:5(2):107-110.
 34. Ndiuku HM, Ngule MC. Comparative study on the antibacterial and chemical constituents of *Pennisetum glaucum* (pearl millet) and *Zea mays* (maize). International Journal of Nutrition and Metabolism,2015:7(4):46-51.
 35. Negi JS, Singh P, Joshi GP, Rawat MS, Bisht VK. Chemical constituents of *Asparagus*. Pharmacognosy Reviews,2010:4(8):215.
 36. Ogunwande IA, Walker TM, Bansal A, Setzer WN, Essien EE. Essential oil constituents and biological activities of *Peristrophe bicalyculata* and *Borreria verticillata*. Natural Product Communications,2010:5(11):1934578X1000501125.
 37. Patel DK, Laloo D, Kumar R, Hemalatha S. *Pedaliium murex* Linn.: an overview of its phytopharmacological aspects. Asian Pacific journal of tropical medicine,2011:4(9):748-755.
 38. Patil A, Ladea BD. Pharmacological Aspects of *Tribulus terrestris* Linn.(Goksura): Progress and Prospects. Therapeutic Medicinal Plants, 2016, 375.
 39. Rahar S, Nagpal N, Swami G, Arora M, Bansal S, Goyal S, *et al.* Medicinal aspects of *saccharum munja*. Research Journal of Pharmacy and Technology,2010:3(3):636-639.
 40. Sahu N, Saxena J. Phytochemical analysis of *Bougainvillea glabra* Choisy by FTIR and UV-VIS spectroscopic analysis. Int J Pharm Sci Rev Res,2013:21(1):196-198.
 41. Salatino A, Salatino MLF, Negri G. Traditional uses, chemistry and pharmacology of *Croton* species (Euphorbiaceae). Journal of the Brazilian chemical society,2007:18(1):11-33.
 42. Saleem H, Usman A, Mahomoodally MF, Ahemad N. *Bougainvillea glabra* (Choisy): A comprehensive review on botany, traditional uses, phytochemistry, pharmacology and toxicity. Journal of ethnopharmacology, 2020, 113356.
 43. Saleem TM, Chetty C, Ramkanth S, Alagusundaram M, Gnanaprakash K, Rajan VT, *et al.* *Solanum nigrum* Linn.-A review. Pharmacognosy reviews,2009:3(6):342.
 44. Samuel VJ, Mahesh AR, Murugan V. Phytochemical and pharmacological aspects of *Tephrosia* genus: A brief review. J Appl Pharm Sci,2019:9(03):117-125.
 45. Shasmitha R. Health benefits of *Sesamum indicum*: A short review. Asian J Pharm Clin Res,2015:8(6):1-3.
 46. Shivhare MK, Singour PK, Chaurasiya PK, Pawar RS. *Trianthema portulacastrum* Linn. (Bishkhopra). Pharmacognosy reviews,2012:6(12):132.
 47. Siddiqui MF, Waghmare SP, Mode SG, Rekhate DH, Kolte SW, Hajare SW, *et al.* Phyto-Pharmacological study and therapeutic efficacy of *Calotropis procera* (Flower) against theileriosis in cattle. Journal of Animal Research,2017:7(4):757-762.
 48. Singh VV, Jain J, Mishra AK. Pharmacological and phytochemical profile of *Cassia occidentalis* L.: A review. Journal of Drug Delivery and Therapeutics,2016:6(5):91-96.
 49. Singhai AK. *Abutilons Indicum* Linn: A Phytopharmacological Review.
 50. Sowjanya P, Babu PS, Narasu ML. Phytochemical and pharmacological potential of *Amaranthus viridis* L.: a review. Int. J. Phytomed,2014:6:322-326.
 51. Tamboli SA, Kondawar MS. Phytochemical Investigation and Characterization of Ethanolic Fraction of *Ailanthus excelsa*.
 52. Tamizhazhagan V, Pugazhendy K. Ethnobotanical and Phytopharmacological review of *Pisonia alba* Span. Asian J Pharm Clin Res,2017:10(5):69-71.
 53. Tcheghebe OT, Seukep AJ, Tatong FN. Ethnomedicinal uses, phytochemical and pharmacological profiles, and toxicity of *Sida acuta* Burm. f.: A review article. The Pharma Innovation, 6(6, Part A), 2017, 1.
 54. Tekuri SK, Pasupuleti SK, Konidala KK, Amuru SR, Bassaiahgari P, Pabbaraju N. Phytochemical and pharmacological activities of *Solanum surattense* Burm. f.-A review. Journal of Applied Pharmaceutical Science,2019:9(03):126-136.
 55. Tripathi DK, Singh S, Singh S, Pandey R, Singh VP, Sharma NC, *et al.* An overview on manufactured nanoparticles in plants: uptake, translocation, accumulation and phytotoxicity. Plant Physiology and Biochemistry,2017:110:2-12.
 56. Usman MRM, Patil SB, Patil SS, Patil RS. *Sesbania sesban* Linn.: an overview. Int. J. of Pharm. & Life Sci.(IJPLS),2013:4(5):2644-2648.
 57. Zarshenas MM, Ansari R, Dadbakhsh A, Mohammadi M. A Review of Herbal Remedies for Multiple Sclerosis-Like Disorders in Traditional Persian Medicine (TPM). Current drug metabolism,2018:19(5):392-407.