



E-ISSN: 2278-4136
P-ISSN: 2349-8234
www.phytojournal.com
JPP 2020; 9(5): 615-620
Received: 06-06-2020
Accepted: 28-06-2020

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Medicinal plants used for dental problem and for Anti-diabetic purpose by the tribes in Kota block, Bilaspur (C. G.)

Durgesh Dixena and DK Patel

Abstract

Plants are major source of various valuable products including medicine which are utilized by the human beings for a variety of purpose from long ago. Tribes utilizing these plants for their primary health care to treat specific disorders by applying different plant parts following variable mode of utilizations. These relationships among the tribes and plants are termed as ethno botany.

Present study is based on record of Medicinal plants used by the tribes in Kota block, Bilaspur (C. G.) Especially for their dental problem and for anti-diabetic purpose. In current study there are ten medicinal plants were noticed useful for dental problem and thirteen Medicinal plants were found useful for anti-diabetic purpose. These Medicinal plants were documented following their botanical name, common name, Chhattisgarhi Name, family, habit, Useful plant parts, Mode of utilization, propagation and Availability of the Medicinal plants in Study area individually. The related information's on individual Medicinal plants was gained with the help of tribal peoples, beiges etc.

Keywords: Anti-diabetic, Dental problem, Medicinal plants, Tribes

Introduction

Most of the tribal groups living in villages which are situated on hill tops or neatly tucked in the valleys of tribal areas. The tribal areas are near and in the midst of forests and mountains. They have very little contact with others. Forests and tribal people are inseparable and their existence, development depends on each other. Tribal people have got a symbolic relationship with the forests and mountains located around them. Tribes utilizing forest resources for their livelihood as well as for their primary health care following application of varied medicinal plants found in and around the forest areas.

Ethno botany focus on direct relationship between peoples and plants. These are potentially utilizing since long age to treat varied disorders due to efficient compounds present in each and every one medicinal plants. Its concentration and types are variable among the plants these three traditional system of medicine like ayurveda, siddha and Unani all the system of treatment of various disorders. Focus on utilization of medicinal plants by different mode of preparation, these medicinal plants are significantly applied for different purposes. In term of concept and scope, ethno botany rapidly expanding in last three decades. In starting it was focused for utilization of plant by the tribals for different targets. Currently it is also including conservation of medicinal plants, ethno-pharmacognosy and ethno-pharmacology etc.

Tribes are living in different zone of the states, there are 5 tribal communities are declared as particularly vulnerable tribal groups (PVTG) by govt. of India in Chhattisgarh. Tribal peoples have explored a variety of herbal medicines for effective cure of various diseases. The utilization of plants, their preparation and administration are varies from area to area. There are numerous herbal medicines, whose ingredients have not been experimented and documented by the pharmaceuticals. But, by exclusive practice, these drugs have shown wonderful results. The knowledge of herbal medicine is gradually vanishing, although some traditional healers and aged tribes are still practicing the herbal medication. Knowledge provided by these tribal peoples is usually transferred to generations, by folklore. Therefore, a large amount of valuable knowledge about numerous herbal medicines has lost with the death of the people using it and also due to disappearance of the medicinal plants. Hence it is of great importance that this information should be gathered from traditional healers and documented for future reference, as there is an increase shift in the acceptability of herbal medicines compared to allopathic drugs, as they are effective, and efficient to treat specific disorders. The tribal people have a rich knowledge of different plants for use in different ailments, such as diarrhea, jaundice, fever, headache, leprosy, diabetes, malaria, fractures, dental problem, anti-diabetic purpose etc.

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In India, Ayurveda medicine has used many herbs such as turmeric possibly as early as 4,000 BC. Earliest Sanskrit writings such as the Rig-Veda, and Atharva Veda are some of the earliest available documents detailing the medicinal knowledge of the plants, that formed the basis of the Ayurveda system. Due to easily availability, low cost and no side effect for utilizing Medicinal plants are key factors for increasing their demand among the society day by day. Relation with Medicinal plants and tribes of the study area was studied.

Harsha *et al.* 2003 ^[1] focused on ethnomedicobotany of Utrakannada district in Kerala, India. Ethnobotanical studies in the tribes region of Hoshangabad district was done by Jain 2002. Ethnobotanical Knowledge of Medicinal Plants among Tribal Communities in Orissa was recorded by Kandari *et al.* 2012. ^[3] Maikhuri R. K. and Gangwar A. K. 1993 ^[4] studied on ethnobotanical notes of the Khasi and Garo tribes of Meghalaya, north east India. Maikhuri *et al.* 1998 ^[5] noticed Role of medicinal plants in the traditional health care system: A case study from Nanda Devi Biosphere Reserve. Traditional use of medicinal plants in south central Zimbabwe: review and perspectives was studied by Maroyi 2013. ^[6] Phondani *et al.* 2010 ^[7] focused on ethnobotanical uses of plants among Bhotiya Tribal Communities of Niti Valley in Central Himalaya, India. Ethnobotanical Survey of Medicinal Plants Used by the Traditional Healers in Mudivaithanathal Village of Thoothukudi District, Tamil Nadu, India was done by Priyadarshana *et al.* 2019. ^[8] Traditional herbal medical knowledge in Sagar taluk of Shimogga district, Karnataka, India was done by Rajkumar and Shivanna, M. B. 2010. ^[9] Rao *et al.* 2015 ^[10] recorded on some ethnomedicinal plants of parnasala sacred grove area eastern ghats of khammam district, Telangana, India. Documentation of Ethnomedicinal Knowledge of hilly tract areas of East Godavari District of Andhra Pradesh, India. Was recorded by Ratnaraju *et al.* 2014. ^[11] Rout and Panda 2017. ^[12] Focused on ethnobotanical survey of medicinal plants used for the treatment of diarrhoea and dysentery by the tribals of Similipal forest, Mayurbhanj, Odisha, India. Saranraj *et al.* 2016 ^[13] has done ethnobotanical survey of medicinal plants from Vellore district, Tamil nadu, India.

Kaur *et al.* 2017 ^[14] focused on dental herbalism: A review. Aapaliya *et al.* 2015 ^[15] studied on ethno-dentistry: tapping the potential of indigenous plants for therapeutic dentistry. Role of Medicinal Herbs in Oral Health Management was recorded by Dash *et al.* 2014. ^[16] Ganesan 2008 ^[17] studied on traditional oral care medicinal plants survey of Tamil Nadu. Mukhopadhyay *et al.* 2019 ^[18] studied on ANTI-DIABETIC MEDICINAL PLANTS: A REVIEW. Anti-diabetic Activity of Medicinal Plants was noticed by Hamed 2018. ^[19] Bnouham *et al.* 2006 ^[20] studied on medicinal plants with potential anti-diabetic activity-a review of ten years of herbal medicine research. Rajendran *et al.* 2018 ^[21] noticed on potential anti-diabetic activity of medicinal plants – A short review. Traditional plants medicines as treatments for diabetes was studied by Bailey and Day 1989. ^[22] Mahabir and Gulliford 1997 ^[23] recorded on use of medicinal plants for diabetes in Trinidad and Tobago. Joseph and Jini 2013 ^[24] studied on anti-diabetic effects of *Momordica charantia* (bitter melon) and its medicinal potency. Rafiullah *et al.* 2006 ^[25] noticed on anti-diabetic Activity of Some Indian Medicinal Plants.

Materials and Methods

Field visits were done (in adopted village by the Guru Ghasidas Vishwavidyalaya (A Central University) Bilaspur – Chhattisgarh - India) to achieve the present goal regarding ethnobotanical study on Medicinal and Aromatic Plants. Door to door survey was made and further discussion made with Local traditional healers, Baigas for gaining the information on Medicinal plants.

Result and Discussion

Ten Medicinal plants for dental problem and thirteen Medicinal plants useful for anti-diabetic purpose were recorded and listed in Table – 1 with the details on their botanical name, common name, Chhattisgarhi Name, family, habit, Useful plant parts, Mode of utilization, propagation and Availability of the Medicinal plants in Study area individually.

Table 1: Medicinal plants used for Dental Problem and for Anti-diabetic purpose by the tribes in Kota block, Bilaspur (C. G.)

A. Medicinal plants used for Dental Problem

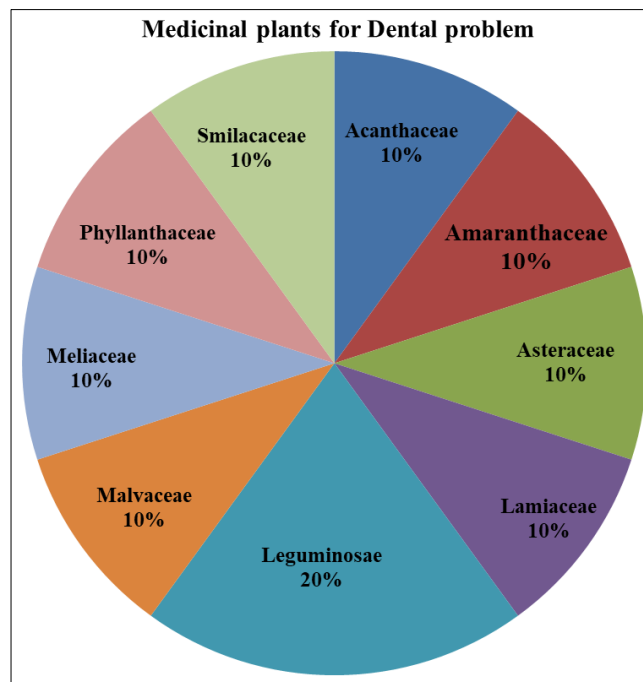
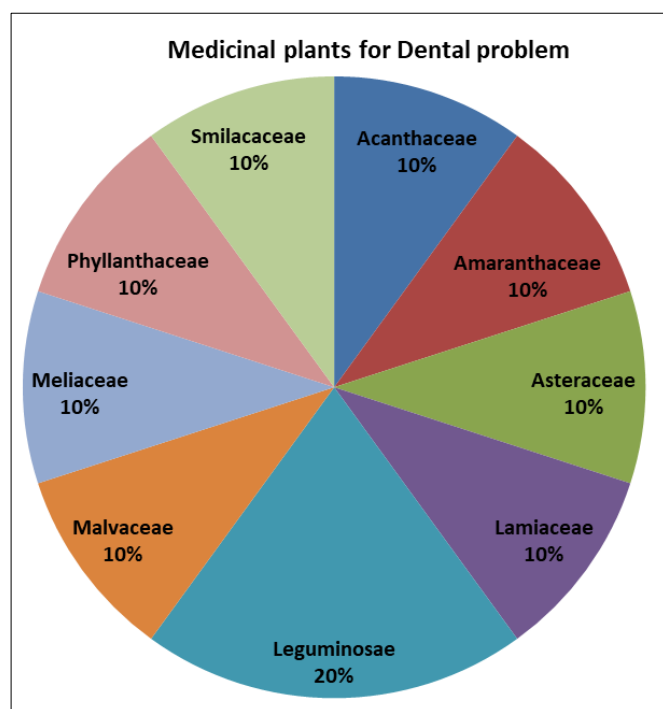
S. No.	Disorder Type	Medicinal Plant No.	Useful Medicinal Plant (Botanical Name)	Common Name	Chhattisgarhi Name	Family	Habit	Useful Plant Parts	Mode of Utilization	Propagation	Availability of the Medicinal plants in Study area
I.	Medicinal plants useful for Dental Problem	1.	<i>Acacia nilotica</i> (L.) Delile	Babool	Bambri	Leguminosae	Tree	Leaf, Stem, Fruit	<ul style="list-style-type: none"> ▪ Leaf and fruit decoction used for gargle thrice a day for a week ▪ New Stem/Twig used as chewed and used as toothbrush 	Seed	Abundant
		2.	<i>Achyranthes aspera</i> L.	Apamarg	Chitchita	Amaranthaceae	Herb	Stem	New stem used chewed and used for gargle thrice a day for 8-10 days	Seed	Abundant
		3.	<i>Azadirachta indica</i> A.Juss.	Neem	Leem	Meliaceae	Tree	Leaf, Stem	New Leaf, stem/twig chewed and used as toothbrush as well gargle thrice a day for 10-15 days	Seed	Common
		4.	<i>Barleria prionitis</i> L.	Bajradanti	Malti	Acanthaceae	Herb	Leaf, Stem	New tem used as toothbrush, Stem, leaf juice used for gargle twice a day for a week	Seed	Common
		5.	<i>Phyllanthus emblica</i> L.	Amla	Aura	Phyllanthaceae	Tree	Fruit	Fruit juice used for gargle twice a day for a week	Seed	Common
		6.	<i>Sida acuta</i> Burm.F	Bala	Balihari	Malvaceae	Herb	Stem	New Stem/Twig used as chewed and used as toothbrush	Seed	Abundant
		7.	<i>Smilax zeylanica</i> L.	Chobchini	Ram daton	Smilacaceae	Shrub/Climber	Stem	<ul style="list-style-type: none"> ▪ Stem extract used for gargle twice a day for a week ▪ Stem also chewed and used as tooth brush 	Seed	Common
		8.	<i>Spilanthes acmella</i> var. <i>oleracea</i> (L.) L.	Akarkara	Akarkara	Asteraceae	Herb	Inflorescence	Inflorescence chewed and its decoction used for gargle twice a day for a week	Seed	Common
		9.	<i>Tephrosia purpurea</i> (L.) Pers.	Sarfok	Sarfok	Leguminosae	Herb	Stem	Fresh stem chewed and used as tooth brush. Its powder of stem and root warm in water used for gargle twice a day for 10-12 days	Seed	Abundant
		10.	<i>Vitex negundo</i> L.	Nirgundi	Negur	Lamiaceae	Tree	Leaf, Stem	<ul style="list-style-type: none"> ▪ Leaf chewed and also leaf extract gargle twice a day for a week ▪ New Stem/Twig used as chewed and used as toothbrush 	Seed/ Stem cutting	Common

Table 1B: Medicinal plants used as Anti-diabetic purpose

II.	Medicinal plants used as Anti-diabetic purpose	1.	<i>Andrographis paniculata</i> (Burm.f.) Nees	Bhuineem	Bhuileem	Acanthaceae	Herb	All plant parts	Fresh leaves and stem crushed well, filtered, mixed with black salt and stored. Utilized after two days. One tea spoon twice a day is applied with one cup of water before meal for 15 – 20 days	Seed	Abundant
		2.	<i>Anogeissus latifolia</i> (Roxb. ex DC.) Wall. ex Guillem. & Perr.	Dhaora	Dhaora	Combretaceae	Tree	Bark and Seed	Bark and Seed decoction made by mixing black salt. A tea spoon in a glass of 100 ml water, preserve for 2-3 days. It is further utilized as one cup water and one spoon of decoction twice a day for 20 days	Seed	Common
		3.	<i>Butea monosperma</i> (Lam.) Taub.	Palas	Parsa	Leguminosae	Tree	Bark	Bark decoction taken orally one tea spoon in a cup of water twice a day for 25 days	Seed	Common
		4.	<i>Catharanthus roseus</i> (L.) G.Don	Sadabahar	Barahmasi	Apocynaceae	Herb	Leaf	10-15 leaves are heated in 100 ml of water. Extraction is further used orally for 15-20 days twice a day	Seed	Common
		5.	<i>Ficus glomerata</i> Roxb.	Gular	Dumar	Moraceae	Tree	Bark	Bark powder one tea spoon with one cup of water are taken before meal for 20 days	Seed	Rare
		6.	<i>Ficus religiosa</i> L.	Peepal	Peeper	Moraceae	Tree	Bark	Decoction of bark taken one cup decoction with adding of one cup water, twice a day for a week	Seed	Rare
		7.	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	Gudmar	Gudmar	Apocynaceae	Herb/Climber	Leaf, Stem	One tea spoon powder of leaf and stem are mixed with one cup of hot water and taken orally twice for 20 days	Seed/ Stem cutting	Rare
		8.	<i>Helicteres isora</i> L.	Marorphali	Aithi	Malvaceae	Shrub	Fruit, Bark, Root	Powder of fruit, Bark, Root mixed equally with warm water taken orally twice a day for 15 days	Seed	Rare
		9.	1. <i>Mangifera indica</i> L.	Aam	Aama	Anacardiaceae	Tree	Bark, cotyledons	Bark and cotyledons are cleaned and dried. Convert to fine powder and after preparation of decoction utilized two spoon thrice a day for 25 days	Seed	Common
		10.	<i>Momordica charantia</i> L.	Karela	Kalera	Cucurbitaceae	Herb/Climber	Leaf, Fruit	Boiled juice of leaf and fruits taken a glass twice a day for 15 days	Seed	Abundant
		11.	<i>Shorea robusta</i> Gaertn.	Sal	Sarai	Dipterocarpaceae	Tree	Bark	Fine dry powder one tea spoon in half glass of water taken orally twice a day for 30 days	Seed	Abundant
		12.	<i>Syzygium cumini</i> (L.) Skeels.	Chhota Jamun	Jamni	Myrtaceae	Tree	Bark and Seed	Fresh seed and bark are cleaned and crushed dried in sunlight for four days, applied two tea spoons in a cup of water twice a day for 20 days	Seed	Rare
		13.	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun	Kahwa	Combretaceae	Tree	Bark	Bark decoction mixed equally with water taken orally twice a day for a week	Seed	Rare

Table 2: Family wise distribution of Medicinal plants
Dental Problem

S. No.	Family	Dental Problem
1.	Acanthaceae	1
2.	Amaranthaceae	1
3.	Asteraceae	1
4.	Lamiaceae	1
5.	Leguminosae	2
6.	Malvaceae	1
7.	Meliaceae	1
8.	Phyllanthaceae	1
9.	Smilacaceae	1
TOTAL		10

**Medicinal plants for dental problem****Medicinal plants for dental problem**

Ten Medicinal plants found useful for the purpose dental problem and are belonging to families like two member of Leguminosae and each one -one medicinal plants observed for the families such as Acanthaceae, Amaranthaceae, Asteraceae, Lamiaceae, Malvaceae, Meliaceae, Phyllanthaceae and Smilacaceae. A total of four trees, five Herbaceous Medicinal plants including one Shrub/Climber were noticed. In term of propagation nine Medicinal plants propagating using seeds and one by Seed/Stem cutting. Availability of the Medicinal plants in Study area – Common six and Abundant four were recorded.

2. Anti-diabetic Purpose

S. No.	Family	Anti-diabetic Purpose
1.	Acanthaceae	1
2.	Anacardiaceae	1
3.	Apocynaceae	2
4.	Combretaceae	2
5.	Cucurbitaceae	1
6.	Dipterocarpaceae	1
7.	Leguminosae	1
8.	Malvaceae	1
9.	Moraceae	2
10.	Myrtaceae	1
Total		13

For Antidibetic purpose a total of thirteen medicinal plants were recorded. Out of which family Apocynaceae and Combretaceae includes two – two members whereas rest of the families like Acanthaceae, Anacardiaceae, Cucurbitaceae, Dipterocarpaceae, Leguminosae, Malvaceae, Moraceae and Myrtaceae include one – one member. Eight trees, Two Herb/Climber, Two Herb and one Shrub Medicinal plants recorded in this category (Anti-diabetic category). In term of propagation eleven Medicinal plants propagating by their seeds and one by Seed/Stem cutting. Availability of the Medicinal plants in Study area– Common -four, Rare - six and Abundant – three Medicinal plants were recorded. For both of the category dental problem and for anti-diabetic purpose different plant parts are used in different modes and are tabulated in Table -1.

References

- Harsha VH, Hebber SS, Shripathi V, Hedge GR. Ethnomedicobotany of Uttarakannada district in Kerala, India. Plants in treatment of skin disease, Journal of Ethnopharmacology. 2003; 84:37-40.
- Jain K. Ethnobotanical studies in the tribes region of Hoshangabad district with special reference to phytochemical analysis of some 1: 2 predominant plants. Thesis for Ph. D. (Botany), BarKatullah University, Bhopal (M. P.), 2002.
- Kandari LS, Gharai AK, Negi T, Phondani PC. Ethnobotanical Knowledge of Medicinal Plants among Tribal Communities in Orissa, India. Forest Res. 2012; 1(1):2-5.
- Maikhuri RK, Gangwar AK. Ethnobotanical notes of the Khasi ad Garo tribes of Meghalaya, north east India. Economic Botany. 1993; 47:345-357.
- Maikhuri RK, Nautiyal S, Rao KS, Saxena KG. Role of medicinal plants in the traditional health care system: A case study from Nanda Devi Biosphere Reserve. Himalaya Current Science. 1998; 75:152-157.
- Maroyi A. Traditional use of medicinal plants in south central Zimbabwe: review and perspectives. Journal of Ethno-biology and Ethno-medicine. 2013; 9(3):12-18.

7. Phondani PC, Maikhuri RK, Rawat LS, Farooquee NA, Kala CP. Ethnobotanical Uses of Plants among Bhotiya Tribal Communities of Niti Valley in Central Himalaya, India. *Ethnobotany Reserch & Application*. 2010; 8:233-244.
8. Priyadharshana M, Smitha V, Vadivel V. Ethnobotanical Survey of Medicinal Plants Used by the Traditional Healers in Mudivaithanathal Village of Thoothukudi District, Tamil Nadu, India. *Journal of Pharmacy and Biological Sciences*. 2019; 14(6):70-75.
9. Rajkumar N, Shivanna MB. Traditional herbal medical knowledge in Sagar taluk of Shimogga district, Karnataka, India. *Indian J Nat Prod Res*. 2010; 1:102-108.
10. Rao DS, Rao VS, Murthy P, Rao GMN, Rao YVRY. Some Ethnomedicinal Plants of Parnasala sacred grove area Eastern Ghats of Khammam District, Telangana, India. *J Pharm. Sci. and Res*. 2015; 7(4):210-218.
11. Ratnaraju Y, Yugandhar P, Savithramma N. Documentation of Ethnomedicinal Knowledge of hilly tract areas of East Godavari District of Andhra Pradesh, India. *International Journal of Pharmacy and Pharmaceutical sciences*. 2014; 6(4):6-24.
12. Rout SD, Panda T. Ethnobotanical survey of medicinal plants used for the treatment of diarrhoea and dysentery by the tribals of Similipal forest, Mayurbhanj, Odisha, India, *App. Sci. Report*. 2017; 19(1):9-18.
13. Saranraj P, Bhavani L, Suganthi K. Ethnobotanical survey of medicinal plants from Vellore district, Tamil nadu, India, *Int. J Adv. Res. Biol. Sci*. 2016; 3(9):238-246.
14. Kaur R, Dr. Tirth A, Ravishankar TL, Kaur S, Bhattacharyya S, Hamid N. Dental herbalism: A review. *Journal of Medicinal Plants Studies*. 2017; 5(5):196-199.
15. Aapaliya P, Sinha S, Sinha L, Malik V. Ethno-Dentistry: Tapping the Potential of Indigenous Plants for Therapeutic Dentistry. *J Pharm Biomed Sci*. 2015; 5(01):31-38.
16. Dash TR, Singh N, Gupta D, Panwar E, Ramisetty S. Role of Medicinal Herbs in Oral Health Management. *Int J Dent Med Res*. 2014; 1(2):113-119.
17. Ganesan S. Traditional oral care medicinal plants survey of Tamil Nadu, *Natural Product Radiance*. 2008; 7(2):166-172.
18. Mukhopadhyay N, Sampath V, Pai S, Babu UV, Lobo R. Anti-diabetic Medicinal plants: a review, *International Research Journal of Pharmacy*. 2019; 10(2):31-37.
19. Hamed MM. Anti-diabetic Activity of Medicinal Plants, *Int. J Pharm. Sci. Rev. Res*. 2018; 51(1):151-165.
20. Bnouham M, Ziyat A, Mekhfi H, Tahri A, Legssyer A. Medicinal plants with potential anti-diabetic activity-a review of ten years of herbal medicine research, *Int. J Diabetes Metab*. 2006; 14:1-25.
21. Rajendran A, Sudeshraj R, Sureshkumar S. Potential anti-diabetic activity of medicinal plants – A short review. *J Phytopharmacology*. 2018; 7(5):456-459.
22. Bailey CJ, Day C. Traditional plants medicines as treatments for diabetes. *Diabetes Care*. 1989; 12(8):552-556.
23. Mahabir D, Gulliford MC. Use of medicinal plants for diabetes in Trinidad and Tobago. *Rev Panam Salud Publication*. 1997; 1:174-179.
24. Joseph B, Jini D. Anti-diabetic effects of *Momordica charantia* (bitter melon) and its medicinal potency, *Asian Pacific Journal of Tropical Disease*. 2013; 3(2):93-102.
25. Rafiullah MRM, Siddiqui AW, Mir SR, Ali M, Pillai KK, Singh S. Anti-diabetic Activity of Some Indian Medicinal Plants, *Pharmaceutical Biology*. 2006; 44(2):95-99.