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Tridax Procumbens as a Medicinal Plant: A Study

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INTRODUCTION

Tridax procumbens, its leaves and stem was collected from Vetal hill, TalukaHaveli, District- Pune, Maharashtra State of India in the Summer, (March and April, 2017 and 2018), monsoon (August and September, 2017 and 2018) and winter (November and December, 2017 and 2018). Vetal Hill is a prominent hill in the city limits of Pune, India. The hill is the highest point within the city limits, with an elevation of 2600 ft. There is a temple of Vetala located on the top of the hill from which the hill derives its name. The Indian Forest Department maintains an observation deck near the temple. The hill is also known by its Marathi name, Vetal Tekdi. Vetal Hill is a part of Bhamburda Van Vihar located on the western side of Pune Municipal Corporation within the city limits. Vetal Tekdi is prominent and is visible from Pashan, Panchavati, Chatturshrungi and other parts around the hill. It has two spurs, Fergusson College Hill and Chatturshrungi Hill. The geographical area is 180 30‟ to 180 32‟ N latitude and 730 49 to “730 52” E longitude covering an area of 10.5 square kilometers. It runs North-South with some spurs running perpendicular to this hill. Vetal hill runs across areas like MIT College, near Y.M. College Bharati Vidyapeeth, SNDT Women's University, ILS Law College, Gokhale Nagar, Symbiosis Society and Chatturshrungi. One may rich the hill top from one access road on the south. There is also automotive research association of India campus on the hill top.

Climate of the Hill

It is cool and foggy during winter, rainy, cloudy and foggy during monsoon and the summer is hot and dry at the top hill. The temperature ranges between 10 ºC rarely less than 10 ºC some time dipping up to 6 ºC during winter and usually 35 ºC sometimes reaching up to 40 ºC during hot summer showing daily variable fluctuations. Sunrise and sunset is attractive on the hill. Climatic conditions of pune are almost similar to that of hill.

Soil texture

The soil texture and rocks are main components of the hill land. Soil is res murum is abundant followed by lower stratum of black rock. Surface soil is very thin while this black rock is quite deep as it is evident from the stone mine on the Vetal hill which has been field with rain water and haeboured by various aquatic plants and algae with different animals like fishes, frogs, crabs, beetles etc. Hence this surface layer of the soil is faurable for many of the drought resistant plants and the most common among them is the Tridax procumbens L. which I have selected for my research on physiological analysis of Tridax procumbens L. as a medicinal plant.

OBSERVATIONS

Ethanol extract of T. procumbens leaves showed presence of terpenoids, carbohydrates, Proteins and flavonoids in high quantity while alkaloids, Catecholic Tannins, Glycosides, saponin and Phenols in less quantity. Steroids, flavones, Gallic tannins and reducing sugars were completely absent in ethanol extract of T. procumbens leaves. T. procumbens leaves methanol extract revealed the presence of alkaloids, flavonoids, carbohydrates, Phenols and Proteins in high concentration while steroids, gallic tannins, Glycosides and saponin present in very less concentration. Terpenoids, flavones, catecholic tannins and reducing sugars were completely absent. Proteins were the only compound which is present in high concentration in petroleum benzine extract of T. procumbens leaves and steroids, carbohydrates, Glycosides found in very less amount. Flavonoids, flavones, gallic tannins, terpenoids, phenols, catecholic tannins, reducing sugars and saponins were found to be completely absent.

DISCUSSION

Natural products, either as pure compounds or as standardized plant extracts, provide unlimited opportunities for new drug leads because of the unmatched availability of their chemical diversity. There is a continuous and urgent need to discover new compounds with diverse chemical structures

and novel mechanisms of action for new and re-emerging infectious diseases. Many aromatic plants have been used conventionally in folk medicine as well as to cover the shelf life of foods, display inhibition against fungi, bacteria and yeast (Rojas et al.,2003). Therefore, researchers are gradually turning their attention to folk medicine observing for new leads to develop enhanced drugs against microbial infections (Benkeblia, 2004). Medicinal plants are very effective against several diseases like diarrhea, skin disease, constipation, cancer, jaundice etc. and they have potential to act against multi-drug resistant pathogenic bacteria and fungi. The phytochemicals are divided into primary metabolites such as sugar and fat, which are found in all plants and secondary metabolites are compounds, which are found in smaller range of plants, serving a most specific function. For example, some secondary metabolites are toxins used to deter predation and others are pheromones used to attract insect for pollination. It is this secondary metabolites and pigments that can have therapeutic action in human and which can be refined to produce drug. Different solvents have been demonstrated to have the ability to extract different phytoconstituents dependent on their solubility or polarity in the solvent. In the present study we have evaluated qualitative and quantitative analysis of leaves and stem extract of Tridax procumbens L. Ninoetal (2006) stated that Tridax procumbens is an annual weed, but we have collected sample in summer, winter and mansoon season so it is perennial. The qualitative and quantitative analysis of aqueous, acetone, chloroform, diethyl ether, ethanol, methanol and petroleum benzine extracts of Tridax procumbens L. leaves exhibited the presence of alkaloids, steroids, terpenoids, flavonoids, flavones, gallic tannins, catecholic tannins, reducing sugars, carbohydrates, glycosides, saponin, phenols and proteins.

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