



ORIGINAL ARTICLE

Comparison of Rhizospheric and Non-rhizospheric soils of Some Medicinal plants

R. K. Momin and R.M.Dhere

Department of Botany, Milliya Senior College, Beed.- 431122 Maharashtra (INDIA)

Department of Zoology, Sawarkar College, Beed.- 431122 Maharashtra (INDIA)

ABSTRACT

Ten various species of Medicinal plants were collected , identified and listed out . The medicinal plants include *Adulsa*, *shatavari*, *Brahmi*, *sarphgandha* *Akalkara* *Gavtichaha* *Jiranium* *Lendipeoli*, *Safedmusli*, and *Dekemali*. These plants are mostly used for pharmaceutical and Ayurvedic drugs industries to prepare various type of medicines. The soil sample form the rizospheric and non rhizospheric region was analysed and comparision was made with respect to the type of soil pH of the soil the ability to fix atmospheric nitrogen and also different type of bacteria were isolated.

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INTRODUCTION

Since the beginning of human civilization plants have been one of the most important source of medicine. In spite of tremendous development in the field of allopathy, plants still form one of the major sources in modern as well as traditional medicine throughout the world. India is a storehouse of medicine plants about 70% of rural folk depends on medicinal plant for their health care. Six hundred and twenty seven plants are known to be used in the country for medicinal important [1Rao et.al.] The seed constitute the drug of commerce which are mainly used as laxative and in skin diseases such as ring worm and itch [2] plant growth in two different ways directly and indirectly by producing phytoharmones ,siderophores nitrogen fixation and solubilising inorganic phosphate and indirectly by suppressing deleterious microorganism [3]. It has been revealed that total count of bacteria in rhizospheric soil is much more than compared to non rhizospheric soil. Many plant growth Promoting organisms from the rhizosphere are for to fix nitrogen produce organic acids etc. [4]. The present study aimed at selection of some medicinal plants and their comparison of rhizospheric and non- rhizospheric flora. Some of the medicinal plants selected were *Asparagus recemosus*, *Andropogon citrates*, *Rauwolfia serpentine*, *Ficus lacor*, *Tragia involucrate*, *Pelargonium graveolens*, *Gardenia gummifera*, *Anacyclus pyrethrum*, and *Centella asiatica*.

MATERIAL AND METHOD

All the Chemicals were of A.R. grade obtained from Hi-media India the soil sample of rhizospheric and non – rhizospheric region of the above mentioned ten medicinal plants was collected and immediately analysed for checking the pH and determination of presence of *Azotobacter* species using nitrogen free mannitol broth and agar and determination of R:S ratio. Enumeration of the R:S ratio and *Azotobacter* was done on nutrient agar [5] and N₂ free mannitol agar. Allen [6] respectively using dilution technique.

RESULT AND DISCUSSION

The average R:S ratio was found that 1.5 soils of rhizospheric region as compared to soils of non-rhizospheric region (Table1).

Table: 1: The average R:S ratio was found that 1.5 soils of rhizospheric region as compared to soils of non-rhizospheric region

Sr. N.	Plants	R:S Ratio
1	<i>Asparagus adscendens</i>	*1.0
2	<i>Asparagus recemosus</i>	*1.0
3	<i>Andropogon citrates</i>	1.3
4	<i>Rauwolfia serpentine</i>	1.2
5	<i>Ficus lacor</i>	1.8
6	<i>Tragia involucrate</i>	1.4
7	<i>Pelargonium graveolens</i>	1.3
8	<i>Gardenia gummifera</i>	*1.0
9	<i>Anacyclus pyrethrum</i>	1.8
10	<i>Centella asiatica</i>	1.2

High bacterial population is attributed due to symbiotic and non-symbiotic association between the roots of the plants and the bacteria owing to this positive association there are more nutrients and hence the soil is more fertile and therefore the count of microorganism is very high in rhizosphere as compared to non-rhizosphere the pH of the soil both rhizospheric and non-rhizospheric was found to be neutral.

REFERENCES

1. Rao ,K.N.& Nayudu, M.V. (1979) Glimpse on the medicinal plants of seven hills tirupati, plant wealth of seven hills, TTD publications, Tirupati Andhra Pradesh.
2. R.K. Kritikar & B.D. Basu (1975) Indian Medicinal Plants Vol. II Periodical experts D-42.
3. Glick B.R. (1995) the enhancement of plants growth by free living bacteria, *Can J. Microbiol* 40(2): 109-117.
4. Pal K.K. (1995) Rhizobacteria as bacteriological control agents for soil borne plant pathogenic fungi Ph.D. thesis. Indian agricultural research institute New Delhi.
5. Allen (1953) experiment in soil Bacteriology.(II) Burgges Publication Co. Minneapolis, Min, USA127.
6. Ketznelson H. Bose-B: (1969) Metabolic activity and phosphatise dissolving capability of bacterial isolates from wheat roots rhizosphere and non rhizospheresoil. *Can. J. Microbiol* : 78-85.

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