

## NOTE

**Antimicrobial Efficacy of Successive Seed Extracts of  
*Tephrosia purpurea***

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The seed extracts of the plant *Tephrosia purpurea* were tested for their antimicrobial and antifungal properties in various solvents against some human, animal and plant pathogenic bacteria. The study depicted that the seed extract showed a good inhibition effect against all the tested micro-organisms.

**Key Words:** *Tephrosia purpurea*, Successive seed extract, Antimicrobial and antifungal properties.

*Tephrosia purpurea*<sup>1</sup> (N.O. Leguminosae) is commonly known as "sarphonka" in Hindi. It is copiously branched, herbaceous, perennial, 30-60 cm high, having branches spreading, glabrous or sparsely pilose. It has been reported to possess significant medicinal values<sup>2-5</sup>.

About 2 kg of seeds of *Tephrosia purpurea* were collected and finely powdered. The finely powdered seeds were successively extracted with solvents (i) petroleum ether (ii) benzene (iii) chloroform (iv) acetone (v) ethyl alcohol in a soxhlet apparatus. After removal of the solvents, the syrupy residual masses were collected for each extract. These extracts were tested separately for their antibacterial and antifungal activities.

The antibacterial activities were tested against plant and human pathogenic bacteria by oxide nutrient agar and by Sikorowski *et al.*<sup>6</sup> method. The results in each bacterial case were expressed in terms of inhibition zones.

Also the antifungal activities were tested by filter paper disc<sup>7</sup> method, using soft nutrient agar (2%) and petri plates (sterilized and previously seeded with the test species).

Table-1 shows that chloroform and acetone seed extract showed better results in comparison with control against *Salmonella paratyphi* (second strain). On the other hand, the examination of results in Table-2 shows that all the successive seed extracts show varying degree of antifungal activity. The chloroform, acetone and ethyl alcohol seed extracts have been found to possess promising antifungal activity against the growth of all the test micro-organisms. The acetone and chloroform extract showed much better inhibition zones in comparison to Griseofulvin (1000 ppm), particularly against *C. tropicum* and *K. Terreum*.

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TABLE-1  
ANTIBACTERIAL ACTIVITY OF SEED EXTRACT OF *TEPHROSIA PURPUREA*

| S. No. | Bacterial Species                        | Diameter of inhibition zone (mm)         |         |            |         |               | Control |
|--------|--|--|---------|------------|---------|---------------|---------|
|        |  | Seed extract in inhibition zone solvents |         |            |         |               |         |
|        |  | Pet. ether                               | Benzene | Chloroform | Acetone | Ethyl alcohol |         |
| 1.     | <i>Salmonella paratyphi</i> (1st strain) | 11.8                                     | 11.2    | 14.2       | 9.8     | 15.6          | 27      |
| 2.     | <i>Staphylococcus albus</i>              | 20.0                                     | 16.0    | 15.0       | 15.2    | 23.0          | 24      |
| 3.     | <i>Bacillus pumillis</i>                 | 23.0                                     | 30.0    | 38.0       | 19.1    | 16.0          | 38      |
| 4.     | <i>Salmonella paratyphi</i> (2nd strain) | 10.2                                     | 11.8    | 16.1       | 30.8    | 2.8           | 26      |
| 5.     | <i>Bacillus anthracis</i>                | 18.0                                     | 15.5    | 17.8       | 21.6    | 23.8          | 35      |

TABLE-2  
ANTIFUNGAL ACTIVITY OF SEED EXTRACT OF *TEPHROSIA PURPUREA*

| S. No. | Fungal Species                   | Diameter of inhibition zone (mm)         |         |            |         |               | Control |
|--------|----------------------------------|--|---------|------------|---------|---------------|---------|
|        |                                  | Seed extract in inhibition zone solvents |         |            |         |               |         |
|        |                                  | Pet. ether                               | Benzene | Chloroform | Acetone | Ethyl alcohol |         |
| 1.     | <i>Bolryotrichum keratinophi</i> | 7.4                                      | 6.8     | 7.5        | 8       | 8.5           | 20      |
| 2.     | <i>Chrysosporium tropicum</i>    | 8.8                                      | 9.7     | 17.6       | 11.8    | 11.0          | 17      |
| 3.     | <i>Malbranchea pulchella</i>     | 7.0                                      | 6.9     | 8.6        | 13.0    | 11.0          | 15      |
| 4.     | <i>Keratinophyton terreum</i>    | 13.0                                     | 10.0    | 26.0       | 24.0    | 19.0          | 25      |

As the seed extracts of *Tephrosia purpurea* were found to possess promising antibacterial and antifungal properties, these may be explored for removing human sufferings.

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