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Analgesic and antimicrobial effect of methanolic extract of *Tephrosia purpurea* root bark

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Abstract
The plant *Tephrosia purpurea* is a commonly found wild weed. the plant growing in waste lands of Bijapur district was collected in the month of January and shade dried. After converting the shade dried root bark into course powder, it was subjected to soxhlet extraction using methanol as solvent. The crude extract was found to be positive for phytochemical tests of glycosides, alkaloids and flavonoids. The crude extract was further studied for its potency against bacteria and also for the analgesic property. The results are summarized in the form of tables represented at the end.

Keywords: *Tephrosia purpurea*, analgesic and analgesic

Introduction
Herbs have been used to transform, diagnose & treat spiritual, emotional & physical ills in every tradition from the shamanic cultures of Africa, Mexico & Tibet to the highly regulated medical herbalists of today. John E Smith tells us more carbon dating from ancient Babylon (Iraq) records that plants were cultivated as medicines 60,000 years ago. Written materia medica of medicinal herbs go back approximately 5000 years in India, China & Egypt and at least 2500 years in Greece & Asia minor 2500 years ago, Hippocrates (the father of medical literature),stated as part of his oath: "I will give no deadly medicine to any one". Hippocrates used only food and herbs and is best known for the sayings: "Let your food be your medicine and let medicine be your food" "sickness is caused by the bodies inability to digest its environment"

Herbal medicine today
It is generally considered that all medicines should be 'evidence based' and validated by scientific research. In making these rulings, several key issues are overlooked. Almost all 'evidence based' pharmaceutical medicines, weather prescribed or non-herbalists are no longer burned at the stake, but their freedom to practice is constantly threatened by EU regulations, prescribed, have potential side effects. Herbal medicine is not a science, it is a healing art. Herbalists do not target symptoms, they treat individual, and although two individuals may have identical symptoms, the mode of treatment and the herbs used may differ according to constitution, health history and many other factors. Herbs are not specific medicines, they are 'special foods' having many different properties. There are a very few cases of herbs toxicity and where toxicity may apply, these herbs are either restricted to practitioners use or banned entirely.
Many herbal bodies in the UK are currently fighting for regulations in order to protect their profession from further threats to its continuation. Other herbalists feel that we should just be left alone to practice without government interference in accordance with the charter laid out by Henry VIII, or even the 1968 medicines act. It's highly debated topic in the herbalist circle and passions run high.
To support the continuous of herbal medicine and the continued availability of over the counter herbs and supplements, please do make your point by written to your local MP. It may help to ensure herbalism has a long and healthy future. John E Smith is a Bristol based herbalist and author of two books on herbal medicine.
Introduction to the present plant
Tephrosia purpurea is a species of flowering plant in pea family that has a pan tropical distribution. It is a common wasteland weed. In many parts it is cultivation as green manure crop. It is found throughout India and shrilanka in poor soils.

Common names
English-fish poison wild indigo
Hindi-sarphonk, sharpunka
Rajastani – masa

T. purpurea is used as a fish poison; the leaves and seeds contain teprosine, with paralysis fish, but mammals and amphibians are unaffected. It is also used traditionally as folk medicine. According to Ayurveda the plant is anti-hermitic, alexitric, alternative and antipyretic. It is used in the treatment of leprosy, ulcers, asthma and tumors as well as diseases of the liver, spleen, heart and blood. A decoction of the root is given by dyspepsia, diarrherea, asthma and urinary diseases. The root power is salutary for brushing the teeth, where it is said to quickly relieve dental pains and bleedings.
An extract termed betaphroline is claimed to promote release of endorphins and finds use in certain cosmetic preparation.

Scientific Classification
Kingdom; plantae
(Unranked); Angiosperm
(Unranked); Eudicots
Order; Fabales

Tribe; millettieac
Genus;Tephrosia
Species; *T. purpurea*
Binomial Name
Tephrosia purpurea (L.) Pers
Life cycle duration;ann. occ. pers
Mean plant height; 1550mm

A copiously branched herbaceous perennial 30-60cm height; Branches spreading leaves 5-10cm. Imparipinnate leafets 11-21oblaceolate.Obatase or retuse mucronate 2-2.8cm long.Flowers purplish pink in leaf opposed lax raceme. 7.5-12.5cm long pods 3-4.5cm long linear slightly curved.
Roots of Tephrosia Purpuria were collected from Torvi, Vijayapura Field, behind Karnataka State Women's University, Bijapur, Karnataka, India, in the month of January 2014.
Ethanol extracts were accomplished according to established protocols. Each dried plant sample was ground and extracted in a percolator with 95% ethanol. About 10 ml of ethanol per gram of plant sample was used. The ethanol extract was dried under a reduced pressure at 40 °C. The dried extract was stored in sterile bottles until further use.

Phyochemical Test
The crude extract of *Tephrosia purpurea* root bark upon screening for phytochemical tests jas revealed the presence of various class of compounds. Among them, Alkaloids, Glycosides, flavonoids are important.

Antimicrobial Activity
Extracts were tested against the strains for their inhibitory activity, using cup plate method[g]. a previously liquefied medium was inoculated appropriately to the assay with requisite quantity of suspension of microorganism between 40 to 45^{o}C and the inoculated medium was poured into petri-dishes to give a depth of 3 to 4 mm. with the help of a sterile corn borer 4 cups of each 6mm diameter were punched and scooped out the set agarin each petri dish. Using sterile pipettes, standard and test samples of known concentrations were fed into the board cups.
Microorganisms used:
S. aureus,
B. subtilis
E. coli
P. aeruginosa.
The results of this antimicrobial screening is summarized in the preceding table no-1

Results and Conclusion
The results of antimicrobial activity of methanolic extract of *Tephrosia purpurea* root bark has shown some positive activity as compared with the standard drug. Though the activity if not very challenging but their trend is positive. Therefore the crude extract can be further isolated and studied for its biological potency

Tables

Table: 1: Results of Antimicrobial Activity

Sample	Concentration	Zone of inhibition in mm			
		S. aureus	***B. subtilis***	***E. coli***	***P. aeruginosa***
Sample-1	500 µg	14	15	13	13
Sample-1	250 µg	10	11	10	11
Sample-1	125 µg	08	10	08	09
Sample-1	100 µg	07	08	06	07
Std (streptomycin)	100 µg	16	18	18	16
Solvent Control	--	06	06	06	06

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