P: ISSN NO.: 2394-0344 RNI No.UPBIL/2016/67980 VOL-2* ISSUE-4* July- 2017
E: ISSN NO.: 2455-0817 *Remarking An Analisation*

Evaluation of Antimicrobial Activities of White Mustered Extract *(Brasica Compestris)* against Pathogenic Microbes

Anil Kumar Soni
Lecturer,
Deptt.of Zoology,
Seth G. L. Bihani S.D. P. G. College,
Sri Ganganagar

Charan Singh
Professor,
Deptt.of Biotechnology,
Seth G. L. Bihani S. D. P. G. College,
Sri Ganganagar

Abstract

The aim of the study was to evaluated antimicrobial properties of extract of white mustard. In this study extract solvent like ethanol and methanol was used antimicrobial activity.

Our study investigation the antimicrobial activity of varying solvent extract of white mustard seed extract against *B.Subtillis* and *E-coli* preliminary antimicrobial screening of yellow mustard has been done by other researchers through the minimum inhibitory concentration but our work demonstrates disc zone method on white mustard. It significantly reports white mustard ethanolic fraction as potential antibiotic.

Keywords: White Mustard, Methanolic Extract, Antimicrobial, E. Coli, B. Subtilis.

Introduction

Mustard has been used as medicinal over hundered of years constitute an over choice for study. The number of emerging multidrug resistant microbial strains is countinuously increasing and has become one of the most serious threats to successful treatment of infectious diseases.(Sharma et. al 2005)This increase is mainly attributed to indiscriminate use of broad spectrum antibiotic (jadhave et. al 2013,shahidi bonjar et. al2004) *Brassica competeris* (var.sarson)is one of the most popular species of mustard of the family cruciferae. Mustard seed is widely utilized in the preparation of varities at edible sauces, pastes and pickle(ref) scientific investigation into the nature, origin and composition of the mustard oils have been described for over 300 years (Ngassoum MB et. al 2003)).The world health organization (WHO) reported that at about 80% of the world/s population depends premarity on traditional medicine that mainly involves theuse at plant extract. There are 2600 plants species of which more than 700 are noted for their uses as medicinal herbs. The traditional use of plants as medicinal provide the basis for indicating which essential oils and plant oil may be useful for specific medical conditions (Shrivastva et. al 2012) Infectious disease are still a major health issue, especially in developing countries, leading to the death of millions of people, despite enormous improvement in health care system. Attention is now being swith over the plant as they may present a new sources of antibacterial, antifungal and antiviral agents (Tahirazamir et. al 2013,nair R et. al 2004,2005,v.shrivastva et. al 2012)

Review of Literature

Nair and Chandra (2006) screened 20 plants for antimicrobial activity. Medicinal plants are an important therapeutic aid for various ailments, Mustard brown is also known as Indian mustard. It had been stated that mustard brown is an old-fashioned tonic for stiffness, foot aching, back pain inoffensive, aperitif, stimulant and rheumatism [Duke JA, Wain KK.]. It is reported that seeds of Mustard brown used for the treatment of malignant tumors in China and roots of Mustard brown had been employed as a galactagogue in Africa. Different studies revealed that in Tanganyika, its leaves as well as its flowers was smoldered to produce an aroma which revolting to mosquitoes. It had been assumed towards this plant to be aperients and booster so its volatile oil had been castoff as a counterirritant and intoxicating. Mustard brown has been employed as an antisyphilitic emmenagogue in Javaas well as its leaves was used for the relieve of headache [Burkill JH.]. Reported data shows that people eat the plants leaf for the curement of swelling of bladder in china [Perry LM.].

Mustard brown is also used in the treatment of inflating aching of ribs, deep abscess, arthritias, menostasis and brainy seepage [Sung KC]. Previous studies exhibited that in Yunani as well as Ayurveda, seeds of Mustard brown has been used for the curement of skin ailments, viscera diseases as well as infections caused by worms. Brown mustard has a component which is employed in numerous Ayurveda medicinal emollient as this oil is castoff as ointment in the curement of several paralytic maladies of central nervous system [Krishnamurthy KH]. It is reported that oil of Mustard brown has been applied as an antidote in large concentrations in poisoning circumstances [Prajapati DN, Purohit SS]. Oil extracted from Mustard brown has established a pronounced interest to be used in phytotherpeutical medicines. Different research work shows that Mustard brown also displays preventing measurements on the development of bacteria as well as fungi that is responsible for food poisoning [Shin SW, Kang CA]. Mustard brown plant also exhibits suppressive outcomes on cancer cells [Yano T, Yajima S].

Aim of the Study

Main objective of this study the use of plant extract to manage disease is eco-friendly, economical and toxin free method. It will be beneficial to farmer, consumers as well as nature.

Material and Methods

Plant material (seed) used for study were collected from Sri Ganganagar and Hanumangarh region, North Rajasthan

Extraction of Plant Material

Collated seed material was dired in shade and grounded in a grinder with a 2 mm diameter mesh. The dired and powdered paint material (500g) was extracted successively with 1 liter of methanol (voukeng Ik et.al 2012)and ethanol using soxhlet extractor for 48 h at a temperature not exceeding the boiling point of the solvent.

The aqueous extracts were filtered with whatman filter paper (no.1) (Ates DA et. al 2003) and then concentrated in vacuo at 40 C^0 using a rotary evaporator. The residues obtained were stored in a freezer at -40 c^0 until further analogies (Singh et al 2015)

Culture Media

3 gm of nuclear hinden medial (hi media) was mixed with distilled water and then sterilized in autoclave at 15 lb for 15 minutes the sterilized medial's were poured into petridishes. The solidified plates were seal with parafilm.

Microorganisms

Escherichia coli (MTCC-443) (yagoub et al.2008, Obina NC et. Al 2009) *Bacillus subtillis* (MTCC-1789) both Bacterial cultures were obtained in pure form the culture collection at institute of microbial technology (IMTECH) Chandigarh, India

Antibacterial activity testing of mustard (B. competeris) using papers disc diffusion assay

The cultures were aseptically swabbed on the surface of sterile nutrient after plates using a little cotton swab. Suspensions of the both strains with small volume (0.01 ml) were added to each nutrient agar plate and them evently seeded and streaked by means of sterile swab on the agar plate surface.

Disc paper were used by immersing it in the oil extract of B. Competeris seed in the plate in triplicate and the paper disc was dispensed with a sterile forceps on to the surface of the inoculate agar plate and pressed down to ensure complete contact with the agar surface seed extracts and paper discs were allowed to diffuse for about 30 minuts before incubation and then five plates were incubated in an upright position at 37 e far 24 hours after are night incubation, the diameter of inhibition zones were measured in mm using a plastic ruler antibiotics disc was served as positive control.

Results & Discussion

The antimicrobial activity of studied species was determined against both bacterial strains. Both extracts (ethanol and methanol) should zone of inhibition against bacterial strain. The zone of inhibition was showed in fig.1 for B. competeris.

The obtained zone of inhibition is measured in mm and summarized in table -1

According to tab.-1 comparasion of the mean inhibition zone of ethanol and methanol seed extract of B. competeris with positive control against both bacterial strains.

Ethanolic extract of white mustard seed exhibited stronger antimicrobial activity in comparasion with methanol extract between the set of test bacterial strains ethanol extract of the mustard seed inhibited the growth of *B. subtillis* to the maximum followed by *E-coli*

Conclusion

Based on the above result we can conclude that

1. B comp feed is an important for antimicrobial activity.
2. More inhibition zone was observed in seed extract by ethanol as compound to methanol.

More inhibition zone was observed in seed extract against *B. subtillus* as comparared to *E-coli*

Acknowledgement

The authors and thankful to the Biotechnology and Zoology department for laboratory facilitates.

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Table 1st

Comparison of the Antimicrobial Activity of Ethanol and Methanol Mustard Seed Extract of B. Competeris against *B Subtillis* and *E-Coli*

Test of organism	Solvent	Inhibition zone (mm)	Positive control (streptomycin)
B. Subtillis	Ethanol	25	32
	Methanol	19.5	32
E-Coli	Ethanol	20.5	35
	Methanol	16	35

Fig.1 Inhibition Zone of Ethanol and Methanol Extracted White Mustard against *E. Coli*

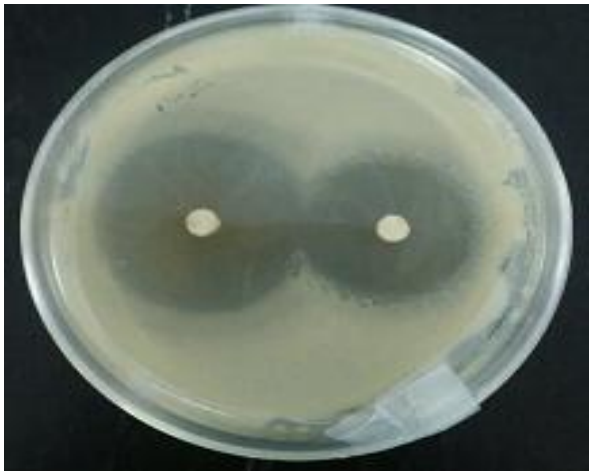

Fig 2. Inhibition Zone of Ethanol and Methanol Extracted of White Mustard against B.Subtillus.