International Multidisciplinary Research Journal 2012, 2(3):23-24
ISSN: 2231-6302
Available Online: http://irjs.info/

INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL

Antifungal activity of algal extracts against plant pathogenic fungi

S.M Kamble[1] , A.U. Rokde [1] and Ashok M. Chavan[2]

[1]Department of Botany, Sangmeshwar College Solapur (M.S.), India.
[2]Department of Botany, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad- 431004 (M.S.), India.

Abstract
Extracts of different algal samples were tested for different fungal population; it reveals that cold water extract of algae showed antifungal activity.

Keywords: Algal Extract, fungi, cold water Extract

INTRODUCTION

Algae are the very important group of plant kingdom, they occur in verity of habitats. Algae are now a days become very important constituents, they are important providers of a wide array of bioactive compounds including plant growth regulators like gibberellin, auxin, cytokinin, ethylene, abscisic acid and jasminc acid [1]. Algae also content agar-agar, protein, vitamins and mineral etc. but the detail work belonging to antifungal activity is not carried out. Ten different algae, *Chara grovesi Cladophora callicoma, Hydrodictyon, reticulatum, Nitella batrachosperma, Schizomeris leibleinis, Phormidium corium, Spirogyra plena,* and *Plectonima platensis* were collected from different fresh water reservoirs of Marathwada. It's fine powder was prepared and used for further investigation.

MATERIALS AND METHOD

The fine algal powder was prepared propane from the algae which were colleted from different sits. They had kept in air tight specimen bottle until use, extraction of algae was made in cold water. Antifungal activity of such algal samples was determined by using plant pathogens like *Alternaria alternata, Aspergillus flavus, Fusarium roseum, Trichoderma harzianum* and *Curvularia lunata,* Bioassay was done in glucose nitrate (GN) medium. In GN medium algal extract along with 1ml fungal spore suspension was added and kept for seven days after seven days of inoculation the mycelium was harvested and results are noted.

RESULTS AND DISCUSSION

The cold water extract of some algae shows stimulatory as well as inhibitory effect. The algal extract of *Nitella batrachosperma, Spirulina platensis and Phormidium corium* shows stimulatory property for *Alternaria alternata, Aspergillus flavus* and *Fusarium roseum* respectively, whereas the algal extract of *Hydrodictyon reticulatum, schizomeris leibleinii*, *Spirogyra plena* and *Plectonema gracillimum* shows total inhibitory growth against plant pathogenic fungi.

Bernard et al (1989) [2] showed autibacterial and antifungal activity of extract prepared from the rhizomen to Mediterranean seagrass posidonia, also Composed et al (1988) [3] noted antimicrobial activity of marine algae from Brazilian northern. Coast Prashantkumar et al (2006) [4] recorded antimicrobial activity of blue green and green algae, Kulkarni (1993) [5] studied seven algae for its antimicrobial activity against *Aspergillus flavus, Aspergillus niger* and *Alternaria brasica*.

Table 1. Antifungal activity of algal extract against plant pathogenic fungi

Name of Algae	*Alternaria alternate*	*Aspergillus Flavus*	*Curvularia lunata*	*Fusarium roseum*	*Trichoderma harzianum*
Chara grovesii	0.043	0.099	0.040	0.035	0.032
Cladophora callicoma	0.029	0.086	0.050	0.039	0.070
Hydrodictyon reticulatum	0.0101	0.041	0.070	0.080	0.070
Schizomeris leibleinii	0.040	0.035	0.040	0.037	0.042
Phormidium corium	0.037	0.075	0.048	0.101	0.060
Spirogyra plena	0.014	0.067	0.040	0.049	0.047
Plectonema gracillimum	0.018	0.012	0.030	0.038	0.022
Scytonema coactile	0.024	0.075	0.035	0.084	0.040
Spirulina platensis	0.043	0.099	0.040	0.035	0.032
Control	0.086	0.076	0.075	0.063	0.080

The values in numbers indicate the mycelium weight in grams.

REFERENCES

[1] Iain, E.P., Taylor and Amanda, J. Wilkinson. 1977. The occurrence and gibberlin like substances in algae. *Phyhcologia*.16 (1): 37-42.

[2] Bernard, P. and Pesanda, D. 1889. Antibacterial and antifungal activity of extracts from the Rhizomes of the Mediterranean seagrass poisoned. Oceanic (L) Delile. *Botanica Marine*.32. 85-88, 1989

[3] Campos, G.M., de-Takaki, M.B.S. Diu, Koening, M.L. and Pereira, E.C. 1998 Screening of marine algal from Brazilian

Received: Jan 08, 2012; Revised: Feb 06, 2012; Accepted: March 10, 2012.

*Corresponding Author

S.M Kamble
Department of Botany, Sangmeshwar College Solapur (M.S.), India.

Email: suhaskamble@rediffmail.com

Northeastern coast. *Botanica marina.* 31:375-377.

[4] Prashantkumar, P. Angadi, S.B. Vidyasagar, G.M. 2006. Antimicrobial activity of blue green and green algae. *Indian Journal of Pharmaceutical sciences*. 68:647-648.

[5] Kulkarni, M.K. 1993. A Study of biotoxins of algal origin, Ph.D thesis. Dr. B.A.M.U. Aurangabad (MS)