



Special Issue (NSAZ-2022)

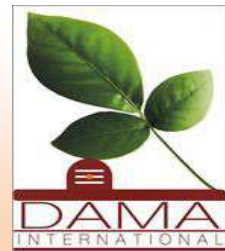


TFR

Trends in Fisheries Research

An International Peer-Reviewed Journal

www.sciencejournal.in



**Science and Engineering Research Board (SERB) Sponsored
National Symposium
On**

Applied Zoology, Profitable Animal Production, and Health: Current Status and Future Progress (NSAZ-2022)

Organized by

**Department of Zoology and Fishery Science,
Rajarshi Shahu Mahavidyalaya (Autonomous),
Latur- 413531, Maharashtra**

On

23rd & 24th September- 2022

Volume 11, Issue 1(2022), ISSN: 2319-474X (p); 2319-4758 (e)

© 2019 DAMA International. All rights reserved



**National Symposium on
Applied Zoology, Profitable Animal Production, and Health: Current Status and Future
Progress
(NSAZ-2022)**

**Organized by
Department of Zoology and Fishery Science,
Rajarshi Shahu Mahavidyalaya (Autonomous),
Latur- 413531, Maharashtra
23rd & 24th September- 2022
(Conference Special Issue)**

Copyright: © The Research Work as a Theory with Other Contents, Images, Tables, Charts in Full Papers Are subject To Copyright Taken by Shiv Chhatrapati Shikshan Sanstha's Rajarshi Shahu Mahavidyalaya (Autonomous), Latur Department of Zoology and Fishery Science (M.S.) India, And © 2019 DAMA International. All Rights Reserved Executive Editors, Editors, Co-Editors And Authors Of This Conference Issue.

Disclaimer: The author/authors are solely responsible for the content of the papers compiled in this conference special issue. The publisher or editors does not take any responsibility for the same in any manner. No part of this publication may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

Published By:

Publisher: DAMA International

E-ISSN: 2319-4758

Print ISSN: 2319-474X

URL: www.sciencejournal.in

Chief Editor: Dr Laxmikant B. Dama

Contact email: trendsres@gmail.com

Address: 15 B. Vijaynager, Z.P. Colony, Bijapur Road, Solapur (M.S.), India.

Country: India

Volume 11, Issue 1(2022)

ISSN: 2319-474X (p); 2319-4758 (e)

© 2019 DAMA International. All rights reserved

Index

Sr.No	Papers / Article Title – Name of Authors	Page Number
01	Isolation, Identification and Biochemical Characterization of Probiotic Bacteria Isolated from Fresh Water Fishes of Gharani River Madhuri Y. Bhande, Dnyaneshwar S. Rathod, Datta A.Nalle	1-6
02	Assessment of antibacterial potential of formulated ointment containing medicinal plants against some fish bacterial pathogens. Shivaji G Jetithor , Datta A.Nalle	7-12
03	Rediscription of a species <i>Senga paithanensis</i> , Kadam et.al., 1981 from fresh water fish, <i>Mastacembelus armatus</i> (Lacepede, 1800) from Beed district (M.S.) India. Asha Bidkar , Amol Thosa and K.S. Raut	13-19
04	Monthly Comparative Study of Physico-Chemical Parameters Of Siddheshwar Reservoir of District Hingoli, Maharashtra, India. Priyanka Patode, B.S.Salve	20-31
05	Monthly Comparative Study of Zooplankton Diversity Of Siddheshwar Reservoir of District Hingoli, Maharashtra, India. Priyanka Patode B.S.Salve	32-37
06	Microbial Quality Assessment of Frozen fish and fish processing materials from Latur city market. Mushtakh Hashmi, Datta A. Nalle	38-44
07	Turbidity, TDS and Transparency in Water Bodies of Ekruk Dam from Tale Hipparga Taluka South Solapur (M.S.) India Shashikala Laxman Bhalkare	45-47
08	A Review on Significance of Nutritional Value of Fish for Human Health. Eknath Pawade , Hanumant Jagtap	48-55
09	Socioeconomic status of fishermen communities around Niwali reservoir in Parbhani District, (M.S.), India. Mr. Gajanan. S. Sargar¹, Mr. Ashish .S. Hasekar², Dr. B. G. Thakare.	56-67
10	Isolation of Chitinolytic Pseudomonas species from the shrimp shell waste PB Pawar, *DV Vedpathak , *SM Inchure	68-74
11	Comparative Study Of Major Carps DNA-RNA Ratio At Same Acceptance In Relation To Nutritional Condition And Their Growth Rate In Latur, Dist Latur [M.S.], India Raut K.S., K.D.Savant., Nagime P.S., Mahamuni P.B , Mali.P.P	75-80
12	Effects of the amino acids rich dietary feed supplement on the. Protease activity of Wallago attu subsequent to Stress condition Datta Ashok Nalle, Madhuri Y. Bhande, Pratiksha Patil	81-86
13	Comparative Physico-Chemical Profile Of Sukhana River In Aurangabad, (M.S.) India ‘Sonawane S.D. And Shaikh J.D.’	87-100
14	Study of water quality of Darphal (gawadi) Lake, Solapur, Maharashtra. Sujit D. Pawar, Shahaji S. Chandanshive, Smita K.Shimple	101-104
15	Synthesis and antimicrobial activities of New 3-(chloromethyl)-2-(piperidin-1-yl)quinoline Derivatives. Kalimoddin I. Momin¹, Rajkumar U. Pokalwar	105-115
16	A case study of Magur (<i>Clarias gariepinus</i>), the fish banned in India Phadke S.V.	116-129

17	Essential Composition and Analytical Methods of Honey. Yeshwant Patne ,Abhinay Surwase, Dhanshree M. Jagtap	130-134
18	Impact of Dimethoate Toxicity with Special Reference To Histopathological Alteration In Intestine of The Freshwater Fish Rasbora Daniconius. Dnyaneshwar S. Rathod, Milindkumar V. Lokhande	135-142
19	Altered quality aspects of deteriorated seeds of peanuts (Arachishypogaea L.) With response to ageing K.D.Savant*, Raut K.S**	143-151
20	Effect of Natural Coagulant on Cham Cham Prepared By Using Goat Milk B.D. Landge*, R.B. Yedatkar**, M.D. Rathod***	152-164
21	IMPACT OF ANIMAL MORTALITY IN INDIA *SM Dapkekar, **RB Yedatkar, ***VV Lute	165-168

Assessment of antibacterial potential of formulated ointment containing medicinal plants against some fish bacterial pathogens.

Shivaji G Jetithor¹, Datta A.Nalle²

¹Department of Fishery Science, Yeshwantrao Chavan Mahavidyalaya, Tuljapur Dist. Osmanabad. (Maharashtra) India.

²Department of Zoology & Fishery Science, Rajarshi Shahu Mahavidyalaya (Autonomous) Latur (Maharashtra) India.

E-Mail: shivajijetithor@gmail.com , iprometheous007@gmail.com

ABSTRACT:

In present investigation the ointment is made with *Holarrhena pubescens*, *Cocculushirsutus*, *Ocimum tenuiflorum*, ; Cross streak technique shows inhibition zone greater than 10 mm in ointment C followed by B, D, A and E against all the test pathogens. By good quality of its greater inhibition zone in the cross streak method and positive antibacterial activity, ointment C (*Holarrhena pubescens* 3.5 %) was selected for further experiments. the test were carried up to 4 week and zone of inhibition were checked at 7th, 14th, 21st, 28th day. the greater inhibition zone found in ointment C for *Enterobacter aerogenes* it were shown (16.9 ± 0.5) followed by ointment D (14.3 ± 0.5) at 21st day. the greater inhibition zone found in ointment C for *Aeromonashydrophila* it were shown (17.9 ± 0.4) followed by ointment D (15.3 ± 0.6) at 21st day. Ointment E which do not contain medicinal plant mix do not shows greater inhibition activity. which clearly shows that present formulation responsible to inhibit bacterial growth infected to animals.

KEYWORDS: Medicinal Plants, Fish Health, Antibacterial.

Introduction:

Skin care measures are premeditated to apply when on the skin. some important measures are formulated creams, ointments and lotions which been used in the treatment of animal wound, fungal/bacterial infection bearing in mind the attentiveness of medicine with degree of solubility, current formulations are proved be beneficial for treating localized skin infection [1] Aquaculture is the fastest growing food-producing sector in the world, with an average annual growth rate of 8.9% and practiced in a variety of agro-climatic zones ranging from tropical to temperate area. It includes farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. The world aquaculture has grown tremendously during the last 50 years from a production of less than a million tonnes to 59.4MT. The production in aquaculture is hampered by disease caused by various fish pathogens and is constraint to the culture of many aquatic species. The persistent disease problems in aquaculture necessitate the use of bacterial control agents as probiotics which can be effectively used as an alternative to antibiotics.

Plants having medicinal ability has been used as conventional medicine since the decades. The medicinal plant extract obtained from various parts viz. leaves, roots and stem have been utilized as ailments for many diseases [2] hence these all medicinal Plants used as necessary foundations in therapeutic mediators to cure various diseases occurred in human and animal. Conventionally the herbal medications served as holistic loom for protection and to improve metabolism and health [3]

Recent herbal medical ointment formulation has been provided good result. Medicinal plants are significant foundations of novel chemical essences which work as helpful therapeutic results. Many investigations carried out in terms of wound healing treatment by using medicinal plants. current investigations were carried out on *A.sessilis*, *M.citrifolia*, *Lycopodium* Sesamum *Catharanthus*, *Euphorbia* Wound is further been explained by WHS (Wound Healing Society), wound is physical damage which further consequences into break of the skin and open it so that it cause disorder related to regular skin composition and function [4] Consequence in the hammering of permanence of epithelial tissues. Unhealed injuries steadily create inflammatory arbitrators which cause pain and bulge at the wound site. [5] In present investigation we were used following plants having medicinal properties.

Medicinal Plants Used In experiment:

1. *Holarrhena pubescens*:

Commonly known as Indra-jao in regional language . A kind of shrub, grow up to 3 meter in height. Small stem with pale bark.. White color flowers, at the end of branches. This medicinal plant was been described within Ayurveda , use for Diarrhoea and stomach disturbances further the bark is helpful for piles, various skin diseases. *Cocculus hirsutus* (Vasanvel): *Cocculus hirsutus* most well-liked along with its medicinal use in asia ,it is abandon source of various alkaloids, very few attempts have been made in terms of its antifungal and wound healing potential. *Ocimum tenuiflorum* (Rantulas): the medicinal use of *Ocimum tenuiflorum* is well known many studies carried out *in vitro*, on animal and human shows its unique property as Antimicrobial, anti-oxidant, anti-cataract, anti-inflammatory, radio- defensive, hepato-defensive, immunomodulatory, memory improvement, opposed to-asthmatic, , diaphoretic, defiant to thyroid, useful in fertility, cure ulcer, opposed to emetic, opposed to-spasmodic, , opposed to-leukodermal and helpful in blood coagulant activities.[6,7,8,9]

Materials and methods:

II.1. Sample Collections:

The fresh plant materials were collected from Local farms and hills of Osmanabad. The sample was identified and confirmed by using botanical keys of identification. The leaves of medicinal plants were dried and used dry powder of medicinal plants in variable amount (Table 1, Figure .A) as *Holarrhena pubescens* (indrajav), *Cocculushirsutus* (vasanvel), *Ocimum tenuiflorum* (rantulas). The dehydrated plant leaves were crushed by a blender to get smaller particles.

II.2. Ointment Formulation:

Semisolid emulsions (O/W) oil in-water. An emulsifying agent is used to scatter the aqueous stage to oily stage or vice versa [10]. The important components in cream formulation are emulsifying agent, water, oil, thickener and preservatives. The dehydrated sample was stored in the refrigerator at temperature 4 °C. To make an aqueous extraction Mix Medicinal Plants leaf were marinated in 2000 ml of water further it allow to heat (50 °C to 80 °C) constant stirring using magnetic stirrer.

Filtered and the dehydrated sample was stored in the refrigerator at temperature 2 °C. Herbal ointment was organized spitted by addition of oil fraction to aqueous fraction. Further it was mixed and thawed inside container stirring were applied continuously.

As soon as ingredients of medicinal plants were melted allowed for cooling process. During making of aqueous ointment 35% ointment was mixed with 65% of heated water. Sudden melting and cooling were obtained. chloroscresol used as preservative active ingredients of the plants extracts with dissimilar concentration of *Holarrhena Pubescens* (Indrajav)=2.5gm, 3gm, 3.5gm. 4gm were used. Physicochemical properties of mix medicinal plants and ointment were checked as per standard.

II.3. Study of Antagonistic action of ointment and wound healing

In present investigation the antagonistic action of the ointment tested with the help of Cross Streak Method suggested by Lechevalier and Waksman [11]. The solitary streak of the chosen bacteria was prepared upon nutrient agar plate further incubated (37⁰). Pathogenic bacteria such as, *Enterobacter aerogenes*, *Aeromonas hydrophila* streaked to right side of original streak record of ribbon like band around it were noted. plates incubated (28°C) record taken of

inhibitory zones created by each isolates the measurement were also recorded as sensitive, moderate and resistant. One control plate was maintained.

Results:

III.1: Antagonistic activity

Table 2: Antibacterial activity of the medicinal plant mix ointment against pathogens

Pathogenic Bacteria	Day	Ointment A	Ointment B	Ointment C	Ointment D	Ointment E
<i>Vibrio parahaemolyticus</i>	7	5.3±0.7	5.4±0.7	6.6±0.7	6.2±0.1	4.1 ±0.1
	14	5.9±0.4	5.9±0.5	6.9±0.2	7.2±0.1	4.8 ±0.1
	21	9.3± 0.2	9.8 ±1.5	16.9 ±0.5	14.3 ±0.5	6.4 ±0.4
	28	9.2 ± 0.1	9.4 ±0.5	14.9 ±0.5	13.2 ±0.5	6.1 ±0.3
<i>Aeromonas hydrophila</i>	7	4.2±0.4	4.4±0.3	5.9±0.4	6.1 ±0.3	4.3 ±0.2
	14	6.3±0.4	6.5±0.4	6.8±0.5	7.6 ±0.5	5.0 ±0.2
	21	9.6± 0.4	10.1 ±0.5	17.9 ±0.4	15.3 ±0.6	6.1 ±0.8
	28	9.4 ± 0.5	9.9 ±0.5	13.9 ±0.6	12.9 ±0.5	5.1 ±0.6

The ointment formulations were O/W (oil water) type emulsion ointment. All A, B, C, D and E ointments showed good stability. The pH of ointments were ranges 6.2 to - 6.9 this ointment pH is neutral to the skin. These parameters were steady for 1 month. Cross streak technique shows inhibition zone greater than 10 mm in ointment C followed by B, D, A and E against all the test pathogens. By good quality of its greater inhibition zone in the cross streak method and positive antibacterial activity, ointment C (*Holarrhena pubescens* 3.5 %) was selected for further Experiments. the test were carried up to 4 week and zone of inhibition were checked at 7th, 14th, 21st, 28th day .the greater inhibition zone found in ointment C for *Enterobacter aerogenes* it were shown (16.9 ±0.5) followed by ointment D (14.3 ±0.5) at 21st day. the greater inhibition zone found in ointment C for *Aeromonashydrophila* it were shown (17.9 ±0.4) followed by ointment D (15.3 ±0.6) at 21st day. Ointment E which do not contain medicinal plat mix do not shows greater inhibition activity .which clearly shows that present formulation responsible to inhibit bacterial growth infected to animals.(Table 2)

IV-Discussion:

The major aim to formulate present ointment is for animals suffer from wounds .and most of time they use to treat it with mouth and chemicals can go in stomach which little bit cause

digestive disturbances . In present ointment most of plants are natural. so no major harm in physiology. test on animals will be further carried out .here we just put the results of antibacterial potential of present ointment formulation . The formulated ointment was oil in water type hence comfortable to wash out with water easily

Similar experiment was carried out using methanolic extract by using medicinal plant *Eucalyptus* anti-dermatophytic ointment were prepared [12] (Moghimipour *et al.*, 2009). pH is also in satisfactory limit. Lambers *et al.* (2006) [13] said that pH of skin is acidic but with wide series ranges 4-7. Spreadability is good in present ointment. Here at ointment C the best results are seen by variable percentage of medicinal plant mix. Similarly ointment formulated with single medicinal plant *Mangifera indica* also shown safe and best results [14]

REFERENCES:

- 1) Woodruff, J. (1995). Preservatives to fight the growth of mould. *Manufacturing Chemist*, 66 (9): 34–35.
- 2) Kandasamy, R., Rengasamy, K., Subramani, S., Henry, L. and Kumari, J. (2014). Formulation of herbal bath soap from *Vitex negundo* Leaf Extract: *Journal of Phytodrugs*, 2014: 1-5.
- 3) Trakranrungsie, N., Chatchawanchonteera, A. and Khunkitti, W. (2008). Ethnoveterinary Study for antidermatophytic activity of *Piper betle*, *Alpinia galanga* and *Allium ascalonicum* extracts *in vitro*. *Research in Veterinary Science*, 84: 80-84.
- 4) Strodtbeck, F., 2001. Physiology of wound healing. *Newborn Infant Nurs. Rev.*, 1: 43-52.
- 5) Rajendran, R., Robertson, D. P., Hodge, P. J., Lappin, D. F. and Ramage, G. (2010). Hydrolytic enzyme production is associated with *Candida albicans* biofilm formation from patients with type 1 diabetes. *Mycopathologia*, 170: 229–235.
- 6) Mahajan N, Rawal S, Verma M, Poddar M, Alok S.(2013) A phytopharmacological overview on *Ocimum* species with special emphasis on *Ocimum sanctum*. *Biomed Prev Nutr*. 3:185–92.
- 7) Mohan L, Amberkar MV, Kumari M. (2011) *Ocimum sanctum* linn. (TULSI)-an overview. *Int J Pharm Sci Rev Res*;7:51–3.
- 8) Pattanayak P, Behera P, Das D, Panda SK.(2010) *Ocimum sanctum* Linn. A reservoir plant for therapeutic applications: An overview. *Pharmacogn Rev.* ;4:95–105.
- 9) Mondal S, Mirdha BR, Mahapatra SC. (2009) The science behind sacredness of Tulsi (*Ocimum sanctum* Linn.) *Indian J Physiol Pharmacol.* ; 53:291–306.
- 10) Khalid, A. S., Saringat, H. J. and Khan, G. M. (2005). Haruan (*Channa striatus*) incorporated palm-oil creams Formulation and stability studies. *Journal of Pharmaceutical Science*, 18(1): 1-5.



-
- 11) Lechevalier, H. A. and S. A. Waksman, (1962). The actinomycetes. III. Antibiotics of actinomycetes, The Williams & Wilkins Co., Baltimore, p.430
 - 12) Moghimipour, E., Ameri, A., Saudatzadeh, A., Salimi, A. and Siahpoosh, A. (2009). Formulation of an Anti-Dermatophyte cream from *Eucalyptus camadulensis* methanolic extract. *Journal of Natural Pharmaceutical Products*, 4: 32-40.