

₹ 200

ISSN - 2249-555X

Volume : 1

Issue : 9

June 2012



Journal for All Subjects

www.ijar.in

Listed in International ISSN Directory, Paris.



ISSN - 2249-555X

Indian Journal of Applied Research

Journal for All Subjects

Editor-In-Chief

Dr A Kumar

Director, College Development Council (CDC)
Director, Internal Quality Assurance Cell (IQAC)
Professor in Management,
Department of Business Administration, Faculty of Management,
Bhavnagar University,

Editorial Advisory Board

Dr. S. N. Pathan
Maharashtra

Dr. SM. Ramasamy
Gandhigram

Dr. M. M. Goel
Kurukshetra

Dr. S. Ramesh
Tamil Nadu

Dr Ramesh Kumar Miryala
Nalgonda.

Dr. B. Rajasekaran
Tirunelveli

Dr. A. R. Saravankumar
Tamilnadu

Dr. Roy M. Thomas
Cochin

Dr. G. Selvakumar
Salem

Dr. Apurba Ratan Ghosh
Burdwan

Dr. Shrawan K Sharma
Uttarakhand

Dr. Sudhanshu Joshi
Uttarakhand

Prof. (Dr.) B Anandampilai
Pudhukottai

Advertisement Details

Position	B/W (Single Color)	Fore Color
Full Inside Cover	₹ 6000	₹ 12500
Full Page (Inside)	₹ 5000	-

Subscription Details

Period	Rate	Discount	Amount Payable
One Year (12 Issues)	₹ 2400	Nil	₹ 2400
Two Year (24 issues)	₹ 4800	₹ 200	₹ 4600
Three Year (36 issues)	₹ 7200	₹ 300	₹ 6900
Five Year (60 issues)	₹ 12000	₹ 600	₹ 11400

You can download the Advertisement / Subscription Form from website www.ijar.in. You will require to print the form. Please fill the form completely and send it to the **Editor, INDIAN JOURNAL OF APPLIED RESEARCH** along with the payment in the form of Demand Draft/Cheque at Par drawn in favour of **INDIAN JOURNAL OF APPLIED RESEARCH** payable at Ahmedabad.

1. Thoughts, language vision and example in published research paper are entirely of author of research paper. It is not necessary that both editor and editorial board are satisfied by the research paper. The responsibility of the matter of research paper/article is entirely of author.
2. Editing of the Indian Journal of Applied Research is processed without any remittance. The selection and publication is done after recommendations of atleast two subject expert referees.
3. In any condition if any National/International University denies accepting the research paper published in IJAR, then it is not the responsibility of Editor, Publisher and Management.
4. Only the first author is entitle to receive the copies of all co-authors
5. Before re-use of published research paper in any manner, it is compulsory to take written permission from the Editor-IJAR, unless it will be assumed as disobedience of copyright rules.
5. All the legal undertaking related to Indian Journal of Applied Research is subject to Ahmedabad Jurisdiction.
7. The research journal will be send by normal post. If the journal is not received by the author of research papers then it will not be the responsibility of the Editor and publisher. The amount for registered post should be borne by author of the research paper in case of second copy of the journal.

Editor,

Indian Journal Of Applied Research

8-A, Banans, Opp. SLU Girls College, New Congres Bhavan, Paldi,
Ahmedabad-380006, Gujarat, INDIA

Contact.: +91-9824097643 E-mail : editor@ijar.in

INDEX

Sr. No.	Title	Author	Subject	Page No.
1	Cost of capital: an empirical case study of hindustan unilever limited	Dr. Vinod K. Ramani	Accountancy	1-2
2	Self Revolution	Mohanapriya.P	Arts	3-4
3	Wound healing activity of Cestrum elegans	V. Subhaa, Dr. D. Sukumarb, Dr. V. Elangoc	Chemistry	5-6
4	Anti Bacterial Activity of Apigenin 7-0-(6"caffeoyl) neohesperidoside from chrysanthemum indicum	M.Jerome Rozario, Dr.A.John Merina, Dr.V.Srinivasana	Chemistry	7-10
5	Adsorption Studies of Cu (II) and Cr (VI) from metal solution using crosslinked chitosan-g-acrylonitrile copolymer	Shankar.P, Gomathi T., Vijayalakshmi.K, Sudha P.N	Chemistry	11-13
6	An Insight into Derivative Markets: Indian Perspective	Dr. C.Shobha, Dr. T. Hanumantha raya	Commerce	14-16
7	Vision and Planning	Dr. J. K Sehgal	Commerce	17-18
8	An Analytical Study of Employee's Productivity in Some Selected Nationalized Banks of India	Dr. Jyotindra M. Jani, Manish B. Raval	Commerce	19-20
9	New Products of Tourism in India	Dr. M. K. Maru	Commerce	21-22
10	Inventory Management in Sugar Mills - A Comparative Study	Promila	Commerce	23-25
11	Price -Mix Straregy of Jammu and Kashmir Co-Operatives Supply and Marketing Federation Limited in Jammu District of J&K State	Tarsem Lal	Commerce	26-28
12	Warehouse Management Information System: A New Perspective in Supply Chain Management	Dr. Vipul Chalotra	Commerce	29-30
13	A Study on Consumer Satisfaction of Aavin Milk in Salem City	Dr.A.Vinayagamoorthy, Mrs. M.Sangeetha, C.Sankar	Commerce	31-33
14	Hybrid Attribute Selection Process for Decision Tree Based Classification Algorithms	Mr. A. Jebamalai Robinson, Mrs. S. C. Punitha, Dr. P. Ranjit Jeba Thangaiah	Computer Science	34-36
15	Visualizing the validation of UML diagrams	Lavleen Kambow	Computer Science	37-38
16	Effectiveness of coconut palm insurance scheme in the coastal belts of India-A SWOT analysis	Prof. (Dr.) D. Rajasenan, Bijith George Abraham	Economics	39-41
17	An Analysis of the Efficiency of Selected Public and Private Banks in India during 2005-2011	Dr.Dinesh Kumar, Sanjeev	Economics	42-44
18	Measurement of Emotional Development of the Students	Dr. Nivedita K. Deshmukh	Education	45-46
19	A comparative study of effect of method of lecture and dramatization of Marathi teaching	Dr. Nivedita K. Deshmukh	Education	47-48
20	Peer pressure-problems and solutions	V.Vaithyanathan, Dr.P.Sivakumar	Education	49-50
21	Language Anxiety In Indian L2 Learners: Male or Female Learners - Who Scores High?	S. Gandhimathi, Dr.R.Ganesan	Education	51-52

22	Topological Characteristics of ECG Signal using Lyapunov Exponent and RBF Network	Abinash Dahal, Deepashree Devaraj, Dr. N. Pradhan	Engineering	53-55
23	Development of slicing package of solid model for cone and sphere in rapid prototyping	Dineshkumar M. Patel, Prof. P.D.Solanki	Engineering	56-58
24	Hardware modeling Simulation with COSSAP	Krunali Amrutlal Ratanpara, Devendra Soni, Shrenik Rajesh Golwelkar	Engineering	59-61
25	Coordination Of Pss And Statcom To Enhance The Power System Transient Stability	Lalit K. Patel, Kaushik M. Sangada, Sunil S. Changlani , Ankit M. Patel	Engineering	62-64
26	Cooling Performance Analysis of Heat Sink	Mr. Pritesh S. Patel, Prof. Dattatraya G. Subhedar, Prof. Kamlesh V. Chauhan	Engineering	65-57
27	Thermal Modeling and Analysis of Friction Stir Welding	Rankit Patel, Prof. Bindu Pillai	Engineering	68-70
28	Review on shrinkage defect – A case study	Mr. Ravi N. Kalotra, Mr. Gajanan Patange, Mr. J.K. Gohil	Engineering	71-75
29	Stream Function Formulation of Lid Driven Cavity	Mr. Zankhan C. Sonara, Prof. Dattatraya G. Subhedar, Mr. Kartik Patel	Engineering	76-78
30	Implementation of ABT (Availability Based Tariff) - its Treatment & Proceedings	Dilip m.Bhankhodiya, Dipak t. Vaghela	Engineering	79-82
31	Active Filters for Power Quality Improvement	Dipak t. Vaghela, Dilip m. Bhankhodiya	Engineering	83-87
32	Design and Analysis of Air Bearing using Orifice and Feed Hole Pocket	Nileshkumar T. Raval, Prof. M.Y.Patil	Engineering	88-90
33	Drip irrigation technique enhancing water and fertiliser use efficiency in cauliflower	Dr. S.S. Yadav, Dr. R.S. Meena	Engineering	91-92
34	Experimental and FEA Evaluation of Hybrid Joint Strength of Single Lap joint.	S. S. Kadam, P. A. Dixit	Engineering	93-96
35	CFD Analysis of Mixed Flow Submersible pump Impeller	Mitul G Patel, Subhedar Dattatraya, Bharat J Patel	Engineering	97-100
36	EVA: An Innovative Parameter for Shareholders' Wealth Measurement	Shri. Arvind A. Dhond	Finance	101-103
37	Profitability and consistency analysis of Textile Sector in India	Dr. K. S. Vataliya, Rajesh Jadav	Finance	104-107
38	Harmonious Relationship between Art and Music Critical vision (comparison)	Dr. Marwan Imran	Fine Arts	108-109
39	Land Use Pattern and Crop Combination Region in Satara District : A Geographical Study	Dr. Rathod S. B., Mane-Deshmukh R. S.	Geography	110-111
40	Garlic---Benefits and Uses	Dr. Sneh Harshinder Sharma	Geography	112-114
41	An Assessment of Thermal Comfort Zones in Terms of Tourists: A case study of Karveer Tehsil	Mr. Prashant Tanaji Patil, Miss. Mane madhuri maruti, Miss. Mugade Nisha Ramchandra	Geography	115-117

42	Hematological changes due to the impact of Lead nitrate on economically important estuarine fish <i>Mystus gulio</i>	Dr.S.Palani Kumar	Horticulture	118-119
43	Stress Management level in the employees of Manufacture Industries By considering key parameters with reference to Bhavnagar city	Dr. K. S. Vataliya, Adv. Ajay H. Thakkar	Human Resource	120-122
44	The Case of ABC Group-A Case on Performance Appraisal System	Shivani Sah	Human Resource Management	123-124
45	A Study On Performance Appraisal of Employees in Health Care Industry in a Private Multi-Speciality Organization	Dr. C. Swarnalatha, T.S. Prasanna	Human Resource Management	125-126
46	(Upnyas - Jansi ki Rani Laxmibai (vrundavanlal varma)	Dr. Sneh Harshinder Sharma	Literature	127-128
47	"Educational Technology for Professional Development of English Teachers: A Case Study of the College Teachers of English in Jammu Province"	Dr. Wajahat Hussain	Literature	129-130
48	The Reality of Sultana's Dream: A step towards success Rokeya Sakhawat Hossein	Riju Sharma, Ruchee Aggarwal	Literature	131-132
49	Road blocks of Match Industry in Andhra Pradesh: Certain Issues and Concerns	Anuradha Averineni	Management	133-134
50	Government's Assistance Towards the Development of Small Scale Industries in India with Special Reference to Krishnagiri District	B. Mohandhas, Dr. G. Prabakaran	Management	135-140
51	Effects of Role Stress on Employee Job Satisfaction and Turnover	Dr. T.G.Vijaya, R.Hemamalini	Management	141-144
52	"MNP – A major concern of Telecom Operators in Gujarat"	Mohsinali Momin, Dr. Deepak H. Tekwani	Management	145-147
53	A Study on Fiscal Support Provided by Vijaya Bank to Msme in Coimbatore City	Mrs. G. Murali Manokari, Mr. G. Lenin Kumar, Mrs. G. Sathiya	Management	148-150
54	Competencies for HR Professionals	GAYATHRI. M	Management	151-153
55	Cost and Strategic Management - Application, Framework and Strategies for the Growth of Sme Sector	Manisha gaur	Management	154-156
56	Development of Management Education System in India	Mr. Goudappa Malipatil	Management	157-158
57	Study on Volatility and Return of Major Indices of Indian Stock Market with Reference to Sensex And Nifty	Mr. Mukesh C .Ajmera	Management	159-160
58	A Need for an Epitome Shift in Management Education A study on Conceptual Teaching practices	Mrs. Vanishree K. Jamashetti, Mr. Sanjeev Rathod	Management	161-162
59	Personal Social Responsibility – A novel thought	Parul Jain, Dr. N.C Pahariya	Management	163-164
60	Green Marketing – A Consumer's Perspective in the Indian Scenario	Nidhi Srivastava, Preeti Pillai	Management	165-166
61	Challenges and Opportunities of Mobile Banking - An Indian Scenario	Sandhya.Ch.V.L	Management	167-169
62	A pragmatic study of civilizing amortment among The diverse countries	Mr. Vimal P. Jagad, Mr Mukesh .C Ajmera	Management	170-171
63	Celebrity Endorsement in India An Effective Tool of Sales Promotion	Piyush Shah, Dr. N C Pahariya	Management	172-176

64	A Study of Prominent Character Strengths and Their Relationship with Well Being Among Business Management Students	GarimaKamboj, DikshaKakkar	Management	177-180
65	Coffee Consumption in India: An Exploratory Study	Shri. Arvind A. Dhond	Marketing	181-183
66	Applicability of Retail Service Quality Scale (RSQS) in India	M. Ramakrishnan, Dr. Sudharani Ravindran	Marketing	184-186
67	Account Holders perceptions towards Self Service Technologies: a study of selected Private Sector Banks	Dr A Kumar, Prof Ankur Gangal	Marketing	187-189
68	Impact of Sales Promotion on Sales figures of Select International FMCG Brands	Dr.Sharif Memon	Marketing	190-193
69	Factors Affecting Green Product Design: Marketing Professional's Perspective	D. S. Rohini Samarasinghe	Marketing	194-196
70	The Impact of 'Ambience' and Variety on Consumer Delight: A Study on Consumer Behaviour in Ahmedabad	Dr A Kumar, Prof Vineeta Gangal	Marketing	197-200
71	Co-Relation of Social Justice with Human Rights: A Review	Dr. Monica Narang	Marketing	201-202
72	Study of Iron Status and Free Radical Activity in Plasmodium Falciparum and Plasmodium Vivax Malaria Infection	Sangita M. Patil, Ramchandra K. Padalkar	Medical Sciences	203-205
73	GOAL SETTING TENDENCIES, COMMUNICATION SKILLS AND WORK MOTIVATION VIS-À-VIS AGE DIFFERENCE – A STUDY ON PUBLIC SECTOR ORGANIZATION	Dr. Swaha Bhattacharya, Dr. Monimala Mukherjee	Psychology	206-208
74	Role of NGOs in Social Mobilization in the context of SGSY	Dr.Veershetty C. Tadalapur	Sociology	209-211
75	Age at menarche and its secular trend in rural and urban girls of bathinda district	Jyoti Sharma, Dr. Ajita	Sports Science	212-213
76	Effect Of Resin Finishing On Stiffness And Drape Of Khadi Fabric	Dr. Suman pant, Ms. Noopur Sonee	Textiles	214-216



Wound healing activity of *Cestrum elegans*

* V. Subhaa ** Dr. D. Sukumarb *** Dr. V. Elangoc

* PG and Research Department of Chemistry, Government Arts College, Kumbakonam, Tamil Nadu

** Department of Chemistry, Bharathiyar College of Engineering and Technology, Karaikal, U. T. of Pondicherry

*** Deptatment of Siddha Medicine, Faculty of Sciences, Tamil University, Thanjavur, Tamil Nadu

ABSTRACT

The air-dried leaves of *Cestrum elegans* (Brongn.) Schltld of Solanaceae have been found to contain luteolin and its glycoside luteolin-7-O-rutinoside. The structures of the above compounds have been ascertained by UV, chemical reactions, PC and hydrolytic studies. The glycoside isolated from the leaves has ample healing property. It was also tested for its membrane stabilizing capacity.

Keywords : *Cestrum elegans* (Brongn.) Schltld, Solanaceae, luteollin-7-O- Rutinoside, Sheep Red Blood Cell Membrane stabilization

1. Introduction:

Cestrum elegans (Brongn.) Schltld (syn *C. panniculatum* Schltld, *C. elegans* var. *truncata* Fernald, *C. elegans* var. *tatula* Dunal) of Solanaceae is an ornamental shrub. The shrubs are more compact and are widely distributed in the US West Coast. All parts of the plant are poisonous if ingested^{2,3}. The flowers are found to contain steroidal saponins⁴.

2. Experimental :

2.1 Extraction and fractionation:

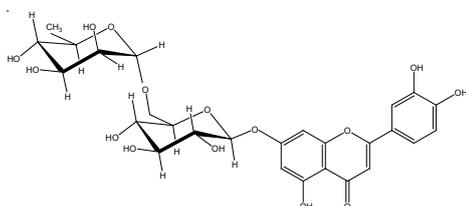
The leaves (1 kg) of *C. elegans* were collected from the Kodaikanal hills during November. The plant specimen was verified with the Rapinat Herbarium, St. Joseph College (Autonomous), Tiruchirappalli. The air-dried leaves were extracted with 85% EtOH (4 X 500 ml) under reflux. The alc. extract was concentrated in-vacuo and the aq. concentrate successively fractionated with benzene (3 X 250 ml) peroxide-free Et₂O (3 X 250 ml) and EtOAc (4 X 250 ml).

Benzene fraction did not yield any isolable material. Et₂O fraction yielded luteolin and EtOAc fraction, luteolin-7-O-rutinoside (I).

2.2 Characterization:

Luteolin : Yellow needles, m.p. 330-31 °C. UV: nm 240 sh, 253, 268, 348; + (NaOMe) 265 sh, 329 sh, 403; + (AlCl₃) 274, 298 sh, 328, 425; + (AlCl₃/HCl) 265 sh, 275, 294 sh, 356, 384; + (NaOAc) 269, 326 sh, 384; + (NaOAc/H₃BO₃) 259, 301 sh, 370, 430 sh.

Luteolin-7-O-rutinoside: Yellow solid m.p. 175-78 °C. UV: nm 257, 269 sh, 351; + (NaOMe) 281, 297 sh, 407; + (AlCl₃) 274, 298 sh, 327 sh, 421; + (AlCl₃/HCl) 274, 294 sh, 356, 384; + (NaOAc) 257, 321 sh, 372, 404; + (NaOAc/H₃BO₃) 259, 372.



I Luteolin-7-O-rutinoside

3. Wound healing investigations:

Rabbits were chosen for the healing property examinations of the isolated glycoside. It showed 99.16% of healing compared with the standard nitrofuracin ointment - a reference which has only 93.03% on the sixteenth day. Thus, this in-vivo test exhibited 6% greater - capacity than that of the standard drug (Figures 1a - 1e and 2, Table I).

4. SRBC membrane stabilization:

Luteolin-7-O-rutinoside isolated from EtOAc fraction was tested for its SRBC membrane stabilization⁵ in vitro studies. It showed maximum capacity at 10 µg of the drug, while a plot drawn with concentrations in abscissae and transmittance in ordinates, read at 560 nm in a photoelectric colorimeter. As the concentration increases, only hypotonicity-induced hemolysis was observed (Table II).

WOUND HEALING ACTIVITY OF LUTEOLIN-7-O-RUTINOSIDE



1a. FIRST DAY



1b. FOURTH DAY



1c. EIGHTH DAY



1d. TWELFTH DAY



1e. SIXTEENTH DAY

Table I
WOUND HEALING ACTIVITY OF LUTEOLIN-7-O-RUTINOSIDE

S. No	Weight of the animal in kg	Treatment	Wound area in sq. cm with % of wound healing in brackets				
			0	4	8	12	16
1	1.5	Control	5.65	3.46 (38.76)	2.83 (50.00)	2.12 (62.48)	1.98 (65.00)
2	1.4	White Paraffin	5.27	3.20 (42.69)	1.67 (44.70)	1.38 (70.00)	1.32 (75.00)
3	1.6	Nitro-furacin	5.02	3.2 (46.25)	2.26 (54.98)	0.67 (86.65)	0.35 (93.03)
4	1.5	Luteolin-7-O-rutinoside	8.35	5.05 (39.52)	4.55 (45.50)	0.85 (89.82)	0.07 (99.16)

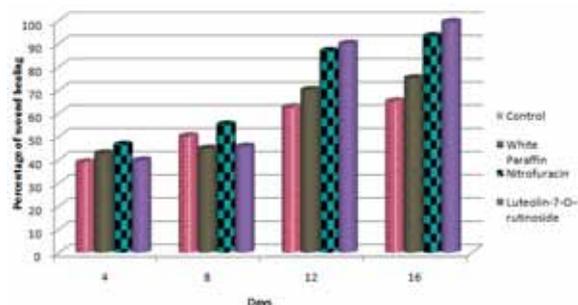


Fig. 2 Percentage wound healing activity in different days

Table II
SRBC MEMBRANE STABILIZATION OF CESTRUM EL-EGANS

S.No	Conc. of drug (µg)	Transmittance (%)
1	10	22
2	25	20
3	50	20
4	75	19
5	100	17
6	200	17

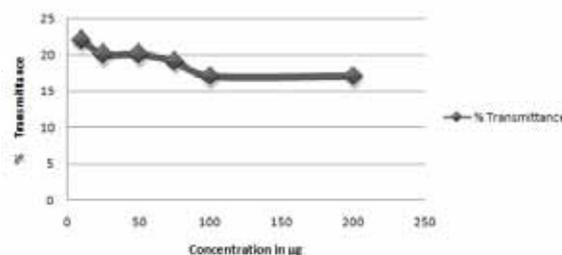


Fig 3. Effect of luteolin-7-O-rutinoside on hypotonicity induced haemolysis

5. Conclusions:

The air-dried leaves of *C. elegans* were found to contain luteolin and its glycoside luteolin-7-O-rutinoside. The structures of the compounds have been ascertained by chemical reactions, chromatographic and spectroscopic techniques. Partial hydrolysis of the glycoside with HCOOH_{6,7} afforded glucoluteolin (luteolin-7-O-glucoside) and rhamnose thereby showing that the glucose moiety is directly linked to the aglycone. The glycoside was tested for its wound healing property and SRBC membrane stabilization capacity. The wound healing of the drug was so effective while it was compared with that of the standard drug. The in-vitro study, the SRBC membrane stabilization, showed haemolytic property.

Acknowledgements :

The authors thank The Rapinat Herbarium, St. Joseph College, Tiruchirapalli, for the help to identify the species. The financial assistance rendered by Jawaharlal Nehru Memorial Fund, New Delhi, is also acknowledged.

REFERENCES

1. <http://www.mobot.org> | 2. http://www.californiagardens.com/plant_pages/cestrum_elegans_smithi | 3. <http://www.davesgarden.com/pdp/b/solanaceae/cestrum/elegans> | 4. <http://www.nlm.nih.gov/mesh/2003/Mbrowser.html> | 5. R. Arivudainambi, D. Sukumar, V. Sethuraman, N. Sulochana, J. Sadique, An in vitro study of the anti-inflammatory activity of some flavonoids by HRBC membrane stabilization, Satellite Symposium on Traditional Medicine as Adjunct to Asian Congress of Pharmacology, 1985, Tamil University, Thanjavur, Tamilnadu, India, 1986, 139. | 6. T. A. Geissman, The Chemistry of Flavonoid Compounds, Pergamon Press, London, 1962, 99. | 7. D. W. Fox, W. L. Sakvage and S. H. Wender, J. Amer. Chem. Soc., 1953, 75, 2504.



Sara Publishing Academy
Indian Journal Of Applied Research
Journal for All Subjects



Editor,
Indian Journal Of Applied Research
8-A, Banans, Opp. SLU Girls College,
New Congres Bhavan, Paldi, Ahmedabad-380006.
Contact.: +91-9824097643 E-mail : editor@ijar.in