



11th Edition

Pharma Equinox 2019



Nutraceuticals

PHARMACIST'S OATH

I swear by the code of ethics of Pharmacy Council of India, in relation to the community and shall act as an integral part of health care team.

I shall uphold the laws and standards governing my profession.

I shall strive to perfect and enlarge my knowledge to contribute to the advancement of pharmacy and public health.

I shall follow the system which I consider best for Pharmaceutical care and counseling of patients.

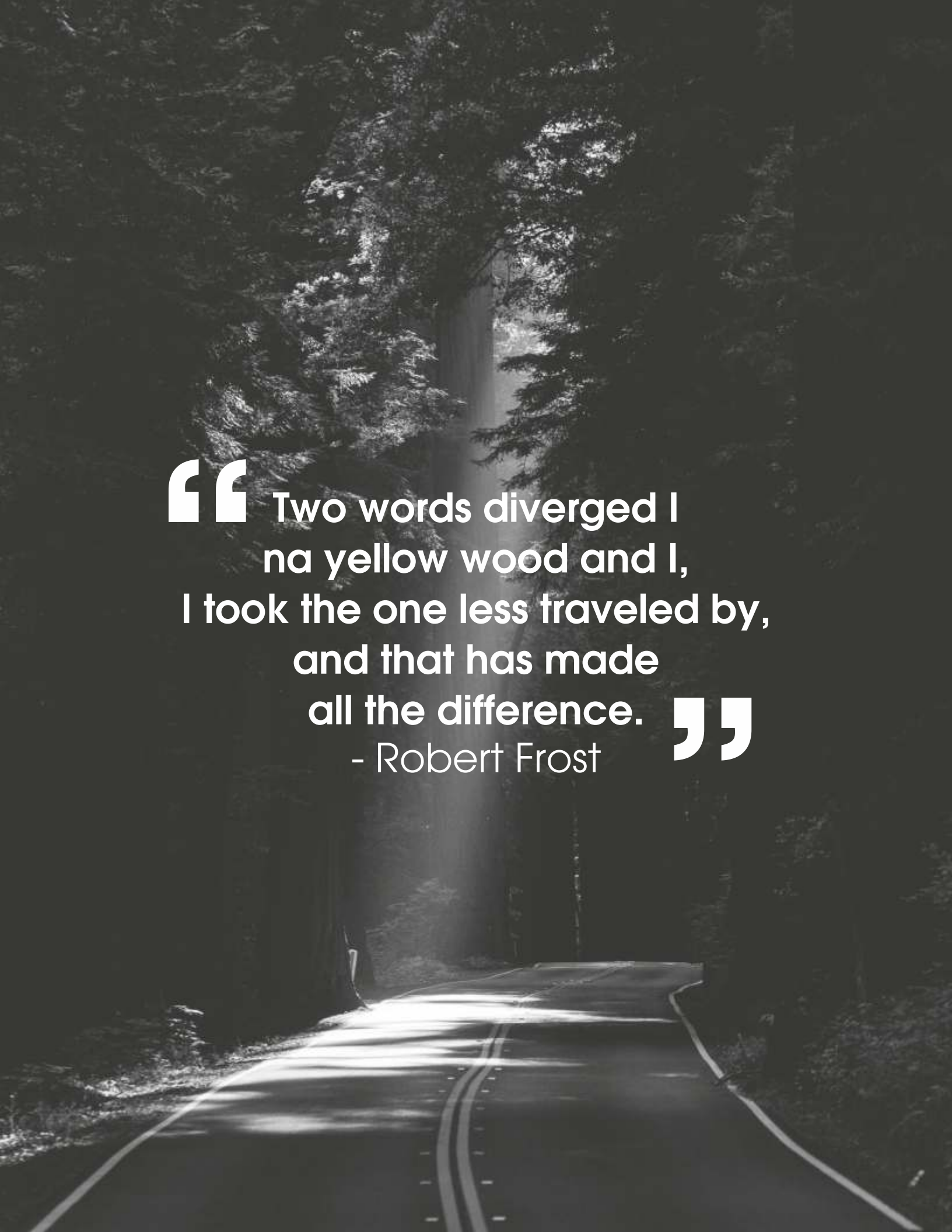
I shall endeavor to discover and manufacture drugs of quality to alleviate sufferings of humanity.

I shall hold in confidence the knowledge gained about patients in connection with my professional practice and never divulge unless compelled to do so by law.

I shall associate with organizations having their objectives for betterment of the profession of Pharmacy and make contributions to carry out the work of those organizations.

While I continue to keep this oath unviolated, may it be granted to me to enjoy life and the practice of pharmacy respected by all, at all times!

Should I trespass and violate this oath, may the reverse be my lot!



“ Two words diverged I
na yellow wood and I,
I took the one less traveled by,
and that has made
all the difference. ”
- Robert Frost

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ADMINISTRATIVE BOARD

Shri B. L. Boolani - Founder Trustee & Trustee-In-Charge

Shri Mahesh Tejwani - President	Shri Suresh Bharwani - Member
Shri Dinesh Tahiliani - Secretary	Shri Suresh Malkani - Member
Shri Amar Asrani - Treasurer	Shri Laxman Kanal - Member
Shri Bansi H. Wadhwa - Member	Dr. Shri Prakash Lulla - Member
Shrimati P. U. Vaswani - Member	Shri Vishu Lalla - Member

WORDS FROM THE WISE..



Dear students,

It has been a matter of pride as our college launches the 11th edition of the Pharmaequinox. The VES College of Pharmacy after 11 years of its glorious establishment steadily endeavors towards its goal of providing holistic process of teaching and learning. Our endeavor to inculcate the ability to learn; apply the knowledge acquired; improvise, innovate and create remains our mission in progress. For effective transformation of teaching into learning, newer and technology enabled teaching methods are encouraged and advocated.

The academic year 2018-19 has been a dynamic year with our institute being awarded

the 'Best Industry Linked Technical Institute'. Our institution has strived towards bridging the gaps by creating an interface for academic institution and the industry to work in unison and harmony with one another; research and innovation being the outcome of this interface. The induction of the Institution's Innovation Council (IIC) has marked the beginning of our journey to train young minds to innovate, create and nurture them to become an entrepreneur. With completion of 10 years of establishment, our faculty members can now invest more time and efforts in research and development. For breakthrough outcomes, multidisciplinary research is necessary with optimum blend of science and technology. I sincerely feel that our pharmacy, science and engineering institutes can come together and work complementary to each other to bring reforms in the healthcare and information technology sector. VES looks forward to some innovative outcomes protected with Patent and made available to the industry for commercialization.

Last but not the least; along with the busy lives that we lead; it is vital for every young mind to remember that they need to take best care of their health; a balanced diet; regular exercise along with good sleep helps attain good health. Daily practice of Yoga will surely help in strengthening mind and body and VESCOP will provide all support to practice yoga in its premises.

My message to all young minds remains believe, create and innovate for a bright future. Wish you all the very best for all your future endeavors.

Shri B. L. Boolani
Trustee-in-charge
VES College of pharmacy



FROM THE PRINCIPAL'S DESK

Dear students! It has always been a pleasure to express my thoughts through our manuscript, PharmaEquinox.

In the span of 11 years, our college has achieved important milestones such as launching M. Pharm and Ph. D programs, developing active industry-institute partnerships, creating infrastructure for advance research and conducting programs for holistic development of students.

Our efforts have paid off in the form of some national level recognitions such as 'Best Industry linked institute' award in the category of established pharmacy degree colleges of the country as per AICTE -CII survey 2018, NBA accreditation of B. Pharm program and Scientific and Industrial Research Organisation (SIRO) status of DSIR.

VESCOP has always nurtured a dream of creating a research culture and I am happy to share that we have some remarkable achievements this year. We received a grant from Science and Engineering Research Board,

Department of Science and Technology in collaboration with ACTREC, TATA memorial Center and Gold medal at state level inter-university research convention, "Avishkar 2018".

We have worked towards all-round development of our students to create competent pharmacy professionals who could make a difference to the society. To enhance technical knowledge and skills, we have conducted some add on courses/workshops in regulatory affairs, instrument handling, medical devices, patent filing etc. To groom our students for corporate life, we are imparting training in soft skills and communication skills. Also, we continue inviting experts in various fields for giving exposure to various avenues after graduation.

Our college has recently inaugurated the Institute's Innovation Council (IIC), the primary aim of which is to acquaint our students with the importance of innovation. Our founder Shri B. L. Boolaniji has been a front runner in promoting this idea and has played an important role in inspiring our students. We are appealing our students and alumni to think differently and engage in entrepreneurial endeavors. VESCOP has created an ecosystem to support you in converting your idea into commercially viable business.

I acknowledge sincere efforts by our staff and students and immense support by our management in the growth of our institute. We hope to keep working actively towards the cause of better health care of society.

I hope that all our students work towards becoming successful professionals with ethical core. Wishing each of you all the best in your future endeavours.

Thank you.



Wishing all the members of VESCOP a very happy and prosperous new year. It is my pleasure to be a part of this esteemed institution. I have seen this institution grow from something miniscule to an invincible giant, all on its own. VES College of Pharmacy is an institution that is

blessed with the mightiest teachers and cooperative students and together they have been working towards boosting the future of medicines in the country and helping it reach the pedestal, it rightfully belongs to. I feel very blessed to be associated with an organization like this. This past year was full of growth and prosperity and I wish many more years of success to this institution.

-Prof. Jharana Das
Chief coordinator

THE MAGAZINE IN-CHARGE SPEAK

Dear Reader, It gives me immense pleasure to present to you the 11th Edition of our college Magazine "Pharma Equinox 2019". Empowerment of students for their all-round development through education is our cherished motto. Today education means much more than merely acquiring knowledge. It is an acquisition of knowledge and skills, building character and improving employability of our young talent. The aim of the Magazine is to motivate the young minds of VESCOPIANS and



showcase their talent. Pharma Equinox is a perfect reflection of talent and potential of our students and staff. The theme of our current edition is Nutraceuticals and this edition emphasizes the current developments in the field of Nutraceuticals. The basis of Nutraceuticals is to prevent the disease

rather than to cure, I hope readers will find the magazine very informative. I sincerely appreciate and applaud the commendable work put in by the entire editorial team and all those who have contributed in bringing together this edition of Pharma Equinox which beautifully showcases yet another incredible year with an array of events and happenings at VES College of Pharmacy. This issue has wonderfully illustrated the recent achievements in both academic and extracurricular spheres, highlighting the tremendous progress. At VESCOP we endeavor to instill creativity, critical thinking, communication, social responsibility, ethics, skills and research inclination amongst our students through our dynamic approach to education. I appreciate our Magazine team for their consistent efforts. I am also grateful to all our stakeholders – Sponsors, Industries, Alumni, Parents, the willing contribution of the teaching staff and of course the over whelming response and enthusiastic participation of our dear students. Also special thanks to our Principal and Management for their commitment and support for providing quality education. Come on! Let's give our best and make this institution a modern temple of learning through our diligence, devotion and dedication. Wishing you all the best!

Mrs. Vidhi Bhatia

MESSAGE FROM THE MAGAZINE COMMITTEE

We, the Magazine Committee of 2018-19 are extremely proud and delighted to release the 11th edition of our annual magazine, Pharma Equinox. The theme for this year's magazine is Nutraceuticals, an upcoming field which will revolutionize the Pharma industry.

This edition is the synergised effort of its team; Magazine Secretary (Sayli Kharkar), Assistant Magazine Secretaries (Priyanka Ghosh and Santhanalexmi Kumaresan), and Editors(Scientific: Ashish Jhangiani, Haabil Hirkani, Perna Dodeja; English: Priyanka Baburaj, Natasha Coutinho, Kajal Gore; Hindi: Ashish Chawla; Marathi: Siddhita Gawade). We express our gratitude towards our Principal, Dr. Supriya Shidhaye and our Magazine-in-charge, Mrs. Vidhi Bhatia, for their constant support and constructive feedback to make this edition more educative and riveting.

We have tried our best to ensure that this magazine entails the creative and scientific geniuses of our college and hope that it is an interesting and inspirational read for everyone.





F.Y. B. Pharm(A)



F.Y.B. Pharm (B)



S.Y.B. Pharm



T.Y. B. Pharm



L.Y. B. Pharm



M. Pharm (PHARMACEUTICS)



M. Pharm (QUALITY ASSURANCE)



M. Pharm (PHARMACEUTICAL CHEMISTRY)



Teaching Faculty



Non Teaching Faculty



Non Teaching Faculty



Students' Council



IPA



PHO



Rotaract Club



Institution's Innovation Cell



Alumni Cell



Placement Cell



ANNUAL PROGRESS REPORT



ANNUAL PROGRESS REPORT

Academic Year 2018-19
ARRANGEMENT OF TERMS

I. ADMISSION STATUS

The total numbers of students admitted in each class were as follows:

CLASS	STUDENT STRENGTH
F. Y. B. Pharm.	90
S. Y. B. Pharm.	68
T. Y. B. Pharm.	65
Final Y. B. Pharm.	68
F. Y. M. Pharm.	29
S. Y. M. Pharm.	31

II. FACULTY STRENGTH

- No. of faculty members: 25
- No. of faculty members with PhD: 12
- No. of faculty members perusing PhD: 06

III. VISITING FACULTY

For the following subjects, visiting faculties have been appointed during the A. Y. 2018-19.

	Names of Visiting Faculty
First Term (02)	Mrs. Gayatri Aggarwal (Pharmacology)
	Mrs. Ramalakshmi Anand (Pharmaceutical Jurisprudence)
Second Term (02)	Mr Rajesh Kayakkal [Mathematics & Statistics, Biostatistics]
	Mr Ashwin Rane [Pharmaceutical Management]

IV. UNIVERSITY RESULTS (2017-2018)

This year, for the B. Pharm classes(After revaluation), 96.55% students passed in First year, 75.81% passed in Second year, 89.23% passed in Third year and 86.11% passed in the Final year. For M. Pharm classes(Before revaluation), 66.67% passed in Pharmaceutics, 45.45% passed in Quality Assurance and 0% passed in Pharmaceutical Chemistry.

V.

TOPPERS (TOP 3 STUDENTS FOR THE AY 2017-18)

B. PHARM

RANK	FIRST YEAR	SECOND YEAR	THIRD YEAR	FINAL YEAR
1 st	MEHTA PARTH PARAG 8.86	NATASHA COUTINHO 9.55	DODEJA PRERNA VIJAY 8.41	IYER SIDDESH & KULKARNI NAMRATA 8.45
2 nd	SHIRKE CHAITANYA NARENDRA 8.62	SNEHA SUTHAR 9.16	NAIR SANJANA SURESH 8.08	SHAH BHAVYA 8.37
3 rd	SANTHANALAXMI KUMARESAN 8.6	KADAM MANALI DEEPAK 8.98	ANUSHKA RAJESH 8.07	DATE VARADA 8.33

M. PHARM

	PHARMACEUTICS	QUALITY ASSURANCE
1 st	SHIVALI TANK 8.1	MODAK MAYUR KISHOR 7.5
2 nd	DHAGE PRANITA & SALUNKHE AKSHADA 6.4	PATIL SNEHAL VILAS 7.2
3 rd	LAKHANI MONIKA & TELVEKAR NEERAJ 6.3	DHAMALE TANMAYEE VILAS 6.8



SCHOLAR SHIPS

VESCOP students have received following scholarships in the academic year 2018-19

SR. NO.	SCHOLARSHIP GIVEN BY:	NO. OF STUDENTS		TOTAL AMOUNT RECEIVED:
		UG	PG	
1	Ratan Tata Trust			In process
2	SumanTulsiani Trust	12	0	180000.00

VESCOP students have received following scholarships in the academic year 2017-18

SR. NO.	SCHOLARSHIP GIVEN BY	NO. OF STUDENTS		TOTAL AMOUNT RECEIVED
		UG	PG	
1	Ratan Tata Trust	22	17	2373000.00
2	SumanTulsiani Trust	11	7	180000.00
3	NischallIsrani Foundation	10	2	180000.00
4	VESCOP Scholarship	8	10	200000.00
5	VES Trust	1		10000.00
6	AICTE		16	12400/- MONTHLY

VI. AFFILIATION AND APPROVALS:

Course	Name of the Body	Approval up to	Remarks
B. Pharm.	Pharmacy Council of India (PCI)	2021-22	To be displayed on PCI Website in the Minutes of 02.291st Executive Committee Meeting held on 25 th April, 2018.
B. Pharm. M. Pharm. (Pharmaceutics) M. Pharm. (QA) M. Pharm. (Pharm. Chem.)	All India Council of Technical Education (AICTE)	2018-19	F.No. Western/1-3516276242/2018/EOA dated 10.04.2018
B. Pharm.	University of Mumbai	2018-19	No.Aff./ICD/2018-19/625, dated 16.06.2017
M. Phar (P'ceutics) M. Pharm. (QA) M. Pharm. (Pharm. Chem.)		2018-19	No. Th./ICD/2018-19/926 dated 14.06.2018
Ph. D. (Pharmaceutics)	University of Mumbai	2019-20	No. Th./ICD/2018-19/3283 dated 20.10.2018.
Ph.D. (Pharmaceutical Chemistry)	University of Mumbai	2018-19	No.Th./ICD/2018-19/3465 dated 01.11.2018.

VII.

VIII. ANNUAL LECTURE SERIES

VES College of Pharmacy has taken up a new initiative and started **Annual Lecture Series in Pharmaceutical Technology** 2017.

2nd ANNUAL LECTURE SERIES

Date: 18-8-18,

Speaker: Dr Padma Devarajan, Professor.

Pharmaceutical Sciences, ICT Mumbai,

Topic and Theme: **Innovation in Pharmaceutical Industry:**

Spanning the gap in Research and Commercialization of Product.





CHEMTASTIC 2018 VES College of Pharmacy,Chembur, Mumbai had organized a unique event known as 3rd CHEMTASTIC 2018 which included Chemistry based fun filled events, on 28th July 2018.

CAMPUS TO CORPORATE TRANSITION PROGRAMME

C2C Transition program is conducted in the following avenues.

- VidyanManch** – Industry- Academia/Student interaction.
- Disha** – Career Avenues after B. Pharm.
- Talkathon**– Student Alumni interaction
- Atmavikas** – Soft Skill Development

Following sessions were conducted in A.Y 2018-19

VIDNYAN MANCH			
Sr.No	Date	Resource person and designation	Topic
1.	1/8/18 (24)	Dr. Anthony Crasto, Principal Scientist, Glenmark	Use of internet for literature search
2.	18/8/18 (47)	Dr Padma Devarajan Professor, Pharmaceutical Sciences and Technology, Institute of Chemical Technology	Innovation in Pharmaceutical Industry: Spanning the gap in Research and Commercialization of Product
3.	7/7/18	Dr. Abhijeet Date, Assistant Professor, University of Hawai	Engineering Nanosuspensions to improve local delivery of hydrophobic and ionizable hydrophilic drugs
4.	22/9/18 (31)	Anil Yadav, Manager QA, Enovate biolife and Vedic life sciences	Regulatory affairs and general overview of Nutraceuticals
5.	22/11/18 (16)	Dr. Morse Faria, Research Scientist at PPD	Antibody Drug Conjugates
DISHA			
Sr.No	Date	Resource person and designation	Topic
1.	10/7/18 (12)	Mr. Sonam Kumar and Mr. Dhawal Jaiswal, IPS	UPSC Exam
2.	11/8/18 (88)	Ulhas Karkhanis, Parag Mahulkar, Associate dean, IES Management College	Career Guidance
3.	1/9/2018 (44)	Ms Urvi Jani, Officer: Regulatory affairs pharma, Unichem Lab Ltd	Career opportunities in Regulatory Affairs
4	1/9/2018 (48)	Mr Chinmay Achrekar, Product Manager, Hetero Healthcare	Career guidance and opportunities in MBA and Pharma related field
5	1/12/2018 (22 students +10 faculties)	Ms Pallavi Kharar, Patent Attorney, IPRAM	Intellectual Property Rights wrt academic entrepreneurs and innovators
ATMAVIKAS			
Sr.No	Date	Resource person and designation	Topic
1.	14/8/18 (67)	Preeti Vasudevan, VESLARC	Time management
2.	27/9/18 (1)	Mrs Niyatii Shah, Sexuality Educator	Sex Education (WDC activity)
3.	8/9/2018 (57)	Team Lakshya	One thought can change your life
4.	4/9/18 (12)	Meeta Brahmabhatt, Preeti Vasudevan : VESLARC counsellor	Healthy Relationships
5.	27/10/18 (80)	Union Bank	Corruption and Vigilance Awareness Program

IX. PUBLICATIONS

Sr.No.	Name of Faculty	Publication Details With Co-Authors, Article Name, Journal Name, Year, Volume, Issue Number, Page No. , ISSN Number, Impact Factor/H. Index Details
1	Dr Ganga Srinivasan	Kaizen and Lean Implementation in Pharmaceutical Industries: A Review Asian Journal of Pharmaceutical and Clinical Research, Vol 11, Issue 7 July 2018 pp 57-63, Peer Reviewed, Impact Factor: 0.49
2	Dr.Rajashree Hirlekar	Preparation and Characterization of Oral Nanosuspension Loaded with Curcumin, Sneha Dekate ¹ , Srinivas Bhairy ² , Rajashree Hirlekar*, International Journal of Pharmacy and Pharmaceutical Sciences, 2018, Vol 10, Issue 6, 90-95,ISSN- 0975-1491, Impact factor: 0.512, H index: 33 Excipients quality norms and imports Ingredients South Asia, October1-15, 2018, Vol. 12, issue 1, pg 90-92.
3	Dr Rakesh Somani	Design, synthesis and anti-TB activity of novel 2,5-diaryl-1,3,4-oxadiazole derivatives".Ind J Pharm Sci Res., 2018, 8 (1), 19-28
4	Mrs Harsha Kathpalia	Topical Nanoemulgel Formulation of Boswellia serrata,Indian J Pharm Sc, 80,(2): 261-67, 2018, H index: 43



5	Dr.Doshi Gaurav	Phytochemical Investigation of Essential Oils from Petroleum Ether Extract of Annona Squamosa Seeds By Gas Chromatography-Mass Spectroscopy, International Journal of Pharmacognosy and Phytochemical Research, 2018, 10 (5), 235-239. [ISSN: Print -0975-4873, H index: 10, SJR: 0.12, IF: 1.873]
		Gas Chromatography-Mass Spectroscopy studies on ethanolic extract of dried leaves of Catharanthus Roseus, Asian journal of Pharmaceutical and Clinical Research, 2018, 11 (6) 336-340. [ISSN: 0974-2441 (Print), 2455-3891 (Online), H index: 23, SJR: 0.22, IF:0.5]
6	Mr K V Shastri	NDDS: Carving a Niche in Treatment and Management of Diabetes Pharma Vision : Research and Reviews, Issue 1, Vol. 1, 2018
7	Dr Sandip Zine	The Rise of Super Bugs Journal of Chemical & Pharmaceutical Research, 2018, 10 (3),97-103.
		Rise of Antibiotic Resistance in Tuberculosis, Research Journal of Pharmacy and Technology, 11 (7), 2018
8	Mr. Pratip Chaskar Dr. Rakesh Somani	A Brief Review on Therapeutic Implication of Purines Pharma Vision : Research and Reviews, 2018, Vol. 1, Pg. 1-8
9	Dr Anita Ahire Mr. Ojaskumar Agrawal Ms. Shweta Jagdale	Dried Matrix Spotting - An innovative sample preparation tool in bioanalysis International Journal of Pharmaceutical Sciences and Research 2018, 9(9); 3597-3607, H-index: 3, SJR: 0.137, Impact Factor: 1.83
10	Dr. Sandip Zine Ms Shweta Patankar Ms Sushmita Raopati	Rise of Antibiotic Resistance in Tuberculosis Research Journal of Pharmacy and Technology, 11 (7), 2018
11	Mrs Ashwini Wani	Formulation, characterization and invitro evaluation of Novel microemulsion based spray for topical delivery of isotretinoin Asian Journal of Pharmaceutical and clinical research, 2018, 11(10), H-index 23
12	Mr. Pratip Chaskar	<i>Use of Factorial Design in Optimization of Microwave Assisted Organic Synthesis Of Some Azoles, Indian Drugs (SJR 0.133, H index 28), 2018</i> , Vol. 55, Issue 10, 11-15. ISSN: 24-33 (Print), 0019-462X (Online).
		A Brief Review on Therapeutic Implication of Purines, Pharma Vision : Research and Reviews, 2018, Vol. 1, Pg. 1-8.
		<i>Gas Chromatography-Mass Spectroscopy Studies on Ethanolic Extract of Dried Leaves of Catharanthus roseus; Asian Journal of Pharmaceutical and Clinical Research (SJR 0.326, H index 16), 2018</i> , Vol. 11, Issue 6, 336-340. ISSN: 0974-2441 (Print), 2455-3891 (Online)

X. PRESENTATIONS:

Sr. No	Name of the Presenting author	Title of the Presentation	Co-Authors/ Guide	Date	Details and Venue
1	Dr. Supriya Shidhaye	Delivered a lecture on Parenterals	-	07.09.2018	Konkan Gyanpeeth Rahul Dharkar College of Pharmacy and Research Institute, Karjat in association with KG Sanjeevani – Continued Learning and Quality Improvement Programme
2	Dr Supriya Shidhaye	Delivered a lecture as a Resource Person in National level seminar "Social Entrepreneurship: A Tool for Women Empowerment	-	12th & 13th October, 2018.	VES Institute of Management.



3	Dr Supriya Shidhaye	Delivered a lecture as a Resource Person in MSBTE approved and sponsored one-week Faculty Development Training Program (FDTP) on "Recent Advances and Current Trends in Pharmacy Education and Profession	-	5th December, 2018.	Nagrik Shikshan Sanstha's College of Pharmacy, Tardeo.
4	Dr Ganga Srinivasan	Viral Hepatitis Elimination: Bridging the clinician-scientist gap	-	29 th July 2018	National Conference on Upcoming Avenues for Viral Hepatitis Elimination in India" held at Durbar Hall, Haffkine Institute
5	Dr Ganga Srinivasan	Implantable Drug Delivery System For Spinal TB	-	9th Aug 2018	NSRT, Kandla, Kachchh, Gujarat.
6	Dr Ganga Srinivasan	Formulation R & D for drugs used in menopause	-	25th September 2018	Symposium on Menopause A path to bone and Muscle health Organised by KHS-MRC, MMS, MOGS and BNCP.
7	Ms Rutika Shetye, Ms Sanket Mohata	Gold Nanoparticles: Preparation and application	Dr. Rajashree Hirlekar	5 and 6 October	Nanopharmaceuticals: Maneuvering the path from processing to characterization and poster competition
8	Ms. Akshada Salunkhe, Ms Snehal Patil	Formulation and development of Curcumin Nanoformulation	Dr. Rajashree Hirlekar	5th and 6th October, 2018	Nanopharmaceuticals: Maneuvering the Path from Processing to Characterization at VES College of Pharmacy
9	Snehal Patil and Akshada Salunkhe	Formulation and development of curcumin Nanoformulation	Dr. Rajashree Hirleka	5 October 2018 and 6 October 2018	Seminar cum Workshop on Nanopharmaceuticals: Maneuvering The Path From Processing to Characterization at Vivekanand Education Society's College of Pharmacy, Chembur (E), Mumbai
10	Ms. Snehal Patil	Formulation, Characterization and Pharmacokinetic evaluation of Nanosuspension of herbal anti inflammatory drug	Dr. Rajashree Hirle	7-8/09/2018	Seminar on research in CNS disorders and workshop on development of Zebra Fish facility and handling of laboratory animals Dr. L. H. Hiranandani College of Pharmacy
11	Mr Ashish Jhangiani (T Y B Pharm)	Synthesis and molecular docking of biphenyl Schiff's bases against C. Albicans	Dr Somani	22/6/2018	BCCOC 2018, Khalsa College
12	Dr Somani	Career options in Pharmacy	-	07/07/2018	VES COP
13	Dr Somani	Case study of Shikimate Kinase Inhibitors and Molecular Modelling aspects	-	on 15th Oct 2018	KLECOP at a workshop as part of their silver jubilee celebrations.
14	Dr. Mushtaque Shaikh	Delivered a talk on use of EndNote reference management software	-	12/06/18 and 26/6/18	Effective use of Library Delivered a talk on use of EndNote reference management software
15	Prachi Khamkar under the guidance of Harsha Kathpalia	Anti fungal Film forming gel	Mrs. Harsha Kathpalia	16th October 2018	1st Prize in State Level Research Presentation Competition 'Synapse' organised by AISSMS College of Pharmacy, Pune



16	Kuradiya Meghna Paul Arohi	herbal remedies and current trends in alheimers disease	Mrs Vidhi Bhatia	5 October 2018 and 6 October 2018	Seminar cum Workshop on Nanopharmaceuticals: Maneuvering The Path From Processing to Characterization at Vivekanand Education Societys College of Pharmacy, Chembur (E), Mumbai
17	Ms. Neelam Pandey	Nano Drug Delivery Systems for Ovarian Cancer Therapy	Mr Keyur V Shastri	5 October 2018 and 6 October 2018	Seminar cum Workshop on Nanopharmaceuticals: Maneuvering The Path From Processing to Characterization at Vivekanand Education Societys College of Pharmacy, Chembur (E), Mumbai
18	Ms. Pranita Dhage and Ms. Sayali Pawar	Organ on Chip: Is it the end of Animal Testing	Dr. Swati Mittal,	7th and 8th Sept 2018	Seminar on research in CNS disorders and workshop on development of Zebrafish facility and handling of laboratories animals on LH Hiranandani College of Pharmacy
19	Mr. Ojaskumar D. Agrawal	Poster on: Sodium Chloride and Diabetes Complications	-	26th Oct 2018	International Diabetes Federation 2018 HICC, Hitech City, Hyderabad Telangana
20	Mr Ojas Agarwal	Delivered a talk on Analytical Chemistry and analyst"	-	6/12/2018.	NSS College of Pharmacy Mumbai central
21	Megha Jeeson	Lipid drug conjugates- a potential nanocarrier system for drug delivery applications	Ms. Chaitali Surve	28th October	ICT, Mumbai
22	Megha Jeeson, Nikita Palande and Sayali Kharkar.	Nanocatalysis: the catalyst of Nanoscience era	Ms. Chaitali Surve	5 and 6 October	Nanopharmaceuticals: Maneuvering the path from processing to characterization and poster competition
23	Mr. Pratip Chaskar	Know Your Chemistry- Know Your IUPAC firs	-	29.10.18	SBs College of Pharmacy Dombivli

XI. SEMINAR/ CONFERENCES/WORKSHOP/EXHIBITIONS ATTENDED

Sr. No.	Name of Faculty	Topic	Venue and Date
1	Dr Supriya Shidhaye	One Day National Level Workshop on `Revised Assessment and Accreditation by NAAC	Sheth N.K.T.T. College of Commerce & Sheth J.T.T, College of Arts, Thane (W) 28th September, 2018
		National leel seminar Social ntrereneurshi A Tool for omen moerment"	VES Institute of Management on 12th & 13th October, 2018. 12 th & 13 th October, 2018
2	Dr Supriya Shidhaye Dr. Rajashree Hirlekar	Seminar orsho on DRAGIT [®] - Versatile Polymer for Oral Drug Delivery"	Evonik India Pvt. Ltd., Mumbai, 26th October, 2018.
3	Dr. Rajashree Hirlekar	Discussion and Orientation Meeting for subject - Nutraceuticals and Dietary Supplements [Elective of T Y B Pharm Sem V (CBCGS 2016 Syllabus)]	Mumbai Educational Trust Institute of Pharmacy, Bandra (W), Mumbai 19 July 2018 (Thursday)
		Engineering Nanosuspension to improve local delivery of hydrophobic and ionizable hydrophilic drugs by Dr. Abhijit Date	07/07/2018, VES College of Pharmacy
		One Day National Level Workshop on `Revised Assessment and Accreditation by NAAC	Sheth N.K.T.T. College of Commerce & Sheth J.T.T, College of Arts, Thane
4	Dr. Rajashree Hirlekar Mrs. Pradnya Korlekar	Three day orsho on Training for NAAC organised by Rashtriya Uchcharat Shiksha Abhiyan (RUSA) and IQAC University of Mumbai	University of Mumbai, Kalina Campus 22-24/ 10/2018



Pharma Equinox

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5	Dr. Rakesh Somani Dr. Sandip Zine Mrs. Sonali Munj Mr. Pratip Chaskar	Workshop on essential tools and guides for green chemistry and engineering education and research by Green chemistree Foundation organized	Somaiya college 29/9/2018
6	Dr. Mushtaque A. S. Shaikh	2 day workshop on "Rational Drug Design: Fundamentals, Pitfalls and Way ahead"	Bhanuben Nanavati College of Pharmacy. 18-19th May 2018
		AICTE-CII National Education Summit 2018	AICTE Headquarters. Delhi 4-5/10/2018
7	Harsha Kathpalia	Syllabus workshop for TY.B.Pharm CBCS, for Pharmaceutics and Cosmeticology	BNCP, Vileparle on 16th July 2018
		CDA signed with Gangwal chemicals pvt. ltd. sponsorship : Rs. 1,20,000/- Industry project ' Development of SR tablets of Metoprolol succinate based on co processed SR excipient	VES College of Pharmacy
		Engineering Nanosuspension to improve local delivery of hydrophobic and ionizable hydrophilic drugs by Dr. Abhijit Date	07/07/2018, VES College of Pharmacy
8	Mrs Vidhi Bhatia	National Seminar on Nutraceuticals: Recent Trends and Advances	Bombay College of Pharmacy, Kalina, Mumbai held on 30 November 2018
		One day national seminar on Gender Sensitization and women's right	Dr Ambedkar college of Commerce and Economics 22/ 09 /2018
9	Mr Keyur V Shastri	Discussion and Orientation for subject - Nutraceuticals and Dietary Supplements [Elective of T Y B Pharm Sem V (CBCGS 2016 Syllabus)]	MET, Bandra (W), Mumbai 19 July 2018 (Thursday)
		Symposium on Menopause: A Path To Bone and Muscle Health organised by Kasturba Health Society's Medical Research Centre, BNCP, Mumbai Obstetrics & Gynaecological Society, Mumbai Menopause Society	Juhu Jagruti Hall, Vile Parle (West), Mumbai held on 25 September 2018
		National Seminar on Nutraceuticals: Recent Trends and Advances	Bombay College of Pharmacy, Kalina, Mumbai held on 30 November 2018
10	Dr. Swati Mittal	one week AICTE-ISTE approved STTP "Biology for Engineers".	VESIT, 02nd July to 06th July 2018.
		Syllabus workshop for TY.B.Pharm CBCS, for Pharmaceutics and Cosmeticology	BNCP, Vileparle on 16th July 2018
		One week STTP on Biology for Engineers	2nd July to 6th July VES Institute of Technology, Mumbai
11	Dr Sandip Zine	AICTE-ISTE Approved Short Term Training Program "Biology for Engineers:	2nd July to 6th July 2018 Vivekanand Education Society's College of Information Technology (VESIT), Chembur.
12	Dr. Gaurav Doshi Mrs. Pradnya Shinde Korelkar	Syllabus workshop for TY.B.Pharm CBCS, for Toxicology	MET College of Pharmacy, bandra, Mumbai on 07/12/2018
13	Mr. Ojaskumar D. Agrawa	International Diabetes Federation IDF 2018	HICC, Hitech city, Hyderabad Telangana 25-27 Oct 2018
14	Dr. Sameer Padhye	Syllabus workshop for TY.B.Pharm CBCS, for Pharmaceutics and Biotechnology	BNCP, Vileparle on 16th July 2018
15	Mrs Chaitali Surve Mrs Pradnya Korlekar Mrs Sonali Munj Mrs Ashwini Wani Ms Bhagyashree Parab	Cell culture techniques	19,20,21 July, St. Xaviers College
16	Ms. Bhagyashri Parab	Day Intensive Focus Program-Understanding The Basics of Intellectual Property for Scientists: The IP Generators	22-23 June 2018 Goa College of Pharmacy, Panaji
17	Mr. Pratip Chaskar	3rd Chemtastic 2018	VES College of Pharmacy 28th July 2018
		One day visit for Learning operations of various hyphenated instruments in analytical chemistry	8th Sept 2018, QbD research lab, Thane
		Workshop on "Essential tools and guides for green chemistry and engineering" by Green	29/9/2018, Somaiya college



		chemistry Foundation.	
18	Dr. Sameer Padhye	First term training by DLLE	K.J. Somaiya College of Science and Commerce 08.08.2018
19	Mrs. Pradnya Korlekar	Techniques in Animal Tissue Culture (Three days Workshop)	St. Xavier's College, Mumbai
		Seminar on research in CNS disorders and workshop on development of Zebra Fish facility.	LH Hiranandani College of Pharmacy
20	Mr K V Shastri Dr. Rajashree Hirlekar	Discussion and Orientation for subject - Nutraceuticals and Dietary Supplements [Elective of T Y B Pharm Sem V (CBSGS 2016 Syllabus)]	MET Institute of Pharmacy, Bandra (W), Mumbai 19 July 2018 (Thursday)
21	Mr K V Shastri Dr. Rajashree Hirlekar Dr. Gaurav Doshi Dr Anita Ayre	Participated in The Executive Development Program In Basics and Applications of Pharmacokinetics in Drug Development	VES College of Pharmacy, Chembur (East), Mumbai - 4000 74

XII.SEMINAR/ CONFERENCES/WORKSHOP/EXHIBITIONS/ ADD ON COURSEORGANIZED/ CONDUCTED

Sr. No.	Name of Faculty/ Resource person and organizer	Topic	Venue and Date
1	Dr. Rajashree Hirlekar Dr Anita Ahire	Two days seminar on "Nanopharmaceuticals: Maneuvering the Path from Processing to Characterization"	5 th and 6 th October VES COP
2	Dr Rakesh Somani (Main Organiser)	Orientation Programme for Pharmacy Teachers in the subject of "Synthon approach"	24th July 2018, VES COP
3	Mr. Pratip Chaskar	Two sessions on One Day Workshop on "IUPAC Nomenclature - Mystery Demystified"	21.7.18 and 4.8.18, VES COP
		Attended a talk on "NMR & its applications" Dr. Joshi (TIFR)	11th Sept 2018, VES COP

XIII.YOGDAAN: Professional special contribution by Faculty Members

Sr.No.	Name of the Faculty	Capacity	Nature of Honour (Details of contribution)
1.	Dr. Supriya Shidhaye	VC Nominee for Governing Body Meeting	Konkan Gyanpeeth Rahul Dharkar College of Pharmacy & Research Institute, Karjat on 7th September, 2018.
		LIC Member	LIC at K.M. Kundnani College of Pharmacy, Colaba, for Continuation of Recognition for Ph.D. (Tech.) in Pharmaceutics from A.Y. 2014-15 on 27.09.2018.
		VC Nominee for Subject Expert	Staff Selection Committee at NCRD's Sterling Institute of Pharmacy for the posts of Professor/ Assistant Professor held on 29th September, 2018.
		LIC Member	LIC at Govindrao Nikam College of Pharmacy, Sawarde, Chiplun, on 15th October, 2018 for Closure of M. Pharm. in Bio-Pharmaceutics & Pharmacokinetics from A.Y. 2016-17.
		Examiner	Viva of Ms. Vinita Basantani
		Member of Board of Studies	BOS Meeting on 13.06.2018
		VC Nominee Subject Expert in selection committee	Yashwantrao Bhosale College of Pharmacy at Sawantwadi, 28th Aug 2018
2	Dr Ganga Srinivasan	VC Nominee for Subject Expert	Staff Selection Committee at NCRD's Sterling Institute Pharmacy for the posts of Professor/ Assistant Professor held on 29th September, 2018.
		VC Nominee for Subject Expert	Selection Committee Member, Govind Rao Nikam College of Pharmacy, Sawarde, Chiplun 20th Oct 2018
		VC Nominee Subject Expert in	Selection committee Yashwantrao Bhosale College of Pharmacy at Sawantwadi on 28th Aug 2018
		Subject Expert, Selection Committee	Selection Panel for Assistant Prof at VIVA College of Pharmacy, Virar on 21st June 2018
		Internal Examiner M.Pharm Viva for 3 students (O grade)	Internal Examiner, M.Pharm Viva for 3 students (O grade)
		Ph.D examiner	Thesis of Panjab University
		Reviewer for abstracts,	AAPS Symposium reviewer for abstracts
		External Examiner	M.Pharm Viva , by Pune University at AmrutVahini College of



Pharma Equinox

Nutraceuticals 2019

			Pharmacy, Sangamner on 26-6-18
3	Dr. Rajashree Hirlekar	Resource Person Judge	Delivered a lecture on "Preparation methods for various Nanopharmaceuticals: A concise Review" at Nanopharmaceuticals: Maneuvering the Path from Processing to Characterization' at VES College of Pharmacy on 5th and October, 2018 Vortex 2018, Pharma events, at ICT, Mumbai on 27 th October 2018
4	Dr. Rajashree Hirlekar	Coordinator	Nanopharmaceuticals: Maneuvering the Path from Processing to Characterization' at VES College of Pharmacy on 5th and October, 2018
	Dr Anita Ahire	Coordinator	Project on compilation of technical package as per CTD requirements by ThermoFisher scientific
5	Dr Rakesh Somani	Coordinator	15th May 2018 Conducted Academic Audit activity of VES COP 24th, 25th May 2018 Video recording of lectures 04 faculties
		LMC panel member	Participated .RDCOP, Karjat on 30th May Viva College on 21st May Indira Institute, Sadavali on 14th July
		LIC	M Pharm LIC at St John on 29th June B Pharm LIC for 04 Colleges of Konkan from 18th April to 21st April B Pharm LIC for SVBCP on 11th June
		LIC	LIC committee at YTIP, Karjat Bhivpuri, 17/05/2018
		President	MHRD's IIC
	Dr. Anita Ayre	Online course module completion	Successfully completed the third level course on 'Finding vital settings via factorial analysis' offered by Statease Academic
		Selection Committee Panel	Appointed as subject expert by University of Mumbai in the selection committee panel for Viva College of Pharmacy on 21st June, 2018
		Reviewer	Reviewed poster abstracts in the subject area of Pharmaceutical Analysis in the upcoming symposium, 'AAPS PharmSci 360'
7	Mrs Vidhi Bhatia	Organizer WDC seminar	Organized seminar on "Assertiveness" as a part of WDC activity on 10th October
8	Dr. Swati Mittal	Speaker	"Advances in formulation development an overview" a two days seminar & poster presentation on 12th & 13th october Yadavrao Tasgaonkar Institute of Pharmacy
9	Dr. Gaurav Doshi	Best Teacher	Glacier Journal research Foundation (Global Management Council) honour Dr. Gaurav Doshi for Distinction of being one of the best Teachers in the country
		Research Guide	M Pharm Quality Assurance students under my guidance have submitted Thesis on 30 July 2018 [Monday] to University of Mumbai. (Ms. Bernadette Matthews and Miss. Ankita Patil)
		Reviewer	Reviewed one article in Indian Journal of Traditional Knowledge
		Member Secretary and Animal House Incharge	Successfully conducted Internal scrutiny committee meeting and Main CPCSEA . A Total of 12 projects were approved
		Reviewer	Reviewed one article of Journal of Applied Pharmaceutical Science Reviewed one article of Pharmacognosy Journal Reviewed second article of Pharmacognosy Journal Reviewed one article in Indian Journal of Traditional Knowledge
		Resource Person	Delivered a talk on Effective guidelines for publishing in good journals with impact factor with proper journal selection
		Reviewer	Member in Review Board of Indian Journal of Pharmacy and Pharmacology. Associate editor for O International Journal of pharmacy and Pharmacology. O Asian Journal of Animal Sciences. O Research Journal of Medicinal Plant. O Asian Journal of Scientific Research. O Research Journal of Immunology. O Reviewer of Indian Journal of Experimental Biology. O Reviewer of International Journal of Pharmacognosy and Phytochemical Research O Reviewer of Brazilian Journal of Pharmacognosy



10	Dr. Sameer Padhye	Speaker	"Microspheres for ocular delivery" on 12th October at Yadavrao Tasgaonkar Institute of Pharmacy.
11	Mr. K V Shastri Mrs Vidhi Bhatia Dr Gaurav Doshi Mr Ojas Agarwal Mrs Pradnya Kprlekar Dr Surekha Pimple	Organizing Committee Member	Seminar cum Workshop on Nanopharmaceuticals: Maneuvering The Path From Processing to Characterization
12	Mr. Pratip Chaskar	Speaker	Speaker for One Day Workshop on "Know your Chemistry Know your IUPAC First" at SVBCP, Dombivli, 29.10.2018

XIV.
XV.
XVI.
XVII.
XVIII.AWARDS

1.	Mr. Gaurav Doshi	Glacier Journal research Foundation (Global Management Council) honoured Dr. Gaurav Doshi for <i>Adarsh Vidya Saraswati Rashtriya Puraskar</i> and <i>Distinction of being one of the best Teachers in the country.</i>
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XIX.PLACEMENT DETAILS:

PG PLACEMENT

ACADEMIC YEAR2018-19			
Sr. No	Employer	No. of Students recruited	Salary/Annum
1	Flamingo	1	2L
2	Self Employed	1	2L
3	Pfizer	1	3L
4	Sutherland Global Ltd	1	3L
5	Rubicon	1	2L
6	Blumen Biovitals	1	2.5L
7	NuLeap	1	2L
8	TCS	1	2.6 L
9	Encube Ethicals	2	2L
10	J&J	1	2L
11	Nestle	1	3L
12	Ajanta Pharma Limited, Kandivali (East), Mumbai	1	2L
13	Teva	1	2L
14	Cipla Ltd	1	2.4 L
15	TCS	1	2.7L
16	St John's institute of Pharmacy and Research	1	
17	COGNIZANT	5	1.9L
18	Launchmydrug Technologies	1	2.5L
19	Vikas Laboratories Limited	1	1.8L
20	Evonik India Pvt Ltd	1	2L
TOTAL NO OF STUDENTS PLACED		25	

UG PLACEMENT FOR BATCH PASSED OUT IN 17-18

SR.NO	COMPANIES	No of Students placed
1.	GSK	05
2	TCS	05
3	SYDLER	01
4	ALCHEM	01
5	SPICEJET	01
6	SANOFI	02



7.	Breach Candy Hospital	01
8	Apollo Pharmacy	01
9	AGIO PHARMACEUTICALS	01
10	MEDLIFE	04
11	HETERO Health Care	01
12	IKS Health care	01
13	Thyrocare	01
15	WCC Pvt Ltd	01
16	SELF EMPLOYED	02
17	Retail Pharmacist	02

PHO Activities 2018-2019

Sr. No	Event organized	Location for event	Date	Name of the PHO Members involved in organizing the event	Name of the non - PHO Members involved in organizing the event	Number of Participated population /Target audience
1	Blood Donation Campaigns	Mumbai City & suburbs	20 th August, 6 th October, 14 th October, 20 th October, 16 th November, 18 th November	Santhanalaxmi Kumaresan, Kirti Sawant, Barkha Makeeja, Sneha Sutar, Kavneel Sayal.	-	656
2	Sexual Health Awareness	Govandi	9 th October	Sanjana Nair, Tejaswini Devasthale, Kirti Sawant, Devashree Sahani, Purvashree Gawde, Barkha Makeeja, Sneha Sutar, Sanjay Kumar Maurya	Shubhangi	100+
3	Mental Health Awareness	Chembur	11 th October	Santhanalaxmi Kumaresan, Tejaswini Devasthale, Kirti Sawant, Devashree Sahani, Purvashree Gawde, Barkha Makeeja, Sneha Sutar, Kavneel Sayal, Ankita	NIL	40+
4	Walk for freedom	Bandra	20 th October	Santhanalaxmi Kumaresan, Kirti Sawant, Sneha Sutar	Rishabh Chaube	40+

JOURNAL CLUB ACTIVITY

It is an initiative that has been undertaken at VESOP since last four years for students who are in their third year of bachelors in pharmacy program as per the schedule.

PARENT TEACHER MEETING

Parent's Teachers Meeting [PTM] was conducted on 13.10.2018 [Saturday] for SYBPharm, TYBPharm and Final Year B Pharm. Orientation program for First Year B. Pharm Parents and Students was held on 18th August, 2018 (Saturday) from 2:30 to 4:00 pm.

XX.

DIGITAL POSTER CLUB ACTIVITY WAS CONDUCTED FOR S.Y.BPHARM SEM III CLASS ON 20.10.18

They have prepared one slide cum poster which they have to display electronically with the help of LCD and any one from group will be explaining about that poster in detail

INDUSTRY INSTITUTE INTERACTION

EXECUTIVE DEVELOPMENT PROGRAM

The Executive Development Program has been initiated with an objective to train industry delegates every year by members of the academia as well as industry personnel having vast experience in the concerned field. This program spreads over a period of 6 months starting from December. (Twice a month on alternate Saturdays, approximately a 3-hour session) The theme for this year's



EDP is “Innovations in Pharmaceuticals, Healthcare and Biological”. Following are the modules that would be covered in details over a period of six months by eminent speakers:

1. Regulatory aspects: 505(b)(2): Filing, need and opportunities
2. Innovations and business potential
3. Theoretical concepts of selected drug delivery systems
4. Biosimilars: Challenges and opportunities
5. Nutraceuticals: Challenges and opportunities
6. Innovations in packaging and drug delivery devices
7. Continuous manufacturing: Concept and technologies
8. Data solutions/Market Research.

INDUSTRIAL VISIT

1. An industrial visit/ workshop/training program to Anchrom, was organised by **Dr. Anita Ayre** for the **SY M.Pharm students** (in batches of 8 students each) on 16 Sep, 14th Oct and 28th Oct 2018.
2. A one day industrial visit/ workshop/training program to Electrolab India Pvt for **SY M.Pharm students** was organised by **Dr. Ganga Srinivasan** on 20th March 2018.
3. SYBPHEM: Blood bank visit will be in March or April 2019 (as per the availability of students)

INSTRUMENTS PURCHASED

- (i) Stability Chamber (1 No) 90L GMP model was purchased from Thermolab Scientific Equipments Pvt. Ltd. in the month of December 2017.
- (ii) Dr. Rajashree Hirlekar Rotary Evaporator

INSTRUMENTS DONATED BY INDUSTRY/ORGANIZATIONS

- (i) Spray Drier LU 227 (Lubulima) was donated by Cipla Ltd in the month of October 2017.
- (ii) Cooling Incubator (2Nos) (Remi CI 10S) were donated by Emami Ltd. in the month of November 2017.
- (iii) Gansons Lab Conical Mill GU 5 was donated By Gansons Limited as a part of their CSR activity in the month of March 2018.

Sr.no	Name of Industry	No. of students	Period of Training
1	Abbott Healthcare, Andheri	1	14/05/2018 to 25/05/2018
2	Breach Candy Hospital, Mumbai	1	18/05/2018 to 17/05/2018
		2	28/05/2018 to 27/05/2018
		1	15/05/2018 to 14/05/2018
3	Cipla, Lower Parel	1	20/6/2018 to 05/07/2018
		1	14/05/2018 to 14/06/2018
4	Ethicom Healthcare LPP, Kurla	1	21/05/2018 to 20/6/2018
5	Emami Limited, Goregaon	2	09/05/2018 to 24/05/2018
6	Gautam Medical Centre, Ambernath	2	21/05/2018 to 4/06/2018
7	Galentic Pharma, Belapur	2	23/06/2018 to 21/07/2018
8	Medley Pharmaceuticals, Andheri	1	21/05/2018 to 15/05/2018
9	Meyer Vitabiotics, Thane	1	21/05/2018 to 20/06/2018
		1	04/06/2018 to 04/07/2018
		1	21/06/2018 to 22/06/2018
10	Merck Specialities Pvt Ltd, Chembur	6	09/05/2018 to 21/05/2018
		5	22/05/2018 to 01/06/2018
11	Merck Limited, Nerul	3	16/05/2018 to 30/05/2018
		3	01/06/2018 to 15/06/2018
12	Merck Life Science, Vikhroli	2	09/05/2018 to 22/06/2018
13	Maneesh Pharmaceutical Ltd., Govandi	4	04/06/2018 to 03/07/2018
14	Pharmachem Agencies, Ulhasnagar	2	04/06/2018 to 20/06/2018
15	Sanjivani Parental Limited, Bhandup	1	21/05/2018 to 20/06/2018



16	Shree Simba Chemist, Ghatkopar	11	09/05/2018 to 09/06/2018
		2	15/05/2018 to 15/06/2018
17	Sitech Labs, Vikhroli	1	09/05/2018 to 21/05/2018
18	USV Private Limited, Govandi	1	14/05/2018 to 13/06/2018
		1	10/05/2018 to 09/06/2018
19	Vithai Pharmaceuticals, Mulund	1	23/05/2018 to 22/06/2018
20	Watson Pharma Pvt.Ltd. , Ambarnath	2	14/05/2018 to 14/06/2018
		7	21/05/2018 to 27/06/2018

INSTITUTION'S INNOVATIVE COUNCIL (IIC)

The first event in this respect was a half day workshop on "Introduction to Intellectual Property Rights", conducted by Mrs. Pallavi Kharkar (Founder, IPRAM) on 1st December, 2018. The workshop was attended by faculty members and PG students.

The second activity is planned in the last week of December. The theme of the workshop is "Cognitive skills, design and critical thinking for idea generation".

DEPARTMENT OF LIFE LONG LEARNING (DLLE)

Every year VESOP guides number of student activities by registering with Department of Life Long & Extension, University of Mumbai. Many of the students have won accolades in the DLLE festival entitled "UDDAN" in the past. Currently 62 Students are registered for DLLE Program under the able guidance of **Dr. Sameer Padhye** and **Mr. Keyur Shastri** Ms. Sanjana P. and Ms. Sita P. have been appointed as the student managers. The project details and activities planned are as mention in the table.

Sr. No.	Project	Batch (No. of Students)	Students Activities
1.	Career Project (Third Year B.Pharm)	25	Poster presentation in front of school students covering various professions, interviewing two persons of their respective selected profession; and brochure making
2.	Population Education Club SY B.Pharm Final Year B.Pharm	37 (Total) 10 27	The students educate themselves, their colleagues and then the society, on social and environmental issues by participating in Debate, Essay Writing, Poster Competition, Street Play, Talk

Field Coordinator (appointed by DLLE): Mr. Chandrashekhar Chakradev

COUNCIL ACTIVITIES

SR. NO	EVENT	DATES
1	Essay Competition on Occasion of Birth Anniversary of Shri. Hashu Advani	28/07/2018
2	Youth Festival Orientation of Mumbai University	31/07/2018
3	Friendship Day	07/08/2018
4	MDRI Marrow Donation Drive	10/08/2018
5	Mumbai University Youth Festival Elimination Round	14/08/2018, 16/08/2018, 17/08/2018
6	Independence Day (Jagruti)	15/08/2018
7	Fresher's Party	24/08/2018
8	Teacher's Day	05/09/2018
9	World Pharmacist Day	24/09/2018
10	Garba Night	10/10/2018

LANDMARKS OF THE ACADEMIC YEAR 2018-19

RESEARCH GRANTS RECEIVED

Faculty	Title	Funding Amount	Period	Role as PI / Co-PI	Agency	Status
Dr. Supriya Shidhaye	Topic name: Targeted Solid Lipid Nanoparticulate delivery system of Beta Caryophyllene oxide containing n-3 Polyunsaturated fatty acid as anticancer nanocarrier for treatment of Breast cancer	Rs. 36,76,000/-	November 2018 to November 2020	PI	Science and Engineering Research Board (DST-SERB)	
Dr. Gaurav Doshi	Studies on Dietary Soup by Swimming Endurance test	Rs.1,20,000/-	Approved on 14/07/2018	PI	Etnomedicinal Research centre, FEEDS Campus, Manipur	Started Dec.2018. In process
Dr. Gaurav Doshi	Studies on Antidiabetic Formulation 1,19,700	Rs.4,00,000/-	Approved on 14/07/2018	PI	Etnomedicinal Research centre, FEEDS Campus, Manipur	Starting Jan. 2019
Ms Chaitali Surve and Dr Supriya Shidhaye	Development, scale-up and tech transfer of a separator gel	Rs 1,20,000/-	Started August 2018	-	Adex Pharmaceutical Consultancy Pvt. Ltd	In process
Harsha Kathpalia	'Formulation development of the Metoprolol Sustained Release Tablet	Rs.1,20,000	10 months	PI	Gangwal Chemicals	In process



AICTE-CII AWARD

Vivekanand Education Society's College of Pharmacy secures First prize in the AICTE-CII Survey of Industry Linked Technical Institute 2018". To promote industry academia collaborations and enhance private sector contribution towards excellence in education, has been conducting survey of the technical institutions all over India since 2012. The award ceremony was held in the education summit jointly organised by AICTE-CII on 4th and 5th October 2018 at AICTE headquarters, Delhi.



ESTABLISHMENT OF INSTITUTION'S INNOVATIVE COUNCIL (IIC)

VES College of Pharmacy has recently established Institution's Innovation Council which is a recognized unit of MHRD's Innovation Cell. The objective of this council is to promote entrepreneurial skills in students and, motivate and train them to become successful entrepreneurs.. The members of IIC of VES COP are Dr. Rakesh Somani (President), ,Dr. Mushtaque Shaikh (Member), Dr. Sameer Padhye (Member)

VESCOP TECHNICAL MAGAZINE

VESCOP is on the verge of launching its Technical Magazine " Pharma Vision : Research and Reviews". As the name suggest it would be a magazine with wide scope in pharmacy subjects and is going to be an annual magazine for now. It will be available Biannually from 2019 onwards. Dr. Mushtaque Shaikh is the process of getting the ISSN number for the magazine which will be published in electronic format. Each article will be duly marked with Digital Object Identifier (DOI) number to enhance the global localization. The article can be downloaded or submitted form its website <https://sites.google.com/a/ves.ac.in/pharmavision/> . Once the ISSN number is granted the VESCOP would want strong editorial board in the form of qualified and knowledgeable people from various fields of Pharmacy.

AVISHKAR AWARD

Mrs. Harsha Kathpalia, Assistant Professor, Department of Pharmaceutics, won a gold medal in Category 6: Medicine and Pharmacy, Level: Teachers pursuing PhD in recently held 13th Maharashtra State Inter-University Research convention (Avishkar 2018) held at Gondwana University, Gadchiroli, Maharashtra.

The research work comprised of Novel Nano Formulation of Artemisinin Combination Therapy For The Treatment of Multidrug Resistant Malaria under the guidance of Dr. Supriya Shidhaye, Principal, VES College of Pharmacy.

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SNAP-STORY





Dr. Akshata V. Oswal

M.S. (Ophthal), FRCS,
MASCERS (USA)
Gold Medalist



- Fellow, Phaco and Refractive Surgery
- Ex-Consultant, Aditya Jyot Eye Hospital, Mumbai
- Ex-Consultant Sree Netralaya Eye Hospital Hyderabad.

e-mail : akshu276@gmail.com

Dr Akshata V. Oswal is a experienced eye surgeon who is practising in the field of ophthalmology since 2008. She has worked in esteemed institutes like Laxmi Eye institue(panvel), Aditya jyot eye hospital(wadala), Bachuali eye hospital(parel), Shree Netralaya eye hospital(Hyderabad).

She is Specialised in the following services with precision and excellence:-

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4. Cataract surgery : No injection, No stitch , No eye pad
5. Glaucoma evaluation and treatment
6. Contact lens clinic.

Dr Akshata V. Oswal has been doing spectacle reduction procedures from 2011:

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Presently She has her own private practice at:-

1. Vikas nursing home, Shivaji Nagar, Govandi.
2. Kolekar hospital, near Ambedkar garden , Chembur.
3. Appolo Spectra, multi speciality corporate surgical hospital , near Deonar bus depot, Chembur.
4. Charitable trust at Dr V. C. Mehta eye clinic , Ghatkopar.

Regards ,

Dr. Akshata V. Oswal

Cataract and LASIK Surgeon.

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Dadar(W), Mumbai - 28



THE NUTRA SPEAK

A digital interview of Dr. Lal Hingorani was conducted over Skype by Ms. Sayli Kharkar, Ms. Priyanka Ghosh and Ms. Santhanalaxmi Kumaresan on 25th January, 2019.

Dr. Lal Hingorani is the CMD at Pharmanza Herbal Pvt Ltd, and Director at Pharmanza India Pvt Ltd.

1. Could you please elaborate on your career path in Nutraceuticals ?

I started my career as a Lecturer in chemistry after finishing my Masters in Organic chemistry. Then I moved to the Industry and started working with API synthesis, wherein I mainly developed processes for existing molecules and took them to production. I was introduced to the field of nutraceuticals around the year 2000. We launched three very popular products in those days for weight reduction. They were Garcinia cambogia, Chromium Picolinate and L-carnitine. These products were an immediate success. During this period, I met a certain someone who wanted to start a business in USA in the nutraceutical segment and I partnered with him to start a Herbal extraction company in 2006. There were practically no regulations in USA at that time and people were buying material on the basis of a Certificate of analysis and all they used to check was the texture and the color of the product. Whatever regulations were there in USA, were being preached but not practiced. Various technocrats started assembling a manufacturing plant to meet the regulations of USA. After which the US finally started implementing nutraceutical laws which is one of the main reasons as to why we currently

we have a strong footing there. We Invested in research for products and clinical trials to bring out branded ingredients and today we have a very good range of products and are recognized in the International market. Regulations in India also came in pretty late. FSSAI came in with quite a lot of pomp and show but finally the Supreme court had to intervene to correct them and the final draft which is a lot more practical came out in 2017. Business has become much more easier after that.

2. What is the job profile of a pharmacist in a nutraceutical company ?

All streams of Pharmacy have a potential scope in the field of nutraceuticals. The knowledge and understanding of phytoconstituents and their applications usually possessed by a Pharmacognosy expert is required to analyse the potential raw materials for various nutraceutical products. Pharmaceutics finds its way in this field in terms of development of formulations with better palatability, improving acceptance, and innovation to promote the use of Nutraceuticals. For instance, Vitamin gummies are now available in USA. Quality Assurance is also important as many regulations on the products are being implemented all across the world. Pharmacology experts are required for performing kinetic studies, clinical trials, etc. As such, pharmaceutics and pharmacognosy students do not have any competition in this field, but QA and Pharmacology experts may face competition from other fields.



3. What do you think about the current scenario of Nutraceuticals in India ? How does it compare with that in European and other Western countries?

The issue today in India is the lack of awareness. Less than 50% of the educated population is aware and cognizant of the importance of Nutraceuticals and nutrition in general. People are aware about the science of nutrition but do not take steps to ensure that they are providing wholesome nutrition to their bodies. This makes the current scenario of Nutraceuticals in India bleak. However, the doctors are currently prescribing Nutraceuticals and the market is rapidly developing in this direction. Also Nutraceuticals are heavily marketed and advertised nowadays. The main requirement today is people's understanding and compliance with respect to nutraceuticals. In the Western countries however, the general population is more conscious about their health and works on increasing their lifespan and they understand the pivotal role nutraceuticals play in this aspect.

4. Where according to you is the field of Nutraceuticals headed in the next 5-10 years?

Analysing the current trend of advertising and marketing of Nutraceuticals, people are becoming more abreast with the requirement of Nutraceuticals in our daily routine. However, the future of this field lies in innovation. There must be some innovative way to incorporate Nutraceuticals in formulations or products where people would be both curious and encouraged to take Nutraceuticals, for example the Vitamin gummies, I mentioned prior. Also, if the literature promotes more about the use of Nutraceuticals or natural products rather than focusing on diseases, Nutraceuticals

will prevail. Basically, innovation and awareness is the future of this field.

5. What according to you is the key attraction of Nutraceuticals for the Pharmaceutical industry?

Currently, doctors are prescribing Nutraceuticals to patients for a particular condition and promoting their use. Also, there is not much control on the pricing of these products as compared to regular pharmaceutical products. These are the key aspects that are driving the Pharmaceutical companies towards Nutraceuticals.

6. What advice would you like to give to students currently pursuing pharmacy ?

The thing to be considered here is, whether you are interested in engaging yourself in a job or a business. If you're looking for a business opportunity, this is your field! Nutraceuticals does not require a heavy initial investment and can be started right from your home, from your own kitchen in fact! An example of this is the widely used Shelcal, Torrent. All you need to be able to do is ignite the innovation within you and apply your basic knowledge of pharmacy to develop a new product.

Even in the job sector, you can work in R&D and develop new products. At the end of the day the main goal is to terminate the gap between taking a medicine and taking a nutraceutical. And this can only be done by the young and budding connoisseurs of this field! Having said this, I would like to wish every student the best of luck for all their future endeavours!



SCIENTIFIC SECTION NUTRACEUTICALS



AYURCEUTICALS: A PARADIGM SHIFT FROM CURE TO PREVENTION OF DISEASE

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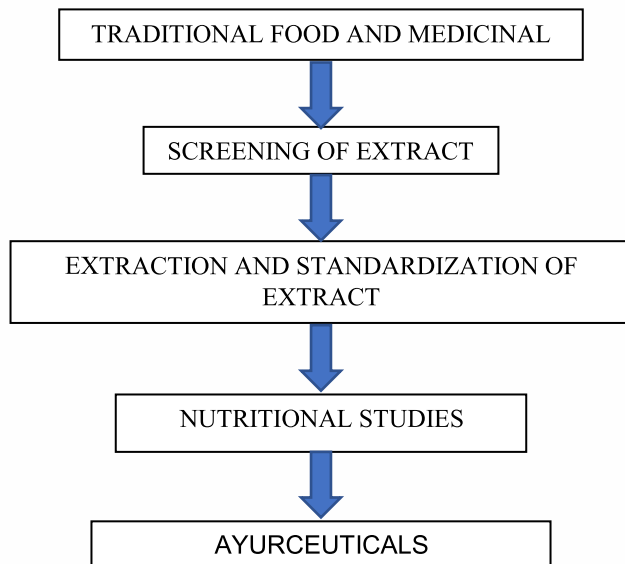
Ayurceuticals are a subset of the universe of Food Supplements coming under FSSAI (Food Safety and Standards Authority of India), which are the products with documented quality, safety and efficacy, based on the principles and practice of Ayurveda, Unani and Siddha, with consensual and congruent validity of Nutra-ayurveda. These are ingredients isolated in pure form from a known and proven ayurvedic formulation or herb, which have clinically proven nutritional benefits.

Significance:

- Ayurceuticals can provide for the unmet needs of the health-care viz. care of the elderly, metabolic and degenerative diseases, promotion of health and development of children, and complementary therapy in cancer, allergic and immune disorders.
- Ayurceuticals potentially improve life style by improving the quality of life.

DEVELOPMENT OF AYURCEUTICALS:

Ayurvedic dietetics and nutrition are a novel approach to the world. It has evolved with various methods and processes as well as nutritional benefits of herbs. All classical text described in the Kritannavarga: Food (ahara) and lifestyle (vihara) significantly affect one's overall health and the insurgence of metabolic and degenerative diseases are a result of adaptation of modern life style. According to this philosophy, most incurable diseases are produced due to improper food. An intelligent and self-controlled person should consume conducive food in the right quantity and at right time to prevent diseases. During this era, the concept of Rasayana evolved to promote longevity and wellness.



Correlation of Ayurceuticals with Rasayana: Ayurveda describes a term “rejuvenation” which is related to the uses and therapeutic benefits of rasayana as nutraceuticals. The rasayana therapy offers health benefits as like nutraceuticals such as maintaining health and vigor, youthfulness, reduces drowsiness and fatigue and maintain balances of doshas, thus improving biological rhythms of physiological functioning.



Ayurceuticals and Rasayana:

Ayurvedic Preparations	Health Benefits
Chyavanprasha	General health and prevention of respiratory disorders
Brahma rasayana	Protection from mental stress
Narasimha rasayana	Vigor and vitality
Phala ghrita	Reproductive health
Arjuna kshirapaka	Cardio protection
Rasona kshirapaka	Cardio protection
Shilajatu rasayana	Diabetes mellitus
Vachadi ghrit	Improves memory and speech in children
Brahmi ghrit	Improves memory in young and old
Bhallataka rasayana	Malignancy
Lasuna rasayana	Neurological disorder
Shatavari ghrita	Lactating mother
Pippali rasayana	Respiratory disorders
Jatyadi taila	Fistula, sinus and deep ulcers
Parvativilas taila	Local application in sciatica, otalgia, inflammation of the ear, neuralgia
Manjisthadi taila	Acne and skin infection
Chitrakadi taila	Fistul, sinus and deep ulcers

Target site	Ayurveda preparations	Health benefits
Gastrointestinal wellness	Shallaki	Inflammatory bowel disease
Hepato – biliary action	Bhuiamalaki	Viral hepatitis
Energy and metabolism	Drakshasava	Fatigue
Musculoskeletal health	Rasna	Low back ache
Cardiovascular reserves	Arjun	Low heart reserve
Respiratory tract	Sitopaladi	Dry and wet cough
Kidneys and bladder disorders	Kulathi	Kidney stones
Psycho-neural health	Saraswat arishta	Promote cognition
Reproduction and sexual health	Kaunch	Promote virility in both elderly
Immunity and infections	Daruharidra	Antimicrobial

Conclusion: The association of ayurvedic plants with nutraceuticals has become a very attractive and cost-effective strategy in medical arena. Ayurveda rasayana formulations provide many benefits as nutraceuticals, both as preventive and curative. When supported by current modern medical research, the acceptance will be whole hearted. Although ayurceuticals have significant promise in the promotion of human health and disease prevention; health professionals, nutritionists, and regulatory toxicologist need to strategically work together to plan appropriate regulation to provide the ultimate health and therapeutic benefit to mankind.

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HERBAL REMEDIES AND CURRENT TRENDS IN ALZHEIMER'S DISEASE

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Alzheimer's disease is an irreversible, progressive neurodegenerative disorder that leads to termination of memorial and intellectual abilities and ultimately capacity to do simple tasks as well. This disease is named after Dr. Alois Alzheimer who inspected the brain of a woman, finding abnormal clumps (amyloid plaques) and tangled cluster of fibers (Tau) which are the characteristics of the disease leading to destruction of connecting links between neurons which leads to neurodegeneration. Globally, this disease is the 6th leading cause of death with 4.4 million people suffering from AD. The common strategies involved in treatment of AD are enhancement of cholinergic transmission, reducing oxidative damage and inflammatory reactions, preventing amyloid formation, promote entry through blood brain barrier and enhance estrogen levels.

Herbal drugs as Anti Alzheimer's

1. Curcuma Longa:

Biological Source: Curcuma longa is a member of the ginger family derived from the rhizome of this plant belonging to family Zingiberaceae.

Chemical Constituents: Curcumin

Mechanism of Action: Curcumin has been reported, including anti-inflammatory, antioxidant, anti-proliferative action on microglia which is responsible for secretion of inflammatory substances, inhibits COX-2 enzyme, anti beta amyloid aggregation effect, increase in haemoxygenase activity, decreases tau phosphorylation AchE activity.

2. Bacopa Monneiri:

Biological Source: Fresh stems and the fresh leaves of Bacopa monnieri Linn., Pennell, Scrophulariaceae.

Chemical Constituents: Bacoside

Mechanism Of Action: It has antioxidant activity and causes chelation of iron in beta amyloid plaques and decreases degeneration of cholinergic neurons enhancing cognitive function and increases cerebral blood flow

3. Ginkgo Biloba:

Biological Source: Leaves obtained from dioecious tree Ginkgo biloba, Ginkgoaceae.

Chemical Constituents: Flavonoids like ginkgetin, isoginkgetin, quercetin, kaempferol, biflavones, ginkgolides A B C.

Mechanism of Action: It decreases beta amyloid formation and DNA fragmentation and improves cerebral blood flow and decreases formation of reactive oxygen species

4. Salvia Officinalis:

Biological Source: Leaves and herbs from Salvia Officinalis, Labiatae

Chemical Constituents: Apigenin, volatile oils

Mechanism Of Action: It acts as a free radical scavenger which inhibits acetylcholine esterase enzyme which is responsible for degradation of acetylcholine.

5. Ashwagandha

Biological Source: Dried root and stem bases of Withania Somnifera, Solanaceae

Chemical Constituents: Withaferin A, Withanolides A to Y

Mechanism of Action: It inhibits acetylcholine esterase, provides protection against inflammatory species and beta amyloid induced cytotoxicity.

RECENT ADVANCES

1. Nanoparticles

Nanoparticle drug carriers are solid biodegradable particles having size ranging from 10 to 1000 nm (50–300 nm). They have high physical stability and used in preparation of sustained release dosage forms for brain delivery of drugs. Curcumin is a candidate to prepare nanoparticles because it has low bioavailability, low retention and circulation time in the



body. Therefore, it is encapsulated with PLGA poly(lactic-co-glycolic acid) by high pressure emulsification technique.

2. Lipid Based Systems

The principle objective of formulation of lipid-based drugs is to enhance bioavailability of poorly soluble drugs. Lipid-based formulations have the advantage to reduce the toxicity of various drugs. The oral bioavailability of flavonoids such as quercetin, kaempferol present in *G. biloba* is relatively low due to their low lipid solubility. Therefore, it is necessary to increase the oral absorption of *G. biloba* by enhancing its bioavailability using phospholipid complexation technique in order to make it more soluble and promote penetration into the BBB and show desired therapeutic action. The route of administration is subcutaneous.

3. Liposomes

Liposomes are roughly nano or micro size vesicles consisting of one or more lipid bilayers surrounding an aqueous compartment. Quercetin acts as an antioxidant preventing the formation of free radicals in treatment for AD. The bioavailability of the aglycone quercetin is very poor. Therefore, it was prepared in the form of liposomes by reverse evaporation technique. The route of administration is intranasal.

4. Cyclodextrin Based Formulations

Cyclodextrins (CDs) are a family of cyclic oligosaccharides with a hydrophilic outer surface and a lipophilic central cavity. It is used to increase the bioavailability of poorly bioavailable drugs like curcumin. Complexation is done with the help of oligosaccharide CAVAMAX® (W8 gamma-cyclodextrin) by accommodating the lipophilic molecule in the inner hydrophobic cavity of this oligosaccharide. It enhances the bioavailability 40 times as compared to curcumin by forming molecular dispersions.

5. TRANSERMAL BASED DRUG DELIVERY

Huperzine A (HA), a natural alkaloid derived from the Chinese herb *Huperzia serrata*, is a selective, potent, and reversible inhibitor of AChE used in treatment of AD. HA requires frequent dosing in human subject, which reduces the compliance in the patients with AD. The undesirable side effects or noncompliance of the drug oral administration can be offset by using the transdermal therapeutic system (TTS), which can avoid the hepatic first-pass metabolism, maintain relatively stable plasma drug concentration, and reduce the dosing interval. Microemulsions have received increasing attention because of the advantages including enhanced drug solubility, good thermodynamic stability, and increased drug permeation rate. Microemulsion-based transdermal patches have been proposed to overcome some disadvantages of microemulsions.

Conclusion: Herbal drugs act as promising candidates to treat Alzheimer's disease to provide a safe, efficacious and an economical product to serve the society.

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HUMAN MILK OLIGOSACCHARIDES (HMOs): "A treasure trove for human health"

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Human milk oligosaccharides (HMOs) comprise a large family of extremely diverse oligosaccharides present in high concentrations and which generate a multitude of biological responses. They are generally considered to have a beneficial effect upon the establishment of the microbiota in infants, but they also exert this effect in adult humans. They can impede the attachment of pathogens and toxins such as *Campylobacter jejuni*, *Escherichia coli*, *Vibrio cholerae*, *Salmonella typhi*, *Helicobacter pylori*, bacterial toxins, *Entamoeba histolytica* and viruses, to the epithelial cells of the gastrointestinal tract. This in effect reduces their pathogenicity as binding to receptors on the epithelial cells is a prerequisite for infection by pathogens. If the pathogens or toxins bind to the HMOs they will be removed from the gastrointestinal tract and not cause disease. Therefore, HMOs are putative protective agents against enteric infections in adults as well as in



infants. HMOs are also useful as therapeutic or preventive adjuncts in gut motility disorders and gut pain, and possibly also have beneficial effects in reducing food allergies. Hence, dietary manipulation by the use of HMOs represents a strategy to promote a beneficial gut microbiota and provide health benefits to human adults as well as to infants.

What are HMOs?

Human milk oligosaccharides (HMOs) comprise extremely diverse oligosaccharides present in high concentrations in human milk. They form the third most abundant solid component of human milk after lactose and fat with typical concentrations of 10–15 g/l in mature term milk and exceed the protein content of human milk. HMOs are not digested in the upper gastrointestinal tract, and only 1–2% is absorbed in infants. The majority of ingested HMOs reach the large intestine where they provide selective substrates for specific gut bacteria, modulate the immune system, and prevent the epithelial adhesion of intestinal pathogens. Fucosylated HMOs were found to be the most prominent component. In human milk, the most abundant HMO is 2'-fucosyllactose, with a concentration of about 2 g/l.

- 300 times higher concentration of oligosaccharides in human milk compared to cow's milk
- >200 HMOs have been identified in human milk.
- 2'-FL is the most abundant oligosaccharide in human milk and makes up to 20 – 30% of the total HMO content
- 2 - Number of HMO approved in USA and Europe that can be added to formula

Modification of the Microbiota:

HMOs are very important to establish an effective microbiota in the human infant. They influence the gut microbiota and specifically promote the growth of beneficial bifidobacteria and improve health in adults as well as in infants.

2'-fucosyllactose (2-FL)

- Approximately 75–80% of mothers secrete 2'-FL HMO in their breast milk.
- 2'-FL added to formula has the identical structure as 2'-FL in human milk.
- Prebiotics—food for beneficial bacteria.

Application of HMOs:

- HMOs interact with the microbiota of the gut
- It directly modulates the immune response
- It modulates the markers associated with synaptic functions
- HMOs reduce the risk of the disease necrotizing enterocolitis
- in premature infants.
- Protect against enteric bacterial and viral infections
- Food allergies
- Colon motor contraction
- HMOs act as preventive and therapeutic anti-amoebic agents

HMOs as Prebiotics:

The bifidogenic flora had a beneficial effect not only on the new-born and baby's health, but also on the adult. These bifidogenic flora makes the absorption of nutrients and minerals easier, prevents the development of pathogenic flora and protect from intestinal infections, and stimulates the immune system and the synthesis of vitamins. Human milk contains numerous substances of which oligosaccharides have a clear prebiotic effect. The prebiotic approach consists of the administration of substances that are not hydrolysed or absorbed in the first part of the digestive system, and reach the colon to stimulate selectively the proliferation of resident beneficial strains.

HMO Market:

The global human milk oligosaccharides (HMO) market is estimated to be around USD 134.7 million in 2018 and is expected to reach USD 170.4 million by 2024. HMO is a bioactive complex sugar molecule, which promotes growth of healthy bacteria, such as bifid bacteria genus in human gut. It also helps improve metabolic activity in human body. In addition, incorporation of HMO in the formulation of functional foods and beverages not only promotes growth of healthy bacteria but also eliminates harmful microbes. The antimicrobial protection and prebiotic functions of HMOs make them a useful ingredient in various food products including pharmaceutical and medicinal food and infant formulas. Infant formula is the largest application segment in the global market. High infant mortality rate coupled with rising demand for human milk donors in North America is one of the major drivers for the HMO market. Growing demand for infant food especially for infants with non-lactating mothers coupled with strong presence of infant formula is expected to have a positive impact on regional market. Besides North America, Europe is one of the key markets for human milk oligosaccharides. The HMO is also useful for adults as it helps maintain health of the digestive system. The ingredient acts as a microbiota modulator and maintains health of the immune system. High demand for digestive health supplements among adults due to rising



concerns regarding gastrointestinal disorders and changing modern lifestyles have fuelled the need for proper nutrition and healthy food products, thereby augmenting the demand in this application. Rising health concerns and awareness regarding nutraceutical are expected to play an important role in driving the dietary supplements segment.

Conclusion:

HMOs are diverse, biologically active component that is responsible for the quality growth and development. HMO abide prebiotic properties, ability to enhance memory & brain development as well as high nutritional content, these qualities propel market demand of human milk oligosaccharides. Changing consumer lifestyles and rising concern regarding gut health coupled with increasing dairy industry is expected to augment product demand in dairy and pharmaceutical applications.

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OMEGA FATTY ACIDS AND PCOS.

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Polycystic ovary syndrome (PCOS) is one of the most common endocrine disease found in reproductive women which is mostly due to the hormonal imbalance. The cause of the disease is still unclear. The syndrome is characterized by chronic anovulation, hyperandrogenism and irregular menstruation. Some metabolic complications of PCOS are insulin resistance, hyperinsulinemia, obesity and metabolic syndrome. There is increase in androgen production, reduced sex hormone binding globulin and increased level of testosterone due to hyperinsulinemia and insulin resistance. Women's suffering from PCOS showed fertility problems viz. lack of ovulation and other beauty consequences like alopecia, acne, hirsutism, obesity due to hyperandrogenism.

Non-pharmacological treatment includes lifestyle and changes and weight loss are first line treatment. Food with anti-inflammatory properties improve androgenic profile of women. Polysaturated fatty acid (PUFA) particularly the type of omega-3 with important bioactive properties act as metabolic regulators. Long chain n-3 fatty acid has been founded to improve several disorders such as insulin resistance, lipid profile glucose, liver fat content and blood pressure in women with PCOS. Moreover, the cost, monitoring and side effects of omega-3 fatty acid are comparatively less than other medical treatment.

Sources of Omega-3 Fatty Acids:

- Soybeans (Roasted), Walnuts, Salmon, Canola Oil, Sardines, Chia Seeds, Mackerel, Flaxseed.

How Omega Fatty Acids are useful in PCOS:

- Balance Hormones:

Women suffering from PCOS show high level of cortisol. The oil containing omega fatty acids helps in reducing the level of cortisol which is a stress hormone and is also responsible for the increased weight.

- Management of testosterone level:

Excessively high level of testosterone is linked to most of the symptoms of PCOS. These omega-3-fatty acids helps to decrease the level of testosterone.

- Shrinkage of fat cells:

Fish oil concentrate contains two important fat molecules called EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). A study on mice was conducted where they were given high fat diet containing EPA. It was observed that there was a reduction in their fat weight and the size of the fat cell shrank. Experiments suggest that humans also benefit in similar way. EPA also suppresses the process of inflammation. The problem is that many of those who have PCOS are blocked into fat building mode because of dysfunction of insulin and other hormones.

- Insulin resistance:

Insulin resistance plays an important role in weight loss difficulties and they disturb the overall hormonal balance. They are the underlying causes of PCOS symptoms. The study of DHA in overweight people showed decrease in insulin resistance



- Lift depression:

EPA and DHA are important components in brain as they perform a multitude of critical functions. Depression is the most common symptom of PCOS. Depressed people have low level of omega-3-fatty acid. Medical studies show that adequate level of EPA and DHA are necessary for optimal brain function. Studies show that depressed women had 32% lower level of DHA as compared to non-depressed women. Higher level of DHA is important for better verbal reasoning, mental flexibility, working memory and vocabulary. Oil containing omega-3-fatty acid is an important personal health building program and they also reduce the risk of mania, dementia and Alzheimer like disease.

- Reduce heart risk in women:

Omega -3-fatty acid are important for preventing cardiovascular disease in women of all ages. Women with PCOS have high risk of developing heart disease as compared to other women. A healthy diet and daily exercise are obviously basic requirement for healthy heart but other additional supplementary food are also helpful. Medical studies have shown omega-3-fatty acid decrease the risk of cardiovascular disease.

- Clear fatty liver disease:

Studies show that 55% of PCOS women have NAFLD (non -alcoholic fatty liver disease). Fatty liver disease is not restricted to overweight women. Nearly 40% of women with NAFLD are lean. Omega-3-fatty acid helps in reducing liver fat content, triglycerides and blood pressure.

- Improves pregnancy:

Omega -3-fats ensures that a women's tissue contains a reserve of these fats for the development of fetus and the breast-fed newborn infants. Consumption of omega-3-fatty acid during pregnancy reduce the risk of premature birth and intellectual development of fetus. DHA is important for the development of unborn child.

- Helps menstrual problems:

Omega -3-fatty acid play a positive role in the prevention of menstrual problems and post-menopausal hot flushes

- Reduce stress conditions:

Omega -3-fatty acid helps to prevent helps to prevent the development of certain cancer particularly breast and colon cancer and possibly may reduce uterus cancer.

Thus omega-3 fatty acids are essential polyunsaturated fats. They cannot be manufactured by the body and must be consumed through food or supplements. Three types of omega-3s include ALA (alpha-linolenic acid), EPA (eicosapentaenoic acid), and DHA (docosahexaenoic acid). The benefits of EPA and DHA are in the news often. These omega-3 fatty acid are naturally found in fatty fish such as salmon, herring, sardines, tuna, trout, and mackerel. Studies suggest that supplementing 1200 mg of omega 3 fatty acids daily may be beneficial.

"So, let's fight this battle of PCOS and enjoy flawless skin, fertile health and eat like a normal person because we are worth it."

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Neda Forouhnia, Sakineh Shab-Bidarb, Kurosh Djafarian.

YOU MAY NEVER BE CERTAIN ABOUT CASTOR OIL, BUT SHOULD!

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The analeptic plants have a requisite role to take care of the healthy human life. The complexity of synthetic drugs and rebellion cost has guided worldwide research fellows to generate hub on the curative plant research.

Plant based conservative knowledge has become a recognized aid in search of nostrum and nutraceuticals. Today, according to World Health Organization as many as 80% of the world's population depend on long-established panacea for primary health care needs.

"The nature itself is the best physician" and one of its voluminous family Euphorbiaceae contains nearly about 300 genera and 7,500 species. Amongst all, castor bean plant has extensive traditional and restorative merits towards a salubrious circle.

"A herbarium is better than any illustration; every botanist should make one". Castor bean is an evergreen herbaceous and large shrub that outstretches 5 meters tall. It contains active ingredients that make it take central position in production of



several medicinal and cosmetic products that fight several ailments. It is customarily known as Arand or Erand. It has escaped cultivation and become enfranchised as weed almost everywhere in the world that has a tropical or subtropical climate.

According to the preliminary phytochemical study, *Ricinus communis* accommodate steroids, saponins, alkaloids, flavonoids, and glycosides in it. The seeds and fruits contain 45% of fixed oil, which consist glycosides of isoricinoleic acid, dihydroxystearic acid, lipases and a crystalline alkaloidricinine.

The Gas Liquid Chromatography study of castor oil showed the presence of ester form of following:

Ricinoleic acid	89.4%
Palmitic acid	1.2%
Stearic acid	0.7%
Arachidic acid	0.3%
Hexadecenoic acid	0.2%
Oleic acid	3.2%
Linoleic acid	3.4%
Linolenic acid	0.2%

The employment of the castor seed proteins has been reviewed for medical treatments since bygone times. The leaves have also been recommended to women for topical application as galactagogue. The leaves are said to be used in the form of a decoction or fomentation on sores, boils and swellings. Castor oil is commonly applied over the abdomen that aid in relieving flatulence in the children.

"Pharmacology is benefited by the prepared mind. You need to know what you are looking for".

Chronicles of profuse therapeutic activities of castor bean:

1. Bone regeneration activity-Ricinus communis polyurethane (RCP) has been studied for its biocompatibility and its ability to stimulate the bone regeneration. Results showed that RCP blended with calcium carbonate or calcium phosphate could promote matrix mineralization and are biocompatible materials. Incorporating alkaline phosphatase to RCP with subsequent incubation in synthetic body fluid could improve the biological properties of the RCP. The advantage seen in bone stimulated by RCP as compared to demineralized bone is that the former has a slower reabsorption process.
2. Antimicrobial activity-The different solvent root extracts of castor possess antimicrobial activity by using the well diffusion method against pathogenic microorganisms such as *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Proteus vulgaris*, *Bacillus subtilis*, *Candida albicans* and *Aspergillus niger*. The hexane and methanol extracts showed maximum antimicrobial activity whereas the aqueous extracts have no significant antimicrobial activity.
3. Immunomodulatory activity-The presence of tannins in the leaves significantly increase the phagocytic function of human neutrophils and resulted in production of a possible immunomodulatory effect.
4. Wound healing activity-The active constituent of castor oil produces antioxidant activity by inhibiting lipid peroxidation. The tannins, flavonoids, triterpenoids and sesquiterpenes present in the castor oil promotes the wound healing process which are responsible for wound contraction and increased rate of epithelialization.
5. Skin diseases/disorders- Castor oil is very effective when it comes to treatment of skin problems like sunburn, acne, ringworm, wrinkles and fine lines dry skin and stretch marks. It also prevents infections like warts, boils, athlete's foot and chronic itching. The oil is good skin moisturizer and disinfectant of wound.
6. Hair treatments- Castor oil is mixed with coconut or almond oil to initiate hair growth, thicken eyebrows and eyelashes. The oil boosts blood circulation to the follicles, leading to faster hair growth. The oil also has omega-6 essential fatty acids, responsible for healthy hair. The oil is also used for correction of bald patches and hair darkening.
7. Other medicinal uses - Castor oil is a great additive and powerful laxative that serves as remedy for ailments like Multiple Sclerosis, Pain from Rheumatism, Gastrointestinal Problems, Menstrual Disorders, Migraines, Age Spots, Skin Abrasions and Inflammation.

Future Panorama:

The multidisciplinary use of the active constituents of the castor bean reveals that it will be possible to find out new herbal products in the field of medical science or ethno-botanical science for the better health of the human being.

The antioxidant and free radical scavenging activities of phytochemical constituents isolated from this plant give us an



impression that the plant might be the future imminent target for a diversified panel of tumors and cancers. A systematic scientific approach from phytochemical either in the pure or crude form to modern drug development can provide valuable drugs from traditional medicinal plants. Development of such medicines with international safety and efficacy can give better and satisfactory treatment of various diseases.

Sanative effect of *R. communis* plant occupied a distinct place in the life right from the primitive period to till date and provided information on the use of plants or plant products as medicine. This plant has much novel potential which is yet to explore. The pharmacological activities reported confirm that the therapeutic value of castor plant is very high having a leading capacity for the development of a contemporary, secure, effectual and affordable drug in future. But it needs more elaborative study, pharmacological investigations, clinical trials, more exploration and public awareness for the best utilization of its remedial properties.

The industrial entrepreneurs also should come forward with new concepts and steps towards the best use of this potential curative plant.

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BCAAs: The Unsung Heroes of Nutrition.

Mr. Haabil Hirkani

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To have big bulging muscles and a perfect triangle shaped figure is something every man aspires to achieve. However, 'pumping iron' is not the only way this goal can be achieved. As rightly said by many nutritionists, "A healthy body is made by 10% work-out, and 90% by diet."

BCAAs are a niche in the Nutraceutical industry, widely used especially by those pursuing the art of body-building. BCAAs, or branch-chained amino acids are popular for people looking to lose fat, and gain muscle. Generally formulated as tablets, or as powders, they are an essential ingredient in many pre-workouts.

From the nine essential amino acids, leucine, isoleucine and valine are three that fall under the category of BCAAs. When a person is trying to lean down, the calorie intake is relatively low. Hence, the body enters a catabolic state. The body breaks down fat, some muscle, etc. instead of synthesising it, which is the anabolic state.

In the bid to lose fat, muscle loss also takes place as the body uses amino acids from the protein required to build muscle to produce energy. As an obvious fact, to increase the length of the muscle, for the muscle to grow, the rate of protein synthesis has to be greater than the rate of protein breakdown or muscle loss.

BCAAs account for 30-35% of the body's total essential amino acid content in muscles. Most of the essential amino acids get catabolised in the liver. However, the BCAAs, instead of getting catabolised, get oxidised in the skeletal muscles, helping in increasing the muscle mass. When taken by the oral route, the BCAA Leucine shows a peculiar property. It promotes muscle protein synthesis.

Another reason why BCAAs are included as a major part of pre-workouts is that they reduce fatigue, greatly increasing the intensity of one's workout. Serotonin is responsible for creating the feeling of tiredness. BCAAs reduce its production. Furthermore, BCAAs reduce soreness in the muscle following the workout. This helps the person to stick to their workout routine, without compromising the intensity.

Hence, if taken in proper doses, these rather unlabeled nutritional supplements should seriously be considered as an essential part of a balanced diet.

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NUTRACEUTICALS FOR PREVENTION AND CURE OF OSTEOARTHRITIS

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Introduction:

Osteoarthritis (OA) is one of the emerging diseases and ranks eighth among all musculoskeletal problems. According to World Health Organization (WHO) 9.6% of men and 18.0% of women aged over 60 suffers from osteoarthritis worldwide. 80% individuals with osteoarthritis have movement limitations, and 25% cannot perform their major daily activities of life.

OA is basically a disease characterised by the damage and loss of the articular cartilage of the joints, and hypertrophy of the underlying Bone. This damage is caused by the overexpression of enzymes known as metalloproteinases that degrade the cartilage matrix with the resultant loss of collagen and

proteoglycans, the building blocks of this tissue. The synthesis of these enzymes may be induced by the proinflammatory cytokine interleukin 1, which also inhibits the synthesis of new cartilage and induces the apoptosis of chondrocytes (the cellular component of cartilage) and the production of nitric oxide and prostaglandins. All of these factors may contribute to the destruction of cartilage that characterises OA.

A wide variety of nutraceuticals have been claimed to be of benefit in joint diseases. The main attractions of these agents are their lack of side-effects and the possibility that they may be able to affect beneficially the disease course rather than just ameliorating symptoms. Basically, NSAIDs are used for Joint Therapy. The widespread use of NSAIDs is a concern as they are associated with a high incidence of side-effects, particularly on the gastrointestinal system. It is estimated that at least 10–20% of patients experience dyspepsia while taking NSAIDs. It would appear, therefore, that none of the existing pharmacological treatments for the most common joint diseases are ideal. Therefore, nutraceuticals because of their less or no side effects can be an effective way in treatment of OA.

Herbal supplements used for OA:

1) Boswellia

Biological Source: Flowering plants of *B. serrata*, family Burseraceae.

Chemical Constituents: Boswellic acids.

MOA: Boswellic acids are specific inhibitor of 5-Lipoxygenase which inflammatory leukotrienes that cause inflammation.

2) Guggul

Biological Source: Flowering plant of *Commiphora wightii*, family Burseraceae.

Chemical Constituents: Guggulsterone.

MOA: Reduce inflammation by suppressing the activation of NF- κ B, a major pro-inflammatory compound. Further it also lower cyclooxygenase-2 (COX2) levels.

3) Curcumin

Biological Source: Rhizomes of *Curcuma longa*, family Zingiberaceae.

Chemical Constituents: Curcuminoids.

MOA: Curcumin acts on inflammatory pathways.

4) Green Tea

Biological Source: Fresh leaves of *Camellia sinensis*, family Theaceae.

Chemical Constituents: Epigallocatechin-3 gallate.

MOA: Protects human chondrocytes from inflammatory responses associated with the marked reduction of collagen-induced inflammatory mediators such as cyclooxygenase-2 and TNF in arthritic joints.



5) Hadjod

Biological Source: *Cissus quadrangularis*, family Vitaceae.

Chemical Constituents: Sitosterol, Ascorbic acid.

MOA: Influence in early regeneration of all connective tissues involved in the healing and quicker mineralization. Helps in the earlier formation of collagen fibres.

Marketed preparations:

1) Cosamin®ASU

Contents: Glucosamine HCl, chondroitin sulfate, avocado/soybean, *Boswellia serrata* and Green tea extract

2) Glucosamine Capsules by Himalaya.

3) HIMALAYA RUMALAYA GEL

Contents: Indian Winter Green and *Boswellia*

4) Hadjod tablets 250mg by Himalaya

Newer approaches:

Glucosamine sulphate transdermal gels: For increasing bioavailability and compliance.

Glucosamine sulfate is a naturally occurring chemical found in the human body and is in the fluid that is around joints. The purpose of the study was to develop transdermal delivery systems of Glucosamine Sulphate using polymer Pluronic F-127 (PF-127) and mucoadhesive polymer sodium carboxymethylcellulose in order to optimize its release profile, and the overall clinical performance. Glucosamine is known to be formulated in an oral dosage form, but it suffers from hepatic metabolism which greatly affects its bioavailability, in addition to its side effects on the gastrointestinal tract. Rheological studies was performed on the gel formulae, in-vitro release, and effect of 10% DMSO on rat skin permeation. Higuchi diffusion model was found to be the best fitted model for the release results. PF127 and Na CMC gels showed high permeation results, and 25% PF-127 gel showed no skin irritation or histological change of skin layers. The results obtained suggest the feasibility of designing a successful transdermal delivery system providing constant Glucosamine input and overcoming the disadvantages of oral administration.

An Anti-Inflammatory Topical Herbal Gels Containing *Withania somnifera* and *Boswellia serrata*:

The study is about herbal gels formulation of the *Withania somnifera* and *Boswellia serrata* extract using different polymers as the gelling agents and different evaluation parameters provides the effective anti-inflammatory activity to treatment of the inflammation, pain, arthritis etc patients problems. The focus on the current status of the therapeutic potential and phytochemical profile on the herbal anti-inflammatory agents. It also provides the better information regarding to the formulation and evaluation parameters of the novel herbal gel for anti-inflammatory activity and to provide the better therapeutic effects to patient compliance.

Conclusion:

A wide variety of nutraceuticals have been claimed to be of benefit in joint diseases, particularly OA and RA. Naturally occurring substances could provide optimal effects and can help in curing the disease as well as they are safe and easily available in nature.

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PANAX GINSENG: RESEARCH AND OPPORTUNITIES

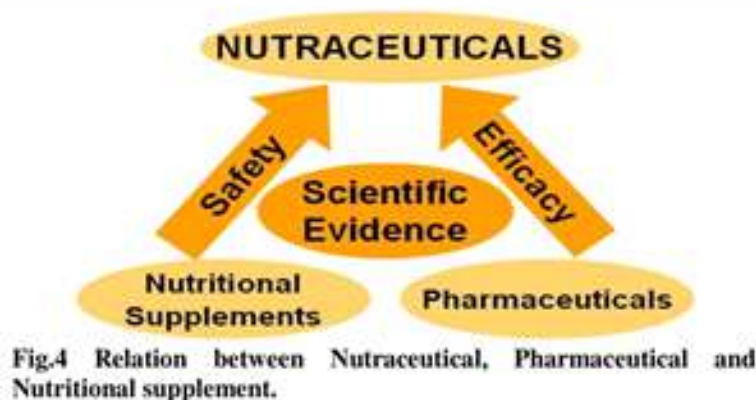
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Introduction: Nutraceutical is a substance that may be considered as food or part of food which provides medical or health benefits, encompassing prevention and treatment of disease. These may be delivered to the consumer as a dietary

supplement and/or as a functional food. They play a vital role in human health. The consumption of these products by the public is without a medical prescription or supervision. The importance of nutraceuticals is expanding globally in terms of scientific services, legal aspects and marketing strategies for health promotion, reduction of disease and health care costs.



Panax Ginseng is commonly referred to as 'GINSENG' and P. ginseng is mainly used to maintain the homeostasis of the body, and the pharmacological efficacy of ginseng identified by modern science includes improved brain function, pain-relieving effects, preventive effects against tumors as well as antitumor activity, enhanced immune function, antidiabetic effects, enhanced liver function, adjusted blood pressure, antifatigue etc.

Benefits:

1. Increases their energy and enhances their work environment by increasing physical and mental performance.
2. Decreases blood sugar level of diabetics
3. Increases the high-density lipoprotein.
4. Increase in hemoglobin
5. Increases protein levels in the body.

Side effects:

1. Headaches
2. Allergy
3. Insomnia
4. Digestive problems
5. Use in pregnant women and children should be avoided.

Dosing:

1) By mouth:

- For Alzheimer disease: 4.5 to 9g of Panax Ginseng root daily for 12 weeks
- For chronic obstructive pulmonary disease (COPD): 100mg to 6g of Panax Ginseng three times daily for up to three months
- For mental function: 200 to 400 mg of Panax Ginseng extract taken once daily or in two divided doses for 12 weeks.
- For erectile dysfunction: 200mg of Panax Ginseng extract starting 4 weeks before getting a flu shot and continuing for 8 weeks.
- For sclerosis: 250 mg of Panax Ginseng twice daily for 3 months has been used.

2) Applied to the skin:

- For premature ejaculation: Cream containing Panax Ginseng and other ingredients is applied to the glans penis one hour before the intercourse and washed off before intercourse

Interactions:

1) Alcohol Interaction:

- The body breaks down alcohol to get rid of it. Taking Panax Ginseng might increase how fast your body gets rid of alcohol.



2) Caffeine Interaction:

· Taking Panax Ginseng along with caffeine might cause serious problems including increased heart rate and high blood pressure.

3) Insulin Interaction:

· Panax Ginseng might decrease blood sugar level. Insulin is also used to decrease blood sugar. Taking them together might lower your blood sugar level. Therefore, the dose of insulin might need to be changed.

4) Anticoagulant interacts with Panax Ginseng

· Panax Ginseng might slow blood clotting. Taking Panax Ginseng along with medications that also slow clotting might increase the chances of bruising and bleeding. Medications which slow blood clotting include aspirin, warfarin, ibuprofen etc.

5) Stimulant drugs interact with Panax Ginseng

· These drugs speed up the nervous system so one can feel jittery and speed up your heartbeat. Taking Panax Ginseng along with stimulant drugs might cause serious problems like increased heart rate and high blood pressure.

Genetic diversity

There are currently no identified cultivars of American Ginseng but efforts in selection for improved horticultural characteristics have been initiated. This is in contrast to Korean Ginseng where a selection of pure lines over many years has led to improved varieties with enhanced growth, root quality and genoside levels.

Future avenues for research:

There are many opportunities for research that can provide a better understanding of the genetic and biochemical basis for its reported health-promoting activities. As a step towards ensuring a more uniform end product for use by consumers, more consistent levels of genosides and other active metabolites need to be achieved.

Advancements in molecular breeding and biotechnology which have been developed for many agricultural crops have not been utilized for Ginseng.

Furthermore, research on gene expression and gene regulation can provide useful information on the roles of specific proteins/enzymes that may be involved in the pharmacological activity of Ginseng.

Conclusion:

· With a global expansion of the health food market, ginseng is still considered to have the potential for market expansion.

· If a variety of functional materials with ginseng or health foods are developed, it is expected to form world's largest health food market.

· It is important for "Ginseng" brand to be recognized by the market and consumers.

· We hope that ginseng, one of the treasures from nature, continues to promote the health of mankind and improve the quality of life.

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LEGAL DIFFERENTIATION AND REGULATION OF NUTRACEUTICALS.

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Abstract:

A Nutraceutical can be largely summed up as a specific health-benefitting food which serves to improve; health, well-being and/or quality of life of a person, through the prevention or treatment of one or more diseases. This review attempts to explain the current scenario in the regulatory avenue of Nutraceuticals in India and culminate the need and purpose of legal segregation of the same. This review also focuses on legal differentiation in India while also comparing the same with the legislations in USA.

Introduction:

Food Safety and Standards Authority of India (FSSAI) is the autonomous body established under the Ministry of Health & Family Welfare, Government of India, under the Food Safety and Standards Act, 2006 which differentiated proprietary food from functional food. Through this act, food was classified under the following heads: Novel foods Genetically modified food Proprietary food Standardized food Foods for special dietary use Functional foods/nutraceuticals/health



supplements

Discussion:

Various regulations were brought in through the Food Safety and Standards Act, 2006 with respect to functional foods. Later, The Food Safety and Standards (Health Supplements, Nutraceuticals, Food for Special Dietary Uses, Food for Special Medical Purposes, Functional Foods and Novel Food) Regulations, 2016 had been notified by the FSSAI on 23 December 2016. According to this notification, the following are the regulations a nutraceutical must comply by :

1. Mention : (i) 'NOT FOR MEDICINAL USE' (ii) not for parenteral use (iii) "FOOD FOR SPECIAL DIETARY USE" / "NUTRACEUTICAL" (iv) common name of the nutraceutical (v) precautions, side effects, contraindications, and product-drug interactions, as applicable (vi) 'Keep out of reach of children' (vii) "For weight control and management, if applicable (viii) "not to be used by pregnant/lactating women and infants, unless medically advised"

2. Shouldn't exceed the stated recommended daily usage.

3. Can be sold in the food-format of granules, powder, tablet, capsule, liquid, jelly or gel, semi-solids and other formats and may be packed in sachet, ampoule, bottle.

4. Ingredients specified in following Schedules may be used:

Schedule I lists Vitamins & Minerals and their permissible overages.

Schedule II lists acceptable forms of Amino Acids, Nucleotides. Suitable esters, derivatives, isomers, and salts of amino acids that may be used.

Schedule III lists RDA of Vitamins & Minerals.

Schedule IV lists 400 Plant or Botanical ingredients and permitted range of usage for adults.

Schedule VA - VF lists food additives and food with added probiotics and prebiotics.

Schedule VI lists approved ingredients as nutraceuticals.

Schedule VII lists strains as probiotics (live micro-organisms).

Schedule VIII lists of prebiotic compounds.

5. A food business operator shall apply to the Food Authority for approval which shall be accompanied by documented history of usage of at least fifteen years in India, or thirty years in the country of origin.

6. The viable number of microorganisms in the food with added probiotic ingredients shall be $\geq 10^8$ CFU in the recommended serving size per day.

7. Shall not claim that the nutraceutical has the property of preventing, treating or curing a human disease.

8. For the ingredient for which the usage levels have not been specified, the usage level based on relevant scientific data should be adopted and the documentary evidence of the same must be retained.

9. Some ingredients like hormones, steroids, willow bark extract are not permitted as they exhibit properties of a drug. Fluoride, Potato Protein Isolate are not permitted due to safety issues.

Due to these regulations, it becomes hard for companies to market their respective products without a medicinal license. They could then either do research and obtain a patent or not do any research at all. However, the former requires an intractable amount of expense and time (Around 250 M dollars and 10 years) and the latter is preferred as it relatively requires only a fraction. This indirectly triggered the nutraceutical industry to gain extensive prominence and growth.

According to Frost & Sullivan (an American market research company), Indian Nutraceutical market is projected to grow to US \$4 Billion in 2018

In the United States, under the Dietary Supplement Health and Education Act of 1994, evidence of nutraceutical safety must be reviewed, not approved by the FDA, prior to their marketing. The supplement must be deemed safe by the DSHEA before it is marketed. The FDA is responsible for taking action against any unsafe products after it reaches the market.

Dietary supplements that were already marketed in the United States before 1994 do not require approval by FDA.

In brief, the various steps in the product analysis include:

1. Developing document extracts, authenticating the same by respective authority

2. Collection of Sample, in the presence of witnesses

3. Sample dispatch to authority

4. Food analysis

5. Further action plan by designated officer if analysis is not complete in time.

6. Legal Proceedings (holding enquiry, appeal procedure, hearing, etc.)

Conclusion:

The Indian customer base, especially those of higher socio-economic status look for supplements to achieve a balanced nutrition. The increasing obesity rates, cardiovascular disorders, deteriorating food habits and stressful lifestyles of people



also incline them towards these supplements.

Pharmaceuticals have governmental sanction, are regulated and can be potent. On the contrary, Nutraceuticals are neither. However, they aren't without risks. There may be contraindications, adverse side effects, drug interactions, etc. Hence, it is always advisable to consult the physician regarding the same.

The regulation of Nutraceuticals is essential as it avoids malpractices. However, one can say that further regulation would slightly discourage the nutraceutical industries. As they are less or hardly potent, they are mostly safe to use. Safety regulations must be emphasized to a greater degree.

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**WITH BEST COMPLIMENTS
FROM
MRS. MEHER BABURAJ**



THE MARKETING PERSPECTIVE

Mr. Shirish Phansalkar, Global Marketing Head at Raks Pharmaceutical Pvt Ltd, shares his view and experience about Marketing of Pharmaceuticals.

1) Could you please elaborate on your career path?

I had joined the industry way back in 1993 and from there the journey till today has taught me a lot and I have witnessed the transformation of pharma industry as whole. I started my journey in 1993 in Torrent Exports Ltd, as Assistant Exports Manager for 2 years. From Torrent Exports Ltd I later joined Zydus Cadila Health care in Russia. I was in Russia for 4 years based in Moscow then St. Petersburg, from St. Petersburg I used to look after the complete North-west region of Russia to promote all the finished formulations. Then I came back to India and joined the API industry Zydus Cadila Healthcare and worked there for 4 years. Then I joined Hetero Drugs Ltd as Assistant General Manager. Hetero International was a mixture of finished formulations and API in finished formulations, and we concentrated more on Antiretroviral products. After spending about 4 years there I jumped over to Kopran Limited and worked as General Manager for 4 years. Now I am currently working with Raks Pharmaceutical Pvt Ltd, looking after Global Marketing & Business Development for API's manufactured at Raks Pharmaceutical (sister concern of Amneal Pharma - US based Generic Co.)

2) What is the job profile of Global Marketing Head?

The basic job of global marketing head is to first identify the market, but before that we have to identify what are the strengths and weakness of

one's company, which are the products that will give you the top line i.e. profit and bottom line i.e. the revenue, expenses. Depending on strength of product you have to identify the market, the customers. In API situation target would be finished formulator i.e. any company like Sun, Cipla etc and for finished formulation target is going to be the doctors because ultimately the products which will give you business is based on prescription.

3) What skill set must one have to be successful in marketing field of pharmacy?

There is nothing called success, success is a formula, success is a story that you set yourself. Success comes through hard work, success comes through homework, success comes through understanding. You need to have a clear idea about what you want to do and how you want to do it. You need to have a layout of a plan about what you want to do in your life or in at your job. Evaluate your own strength and weakness. In order to be successful, you need to maintain a clear and meticulous thought process. These are the basic keys to the doors of success.

4) What advice would you give someone pursuing a career in marketing?

Well as of marketing is concerned, gone are the days of stereotype marketing, you have to be innovative, you have got to understand the market requirements, understand the customers requirements. The younger generation is much more knowledgeable than ours. There has been a revolutionizing progress in the field of medicine and marketing both. The key is to keep yourself updated with these changes, and to innovate and ideate newer strategies and making yourself stand apart from your competitors.

VESCOP WHIZ KIDS

our academic toppers



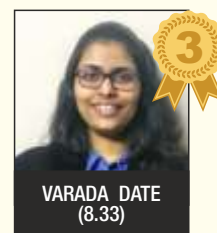
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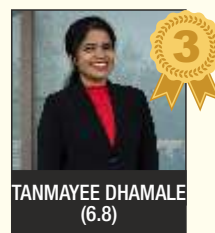


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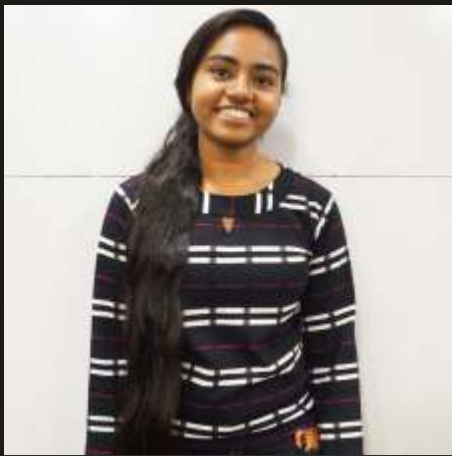


Quality Assurance



Pharmaceuticals

Rx ACHIEVEMENTS



MEHENDI 3rd

Designs beyond the creases of your palm.



SEAL DESIGN 3rd

Because at the end of the day authenticity is the key to everything.



WORDSWORTH & REPEAT - O - MIN 2nd & 3rd

Words can be whatever you want them to be. The question is how many?



BUZZWORDS 1st

If all that the universe could offer were words, which ones would you choose?



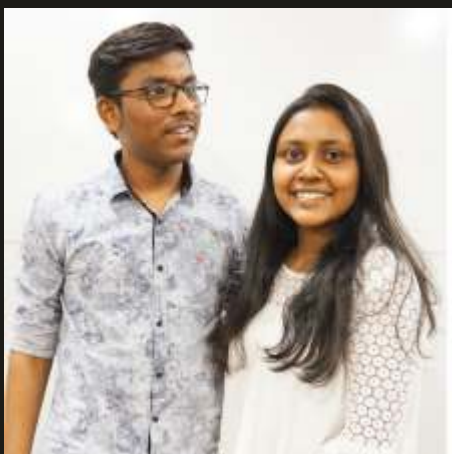
CANDLE DECOR 1st

Would you burn yourself up to light the way for others?



SUDOKU 2nd

A race against time and numbers. 81 boxes to victory



MATCH THE CHORD 2nd

When pieces of a puzzle come together, miracles come into existence.



MEME MAKING 3rd

Is your real-life meme worthy? Let's ask these meme lords.



CULTURAL CANVAS 3rd

A medley of colours, a melange of lives.



JUNK JAMMING 1st

Take a closer look. Music is what lies beneath



JUGAL BANDI 2nd

The true essence of music lies in synchronised harmony.



MONOACTING 1st

All the world's a stage and the only way to survive it is to act through it.



OUR STORY 2nd

Three people. Three moods. One story. Our story.



FACE PAINTING 1st

A medium to deceive or one to unveil?



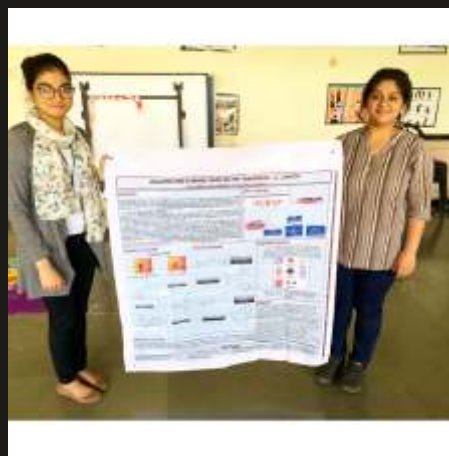
SHOWBIZ 2nd

If Netflix and chill could be a profession these three would be millionaires!



GROUP DANCE 1st

Why be a lone star when our constellation can put the galaxy to shame?



POSTER PRESENTATION 1st

Knowledge and wisdom are the stairways to success.



CULTURAL 3rd

Infinite talents. 18 wins. 1team. VESOP.

OTHER ACHIEVEMENTS



TABLE TENNIS 1st SINGLES & DOUBLES

Turning tables and turning heads



Rink Football 2nd

Smaller arenas, bigger passion. The passion for football.



Throw ball 3rd

Not your ordinary game of catch. Better hope these girls ain't aiming for your head.



Aesthetica 2nd

Art begins where contemplation ends



Literati 2nd

Language is the most powerful weapon known to mankind.



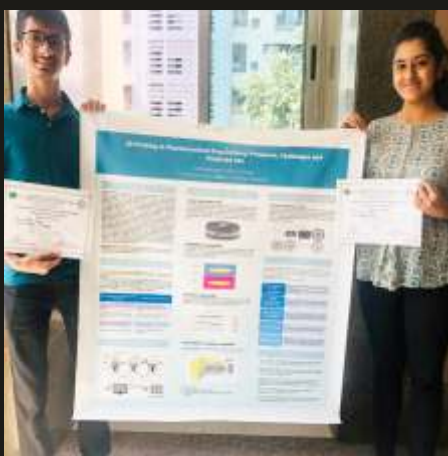
Chem-o-chrome 2nd

In every sphere of life, the contribution of colours is priceless.



Chem-o-doodle 2nd

If pictures could talk, these three would be their voices.



Synapse & Isthmus Urrja 1st

Knowledge and wisdom are the stairways to success.



Synapse & Isthmus Urrja 2nd

Knowledge and wisdom are the stairways to success.

HEADS' TALES

Leading the way, leaving footsteps for tomorrow..

Student Council

President: Anushka Rajesh

It is a truly gratifying experience to have had the opportunity to serve as the President of the Student Council this year. It has been a year of many highs and many challenges, but the best part was how we got through it all as ONE TEAM. I think I was very lucky to head a Council that was always so supportive of me. The work the Council puts in behind the scenes of every event, is the reason why it was a very successful year and I'm indebted to everyone who thought me worthy of this post and stood by me throughout.

Secretary: Nikeeta Palande

"Leadership is not only making others better in your presence but also making sure that your impact last even in your absence." This is something I experienced after my year of being the Secretary 2018-19 of VES College of Pharmacy, a post introduced for the first time. The kind of support I got from my teachers, my juniors, seniors, and batch mates was astonishing. In all honesty, I didn't plan on taking up this post, but when I did, I was glad I didn't miss out on this opportunity. I gave my heart and soul to working, and tried my best to justify this post, and I sincerely hope I have satisfied others expectations as I have done mine. I learnt a lot out of my tenure and this was an experience I'll cherish and look back upon even in my coming years.

IPA

Cultural Head: Asmita Choithramani

The Cultural Committee, the heart of IPA-MSB-SF, is the single largest platform for various cultural activities for all pharma buds in

Maharashtra and I'm proud to be heading this committee, for the year 2018-19. My tenure of 3 years at IPA has moulded me into a better individual, enhanced my multitasking skills, encouraged networking and has brought out the creativity and nurtured and prepared the inner me. It's been an overwhelming journey and I'm glad I was a part of it.

SEO Head: Samruddhi Borate

We have always heard about the gap between Industry and Academia. The Student Exchange Committee strives to bridge the gap between the two and I am extremely proud to be heading such a committee. This experience has been too overwhelming to pen down in words. I will always be thankful to IPA-MSB-SF to be the sole reason for the amount of exposure and industry contacts that I have collected in the past three years. We are directly linked to the industry, and being undergraduate students it has always been tough for us however we have always faced new challenges with enthusiasm, positive attitude and have successfully managed to come out stronger. SEO committee will remain in my heart always and forever.

Finance Head: Abhishek Datta

From being a council member in my first year to the interviews for IPA-MSB-SF for my Finance post to becoming the head of my team was a big opportunity which was only possible because of VESCOP. This 3 years of my IPA-MSB-SF tenure has been the most valuable and a period full of experiences. Signing off this year has been really heartbreaking but yet satisfying. Overall thanks to all my college teachers who supported me during this time and our principal who has been extremely supportive.



Rotaract Club

President: Rishabh Chaube

Being a leader means not just leading a community like a boss but leading the entire team towards a path from where they find the way to their success and dreams. My journey as a leader was one of those experiences which taught me much more than what I expected. I stepped up as the 3rd President of Rotaract Club Of VES College Of Pharmacy and it was that phase of the club when even being one of the newer clubs it had achieved a lot in its past 2 years. So it was a responsibility to maintain the name and fame of the club and also work hard to achieve more. Facing new challenges daily and understanding more than 80 brains and their abilities was a task. Apart from leading its the duty of a leader to constantly search and identify newer talents and give them an opportunity to explore more. Today when I look behind at the day when I was elected as the President I perceive that I was fortunate enough to have such a great team who helped me accomplish all my goals. Today the Club is one of the well established Clubs in the district and people look at us as with more hopes. And the spirit of Rotaraction is such that I still see it achieving more in its upcoming years. The path is never free from hurdles but the one who walks through such path is called an achiever. One last thing I would like to say is that 'Teamwork is the dreamwork and a team player stays and plays longer than others'.

PHO

Sanjana Nair

I decided to join the PHO committee as a naive first-year student. The work that this committee did, and the goals it had, inspired me, and I realized instantly that I wanted to be a part of it. Looking at that day in hindsight, I cannot help but feel proud of my decision. The three years I

have spent working for this Committee have been filled with lot of hard work and immense dedication. The time I have spent working for the cause has bestowed on me amazing rewards and success. Every campaign that we undertook, every meaningful interaction that I had with people on this journey, has given me a sense of purpose and fulfilment. If I could, I would do it all over again in a heartbeat.

Alumni

Alumni Student Head: Nida Memon

I believe our college is like a tree; where we all are different parts of it. I Nida Memon am the Student Head of the Alumni Cell. I realise that, being the student head isn't about being better than anyone else. It's about having the trust of my team to organise and represent them with honesty and enthusiasm, whenever called upon. I have the compassion to listen, the ability to work hard consistently, yet have the time for enjoyment once in a while. The key to the meet's grand success was good communication and additional efforts put in by my team as a whole.

Institution's Innovation Council

Student Head: Neha Dembrani

"Let us make our future now and let us make our dream tomorrow's reality" "The path to success is always achieved when we have Dreams, Determination and Dedication", is what we IIC members believe. Throughout the year, we have worked hard and it really makes me happy to see that we got through the year as one successful committee, well appreciated by all. As the head, I don't think there is anything that could have made me more proud.

PHARMA NEWS FLASH'18

@Mount
SinaiResearchers
artificially generate
immune cells integral
to creating
#cancervaccines

FDA approves first-of-its kind
targeted #RNA-based
therapy(Onpattro infusion) to treat
a rare disease, #polyneuropathy.

@FDA approves
first treatment
using Lynparza
(olaparib
tablets) for
breast cancer
with a #BRCA
gene mutation

New research paper shows
that @AstraZeneca has
achieved greater than four-
fold improvement in
#R&Dproductivity

Researchers @HarvardJohnA.Paulson School of Engineering and
Applied Sciences (SEAS) have developed an oral delivery method
that could dramatically transform the way in which diabetics keep
their blood sugar levels in check. #DeliveringInsulinInAPill

@Roche to acquire
Flatiron Health to
accelerate industry-
wide development
and delivery of
breakthrough
medicines for patients
with cancer

The #Nobel Prize in
Physiology or
Medicine 2018 was
awarded jointly to
@James_P_Allison
and @Tasuku_Honjo
"for their discovery of
cancer therapy by
inhibition of
#negative_immune_re
gulation."

@FDA highlights
record-breaking
number of #128
generic drug
approvals in
October'18

@GSK reaches agreement with @Novartis to
acquire full ownership of
#ConsumerHealthcareBusiness

FDA permits marketing of
#artificial_intelligence-based device to
detect certain diabetes-related eye
problems

SPECTRUM OF COLORS..

Red the colour of rage
The colour that comes up
every Monday
It's the colour representing
our epitome foundation
Our very own rotaract club
shielding the colour
on its shoulders.

#RED

Green is the colour
of our institution,
this colour spreads bright
across our hearts.
Bright green ID cards represent us,
fights with Watchman
over it is a saga of its own.
Healthcare and well being,
our PHO raising the green flag high.
With blood banks and
awareness they raise the bar
each time high

#GREEN

Yellow the colour of happiness,
this colour is the metaphor
to each vespicians feelings
during the days of spectrum.
It's yellow when the
lecture gets cancelled,
it's yellow when our
favourite teacher comes in.
Yellow is the light we all
vespicians, our teachers,
non teaching staff and
principal ma'am carry in our
hearts when we light the
lamp before every inauguration

#YELLOW

Black as dark as it sounds
it highlights the battles that
vescop has conquered.
From antirragging to
gender equality, this institution
has taught us to recognize and fight.
To recognize and eliminate
these black dark concepts
of inequalities, vespiscop has proudly
eliminated these catastrophies

#BLACK

White signifies peace to the world,
for vespicians it signifies
the peaceful battles of
chemicals on our white
shiny labcoats.
Our white bright labcoats
are our respect and our honour
we wear them with pride
and alot of laughter.
White, is the colour of innovation
it is the colour of our very
own IIC committee
It stands tall waving the flags of
innovation and entrepreneurship,
bringing in success and honourship

#WHITE

Blue colour is our every Monday ritual,
sleepy heads dugged into
incomplete journals sum
up the Monday blues.
Although no Monday of
our EVEN sem seems a Monday blue
with spectrum and Rx we dance
it through. The color of IPA logo.
Proudly we shall wear our spectrum
hoodies covered in the depth of blue,
our council will walk like those
warriors guarding the golden
days of our spectrum our honour.

#BLUE



LITERARY SECTION



Slipping into sleep, as your vision fades, All the
vibrant ones leave for the night, but a loyal
one stays.

Nemesis of white, but paternal to grey,
A slender streak that dominates &
demarcates.

Black is DEFINED.

It'll ruin the painting, let black not seep She
paints her skin, hiding black deep, He lacks his
family jewel, he's labelled the 'black' sheep,
Scared and threatened,
to themselves they'll keep.

Black is SUPPRESSED.

A technological black mirror is tomorrow's
dazzling ray, Black money, yes,
it's the talk of the day.

For racial despise, limitless have to pay.
Through a medley of colours, congealing its
way, Black is PRONOUNCED

As the proud black panther moves without
slack, When the white chalk strikes the board
of black, Without which the scintillating
stars lustre lack.

This misunderstood hue chooses its own track.

Black is UNIQUE.

Black is BEAUTIFUL.

- Sayli Kharkar
T.Y.B. Pharm

RENEWED HOPE

Where am I?

Who am I?

Guess who?

An Alzheimer's patient?

No! I am the Creator's creation!

Dying to fulfill my parents' ambition.
With a heavy heart and an anxious mind,
I feel like a weed in the farm of life.

Burdened with emotions &
whiplashed with wishes,

I hope the Lord plants a seed in the
times of strife.

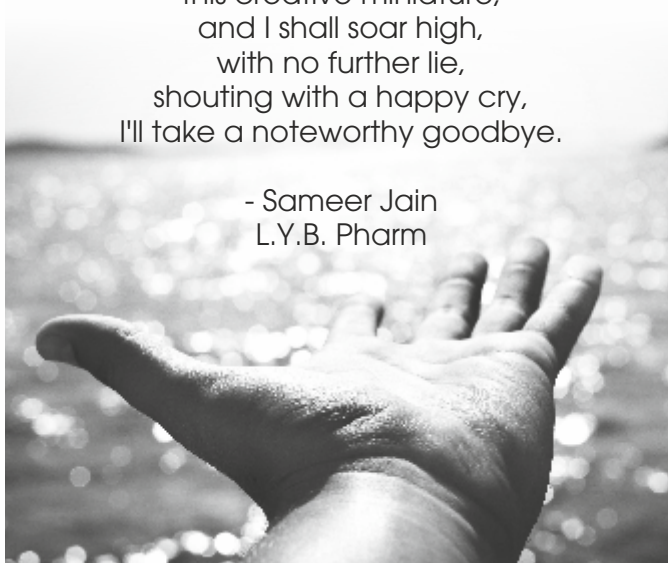
Life is a wave of crests & troughs, someday,
I'll receive a changed perceptual rope,
my breakdowns will turn into breakthroughs,
my despair will turn into hope.

May my narration be a heartfelt confession,
self-realization will lead to a novel invention,
in the expectation of an Einstein a
Shakespeare will die,

may literature be a saviour to
this creative miniature,
and I shall soar high,
with no further lie,

shouting with a happy cry,
I'll take a noteworthy goodbye.

- Sameer Jain
L.Y.B. Pharm





COMFORT IN BEAUTY

Let me introduce you to the new definition of beauty...

It no more starts with 'B'.

It's more than what you see.

It no more lies in clear white skin.

It now lies in melanin rich chins.

It has now got freckles, scars and pores.

It is now okay with being explored.

Not caring about everyone having smooth silky strands.

It now feels confident even in rough dreadlock lands.

Rather than being a size zero, two or so.

It now believes in its curves,

extra skin and stretch marks for sure.

It is raw, with a hint of awe,

that no one has yet tried to kill with a chainsaw.

I believe you were already acquainted with it,

but never tried to welcome it.

So here I am to say that it's about time you saw.

- Kirti Sawant
T.Y.B. Pharm

ETHICS & HUMANITY

'The body leaves the world but the soul never dies' Energy is never destroyed, it transforms. In the memory of our revered founder Hashu Advani ji, I light the incense sticks of his ethical and humanitarian principles; and wish that it leads to a deeper foundation into people's minds and hearts. A man is made up of the thoughts and the values he has. How beautiful the world would be if there was no religion other than that of humanity. Ethics and humanity are tested with time, situations where people compromise on them and some adhere to their deep-rooted ethics. The world has witnessed great humanitarians like Mother Teresa, Martin Luther etc. One amongst them is Hashu Advani ji, who posthumously lives in the heart of many because of his principles. Our ethics and humanitarian principles must be unbiased and not compromised. I think if we introspect, we can analyse ourselves and fill the gap between who we really are and who we really want to be. The characteristics and qualities of a person resonate with the ethics and humanity. When we work, we should think we are doing it for the Lord and not for the people. Then and only then can we pray and wish for our enemies or the ones who hinder our way. Wisdom is the key which can unlock the doors of integrity, peace, acceptance, friendship and love. What would the world look like with a humanely touch to it? What if we all abide by ethics willingly and voluntarily? The world will indeed be a beautiful place to live in. Skill development, uplifting and promoting activities for constructive growth and development will be as fast as our mobile data speed to be able to support selflessly, empathise and be willing to spark people's hearts and minds is noteworthy and satisfactory.

**'WORLD WITHOUT CRIME...WORLD WITH PEACE AND INTEGRITY
...THE WORLD WITH A SOUND THOUGHT.'**

- Sameer Jain
L.Y.B. Pharm

IT'S OKAY...



It's okay to worship a female deity.
While tramping and ridiculing the female dignity.
It's okay to be able to afford dowry.
But shelling out for education; it happens to be a luxury.
It's okay to talk about gender equality.
While still treating our sons and daughters differently.
It's okay to point fingers at the western culture.
While still vying for their fair complexion.
It's okay to propagate world peace.
While ammunition is being released.
It's okay to preach.
Yet not follow all that you teach.
It's okay, that's the way of the world', people will say.
Even though you know it's not right.
So, take a stand!
Banish that mole of hypocrisy that resides within us.
And then only, will it truly be okay.

- Sita Patel
T.Y.B. Pharm



When I was a kid, we had this antique cupboard in my bedroom. Just like olden days, it had these two moderate sized door knobs, a shade darker than burnt sienna. Most of my school life, I remember hanging my identity card around the knob. I don't really recollect who started it but I did it for as long as I can remember. So, it was a very common instance to have previous years identity cards hung around the knob too. Last night while cleaning up all the clutter I had left behind, the spade in my hand accidentally hit the table and created the same sound the identity cards used to create when it hit the cupboard. I instantly turned around towards the door knobs and they lay empty. I stood there for a bit too long and kept staring. It made me realize that even though sometimes we are afraid to embrace changes, they embrace us rather swiftly. Tomorrow the sky might be the same shade of blue, the wind might be as soothing as well, two worlds apart a sixteen-year-old might be reciting poetries of Sarah Kay like that's the only thing that is keeping her alive. And amidst everything you would probably find me trying to recreate every last bit of magic, my memories and my constant need to be shrouded with nostalgia allow me to. Because didn't you once say, most things we usually give upon can be saved. We just have to try.

Priyanka Ghosh
S.Y.B. Pharm

DECEIT

Now.

Ayesha is sitting on the floor, in a parking lot near her car, her head resting on the door of the driver's seat. She looks numb, emotionless.

One hour before. The sound of a car approaching the parking lot can be heard, as Ayesha is sitting inside her car, her hands on the steering wheel. She is sweating profusely, while looking toward the entrance of the lot. Her hands are trembling. The car enters inside, and halts at a parking spot, a few feet away from Ayesha's car.

Ayesha's gaze is fixed over the car that can be seen through the rear-view mirror. She is breathing heavily while sweating. She wipes off the sweat from her forehead, and takes her left hand near the dashboard trying to grab something. No one gets out from the car for a few seconds. Ayesha is continuously looking at the car with fear in her eyes. The car door opens and the driver steps out. He is wearing a mask that is covering his whole face, but not his eyes. He opens the door behind the driver's seat and forces a girl of around eight years to come out. Her hands are tied behind her back, and her eyes are blindfolded. She starts crying, but the man slaps her on her right cheek. He then takes the cloth hanging around her neck, opens her mouth, and inserts the cloth back inside. The girl can be heard muffling. The guy holds her right arm, and takes her to the centre of the parking lot. Unknown to Ayesha, her phone that is kept on the front passenger seat, starts vibrating. The

time is 2:57 am. There is a duffle bag kept on the same seat. "Pick up the damn phone, Ayesha!" Vicky murmurs to himself while trying to call her. Vicky is roaming in the living room in random patterns, his left hand holding the phone to his ear, and his right hand on his forehead. A photo frame of Vicky, Ayesha, and that little girl is hanging on the wall in front of the couch. All seem to be happy in the picture. Vicky hurriedly takes some keys kept on the table near the couch, and leaves the apartment. Back in the parking lot, Ayesha takes her phone and keeps it in the right pocket of her jeans. She takes a gun kept on the dashboard and hides it behind her jacket. She then takes the bag and gets out of the car. The guy removes the blindfold from the girl's eyes. The girl looks at Ayesha and tries to free herself from the man's clutches. Ayesha looks at the girl. She runs toward the girl, with tears in her eyes, but suddenly stops when she sees the man pointing a gun at her. "If you want her back, give me the money!" said the man. Ayesha kept the bag down, and opened it. "Go back and stand near your car!" ordered the man. Ayesha quietly followed his instructions. The man took the girl near the bag. He saw the bag, which was full of money. He released his grip on the girl, and she went running to Ayesha and hugged her, tears rolling down her eyes. Ayesha loosened the rope on the girl's hands and gestured the girl to be quiet. She then took out the gun hidden behind her jacket and slowly approached the man, pointing the gun towards him.

Vicky was driving at the speed of 120 kilometres, while still trying to connect to Ayesha, but in vain because of connectivity issues. He looks at his watch. It's 3:13 am.

The guy, who was busy counting the note bundles was startled when he heard a clicking sound of the gun. He looked up to find Ayesha pointing a gun at his head. He slowly raises his hands. Ayesha's hands start trembling. The man smiles, and in a snap, he knocks the gun off her hands, and bends it hard. He wraps his left arm around her neck, and points his gun on her head from his right hand. Ayesha is struggling to free herself. Her hands are trying to loosen the man's grip. The man hits her on her head with his gun, knocking her unconscious. He loosens his grip, and Ayesha falls down on the ground. The girl approaches her, but the man gives her a stern look, and she gets back near the car. The man stretches his neck, and bends down to zip the bag. He takes the zip and turns to approach his car when he finds Ayesha standing with her gun pointed toward him. Before the man does anything, Ayesha shoots him in the head. The man gets a setback, and blood starts oozing out from his head. He falls down on his back. Ayesha approaches him, and pulls him by the collar. "This was not the deal! You got what you deserved" murmurs Ayesha. She gets up and throws her gun away. She then bends down and takes the man's gun. "Mom!" shouts the girl standing near the car. Ayesha looks at the girl. "Rhea!" sighs Ayesha. Rhea wipes her tears and runs toward Ayesha. She is smiling. Another gunshot is heard, and Rhea gets a setback. Blood starts oozing out of her stomach region. Ayesha approaches her. Rhea looks at her. "I Am! Not! Your! Mom!" exclaims Ayesha, pressing hard on Rhea's wound. Rhea is shouting and crying in agony, until a moment comes when her voice goes silent.

~~~

Now.

Ayesha is sitting on the floor, in a parking lot near her car, her head resting on the door of the driver's seat. She looks numb, emotionless. A bike approaches the parking lot. It's Vicky. He stops the bike, gets down, and runs toward Ayesha, but his steps gradually slow down when he sees the area surrounding the car. Rhea is lying down on her stomach, the area surrounding her covered in blood. The man is lying on his back, blood still oozing out of his head. Vicky covers his face with his palms. He gets down on his knees and holds Ayesha's face. "What happened, Ayesha?" There's no response. "Ayesha, tell me what happened!" shouts Vicky. Vicky crawls over to Rhea, and turns her around. The innocent girl's eyes are now closed. "Rhea! Wake up! Please!" cries Vicky. "Tell me what happened, Ayesha!" "You want to know what happened? That bloody kidnapper killed our daughter in front of my eyes! He approached her, pressed her stomach hard, and made her cry until it was silent everywhere! That is what happened here! You still want to know more?" Ayesha snaps back. She starts crying. Vicky gets numb. There are tears rolling down his eyes. Vicky kisses Rhea on her forehead.

He sits down near Ayesha, his back resting on the car door. After a few minutes, Vicky composes himself, wipes off his tears, and holds Ayesha's hand. Ayesha starts to cry. Vicky stops her from crying, and wipes her tears.

"It's okay!" says Vicky. Ayesha hugs him, rests her head on Vicky's chest, and looks with a devilish smile toward Rhea.

- Ashish Chawla  
L.Y.B. Pharm



# PURPOSE OF ART IN SOCIETY

Art in most of its forms is absolutely wonderful and shows a great variety in what it is used for. The artist can use it to capture the most beautiful moments or express themselves in a manner that's not possible otherwise, about positive and negative things likewise. Art makes someone happier or gives impulses to think, that kind of art is the most important one and also my favourite. Art makes people think, that's sensational, shocking, and offensive and gets a lot of critic, because it steps on just the right toes to leave people uncomfortable and knowing that the artist might be right and something in our society/ way of thinking/ politics/ world/ etc might be wrong.

Art is something that's not just for entertainment but also to criticize and be political. Art can be for entertainment, inspiration, expression and motivation. It can be performed inside four walls, a royal theatre, a dome or even on the streets.

On the other hand, art in any form itself is like an open book of the artist's life for millions of people, most of the artists find their own art unimpressive. For those who do not have interest in Art, a successful artist has money and fame which they think can be source of happiness while Artists put themselves under unimaginable pressure to present a new side of them. The

biggest critic of an art is the Artist itself. And the biggest strength of an artist are his fans. The biggest prejudice done against an artist is someone explaining their art according to their perception.

Art is something that has to be an individual's perception, on what message it wants to send out to the society.

Art festivals provide an amazing opportunity to art lovers to get close or acquainted to their favourite artists. It provides them a platform to meet people who share the same interests. Few of the biggest ones are, ART BASEL (Switzerland and Miami), The Venice Biennial (Italy), Hong Kong International Art Fair where one can witness 1000+ artworks from curators around the world. Art festivals are also held to remember the artist when they no longer physically exist. As goes the Latin saying "Ars Longa Vita Brevis" means "ART IS LONG, LIFE IS SHORT".

Art gives people reason to live. Even if the artist does not physically exist, the artist and their art lives in the heart of the fans that have been inspired by them, they follow their ideologies, spread them to the other worlds and celebrate their life.

- Siddhita Gawade  
L.Y.B. Pharm

सुनो सख्ती कलियों का कहना,  
सुनो मुरझाए पत्तों का हाल,  
कह रहे सब चीख कर हुए हैं हम बेहाल।

कहीं थी नदियों की खिलखिलाहट,  
कहीं थे सावन के फव्वारे।  
आज वह गलियां सूख गई,  
इंसान खुद ही खुद से हारे।

कंक्रीट के जंगल में,  
भूल गए इतिहास हम।  
सुंदरता की मूरत जो थीं,  
है उजड़ी वीरान तुम।

ओ धरती आबाद थी तुम,  
जब इंसान नहीं जन्मे थे तूने।  
क्या फायदा उस औलाद का,  
जो बर्बादी की राह चुने।

- ऋषभ चौबे  
(एस. वाय. बी. फार्म)

# प्रदूषण एक श्राप

**WITH BEST COMPLIMENTS  
FROM  
APTEX INTERNATIONAL**

## सफर... जिंदगी का...

"सफर": इस तीन लफ्ज़ के शब्द में  
ना जाने कितनी बातें छुपी हैं;  
इसे पूरा कर उस मंजिल को पाने पर  
तेरी यह निगाहें रुकी हैं।

क्योंकि मंजिल को पाकर  
कुछ लोग खुदको संभाल नहीं पाते;  
जैसे उन ऊँचे पहाड़ों पर चढ़कर  
वो वहीं बैठ जाते हैं।

सफर ना जाने हमें  
कितनी मुश्किलों की सैर करवाता है;  
शायद कहीं बिछड़े हुए हमसे  
वो हमें मिलाता है।

इस अनुभव को तुम  
कोई किताब में नहीं ढूँढ़ पाओगे;  
मगर उसका क्या फायदा होगा  
अगर मंजिल पाकर तुम अनुभव को ही भूल जाओगे?

आशा है तुम इन बातों को समझ पाओगे;  
और मंजिलों को पाने की फिक्र से ज़्यादा  
इस सफर का तुम जश्न मनाओगे।

जब पहुँच जाओगे तुम अपनी मंजिलों के पास  
फिर एक पल वहीं ठहरना सही होगा;  
पर इतनी सी बात याद रखना  
की उसे पाकर तुमहें रुकना नहीं है।

बस, चलना है, और चलते रहना है।।

- श्रेया सुथार (टी.वाय.बी.फार्म)

## हम बच्चे हुआ करते थे.....



कैसे बारिशों में बेबाँक फिरा करते थे,  
अब बरामदे में पैर रख कर डर गए।  
इक उम्र हम भी बारिशों में कशियाँ तैराया करते थे,  
आज कागज़ों पर अलफ़ाज़ उतारने से डर गए।

कैसे सावन में झूलों पर बैठा करते थे,  
आज देखि सूखी डाली तो घबरा गए।  
इक उम्र बेधड़क मुस्कुराया करते थे,  
आज लफ़्ज़ों में जज़्बात छलकाना भूल गए।

कैसे गोद में सर रख कर सो जाया करते थे,  
आज सुकून की नींद का बोसा ही भूल गये।  
इक उम्र बेधड़क सीढ़ियों पर दौड़ा करते थे,  
आज लड़खड़ा कर क़दमों पर भरोसा भूल गए।

कैसे वक़्त के धागों से खेला करते थे,  
आज दौर बीता तो खुद को ही भूल गए।  
वह उम्र हम भी बच्चे हुआ करते थे,  
कब बीता वह दौर हम आज भूल गए।

- आशीष झाँगिआनी  
(टी.व्हाय बी.फार्म)



## “हल्ली”

बंद करून गजर घड्याळी  
सुरुवात होते दिवसाची;  
कुठे ऐकु येते हल्ली  
किलबील या पाखरांची.  
प्रार्थना नाही वदली जात  
आता प्रभातकाळी;  
सुप्रभातच्या संदेशांनी  
हल्ली होते सुरुवात ही निराळी.  
कोण-कोणाचा मालक हल्ली काही कळत नाही  
धावतात काटे घड्याळाचे की;  
माणूस धावे काट्यावरी  
प्रश्न हा सूटत नाही.  
शेजार धर्म, नाती-गोती वेळ  
उरला नाही या सारयासाठी;  
मिळतो वेळ हल्ली मला  
फक्त यांत्रिक मैत्रिसाठी.  
औषध घेऊन होतो आता  
शेवट माझ्या दिवसाचा;  
प्रश्नच उरला नाही  
हल्ली निवांत झोपेचा.

-हर्षदा ओगळे  
(फाइनल इयर)



## “आई तुझं लहान बाळ!”

मिटलेल्या पापण्यां मधे, अश्रू लपवायचे होते;  
मुक्या शब्दांनी का होई ना, तुला काहीतरी सांगायचे होते.  
मनात साठलेल्या आठवणींचे बाजार, आज स्वस्त होत चालला आहे;  
तू दिलेलं प्रेम आणि माया, अस्वस्थ होत चालले आहे.  
मी तुझाच भाग आहे, हे आजवर ही पटत नाही;  
एवढे अनमोल असुनही, तुझे विचार का गं मनाला माझ्या खेटत नाही?  
तुझ्या मायेच्या फुलांच्या बागेत, मी तुझी कळी म्हणून जन्माला आले;  
तुझ्या पानांत साठलेल्या दवांनी, आयुष्यभर ओली चिंब नाहले.  
मला झोपवताना गायलेली अंगाई, ऐकायला कोकिळा ही तुझ्या  
दारीयायची;  
झोपूदे गं माझ्या बाळाला निवांत, म्हणून तू रोज तीला हसकाउन  
घायचीस.  
तुझी चिमुकली कळी कधी फुलात उमलली उमजलं का गं तुला?  
तुझे म्हातारे डोळे माझं प्रेम शोधतायत हे अजून ही समजलं नाही  
मला!  
तुझ्या मायेची परतफेड व्हावी, असं कधीच तुला वाटले नाही;  
आठवत नाही गं असं कधी झालं, की मला रुतलेला काटा पाहून तुझं  
काळीज फाटलं नाही.  
आई तुझ्या मायेच्या बागेत मला नव्याने कळी होता येईल का गं?  
नको मला ती भिरभिरणारी फुलपाखरं, तुझी सावली पुन्हा मिठीत घेईल  
का गं?

खरं सांगू, ते हरवलेले क्षण मला पुन्हा जगायचे आहेत गं,  
खांदेकरी म्हणून नाही, तुझं लहान बाळ बनून बघायचं गं!

-सोनाली गुडाळकर  
(सेकंड इयर)



## “प्रिय आजोबा”

प्रिय आजोबा,  
असं म्हणतात की आपल्या आयुष्यात आजी आणि आजोबांचे फार महत्वाचे स्थान असते.  
आई वडिलांच्या अनुपस्थितीत आपले म्हणून जपणारे ते चतर असतात,  
मी स्वतःला फार भाग्यवान समजते की मी लहानाची मोठी तुझ्या आणि आजीच्या सानिध्यात झाले.  
आजीने मायेने भरवलेले दोन घास आणि तू सांगितलेल्या चिऊकाऊच्या गोष्टी  
या सर्व मी माझ्या आठवणींच्या सुवर्णकप्प्यात जपून ठेवल्या आहेत.  
तुला मी कधीही अहो-जावो केले नाही.  
मनात आदर तर फार होता, पण लहान पणा पासून आजोबा कमी आणि मित्रच जास्त होतास - माझापहिलामित्र.  
माझे प्रथम गुरु- व्यवसायाने शिक्षक होतासच, पण माझा नावाडीचा विषय गमतीशीर वसोपे करून शिकवणे, तुलाच जमले.  
गणित काहींचा आवडीचा विषय व काहींचा निव्वळ वैरी, माझा देखील वैरीच म्हणायचं,  
पण या विषयाला गोडी लावलीस तू. पुढे आयुष्याचे गणित कसे सोडवावे हे मी तुझ्या कडूनच शिकले.  
जीवनातील उदाहरणे तू स्वतःच उदाहरण होऊन शिकवलंस.  
म्हणून असे म्हणणे वास्तविक ठरेल की तूच माझा प्रथमगुरु.  
तुझ्या वाचनाचा वेग खूप वाखाणण्या सारखा होता. हातात घेतलेले पुस्तक संपेपर्यंत खाली ठेवत नव्हतास.  
तुझी वाचनाची भूक हीच तुझे ज्ञान आणि शब्दसामर्थ्य वाढवण्यासाठी उपयुक्त ठरली.  
परिश्रमाशिवाय पर्याय नसतो पण फक्तक ठोर मेहनत नाही तर ती योग्य दिशेने कशी करावी हे तूच शिकवलंस.  
शाळेतून परतल्यावर वेगवेगळ्या विषयांवर आपण वाद-विवाद करायचो.  
त्यामुळे आपल्या दोघांच्याही ज्ञानात भर पडायची.  
रामायण-महाभारतापासून ते अंतराळ आणि एलियन्स पर्यंत सर्वांवर चर्चा व्हायची.  
मी घराबाहेर पडले आणि उशीर झाला की तुझे दहा वेळा फोन असायचे.  
मला चिडायला व्हायचे, पण आनंदही व्हायचा, की माझी काळजी घायला आणि  
माझ्या येण्याची आतुरतेने वाट पाहणारी व्यक्ती घरी आहे.  
शेवटी असे म्हणणे की पत्राचा सारांश म्हणजे-आपल्या दोघांचे नाते  
आजच्या पिढीच्या भाषेत म्हणायचे झाले तर #goals.  
तुझी लाडकी नात, अर्थात तुझी बाप्पा.

-सायली कदम  
(सेकंड इयर)



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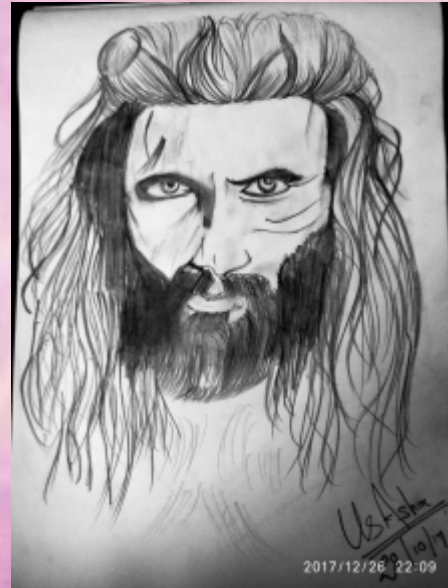
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