



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai


Research Centre (For Ph.D. in Science in the subject of Biotechnology)

(Under University of Mumbai)

1. Information of the Research Centre

1.	Name of the Incharge of center	:	Dr. Seema S. Kokitkar
2.	Date of the establishment:	:	17/10/2015
3.	No. of research guides at present	:	01
4.	Intake Capacity of the Research Centre	:	05
5.	No. of the Ph.D. Scholars awarded PhD degree till date	:	01
6.	No. of the Ph.D. Students enrolled for the Ph.D. at the centre	:	05

2. Research Guides in Science in the subject of Biotechnology

Sr. No.	Name of the Research Guide & Designation	Date of Recognition with Letter No.	
1.	Dr. (Mrs.) Seema S. Kokitkar Designation- Assistant Professor & Head Department of Biotechnology	PG/2/ICD/2015- 16/44646 /9-6-2015	

2. Details of the Ph.D. students at the Centre: 05

Sr. No.	Full Name of the Learner	Name of the Research Guide	Area of Research	Date of Registration
1.	Ms. Shweta A. Bhagat Ph.D. Awarded	Dr. Seema S. Kokitkar	Biotechnology	02/09/2016
2.	Ms. Rupali D. Nanekar	Dr. Seema S. Kokitkar	Biotechnology	23/10/2018
3.	Ms. Bindu Rajaguru	Dr. Seema S. Kokitkar	Biotechnology	27/11/2018
4.	Mrs. Bhawana P. Nile	Dr. Seema S. Kokitkar	Biotechnology	10/02/2020
5.	Mrs. Smita V. Sawant	Dr. Seema S. Kokitkar	Biotechnology	10/02/2020
6.	Ms. Latika L. Patil	Dr. Seema S. Kokitkar	Biotechnology	--

**Research Activities in the Department
(Academic Year -2017-2018 to 2023-2024)****A) Publications by the Faculty**

Particulars	No. of Publications
Peer Viewed National Journal	01
Peer Viewed International Journal- UGC CARE	06
Non-Peer Viewed National Journal	03
Book Chapters	04
Total	14



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

B) Details of Publications: (2017-2018 to 2023-2024)

- 1. S.S. Kokitkar, L.R. Chavan and S.A. Bhagat:** Alleviation of Adverse Effects of Salt Stress in *Triticum Aestivum* by Foliar Application of Compatible Solutes. International Journal Of Researches In Biosciences, Agriculture And Technology, Vol. V, Special Issue (3), pp., 272-276 (ISSN 2347 – 517X) **UGC Approved Journal**
- 2. S.A. Bhagat, S.S. Kokitkar and L.R. Chavan:** Isolation of chloropyrifos degrading bacteria from contaminated soil and evaluation of their bioremediation potential. International Journal Of Researches In Biosciences, Agriculture And Technology, Vol. V, Special Issue (3), pp., 308-312 (ISSN 2347 – 517X) **UGC Approved Journal**
- 3. Shweta Bhagat and Seema Kokitkar *.** Isolation and identification of bacteria with cellulose-degrading potential from soil and optimization of cellulase production. Journal of Applied Biology & Biotechnology Vol. 9(06), pp. 154-161, **November, 2021.** Available online at <http://www.jabonline.in> DOI: 10.7324/JABB.2021.96020. **UGC CARE LIST-II** (Indexing-Scopus, Web of Science)
- 4. Smita Viplav Sawant and Seema Sambhaji Kokitkar*** Phytochemical Profiling and GC-MS analysis of n-Hexane extract of *Lavandula bipinnata* (Roth) Kuntze leaves. Jour Pl Sci Res 38 (1) 357–363 2022. **UGC CARE-I**
- 5. Sushilkumar S. Ghadage,** (2021). Isolation, Purification and Characterization Of Antibacterial Peptide From Soil In Panvel Region, ERJ-Vol VIII, Issue VI Dec 2021,140-146 (**Peer Reviewed**)
- 6. R. D. Nanekar and S.S. Kokitkar.** Isolation, genetic identification and optimization of hydrocarbon degrading bacteria from petroleum contaminated soil in Raigad region, Ecology Env. & Conservation ISSN 0971–765X 29 (4) : 2023; pp. (1554-1561) UGC Care List II, Web of Science
- 7. Kadam S, Chandanshive V, Watharkar A, Vyavahare G, Kadam A, Perveen K, Choo Y, Govindwar S, Pak J,** Composting textile sludge using plant growth-promoting rhizobacteria in a solid-state bioreactor: a step towards zero discharge, International Journal Environment Science Technology. Electronic ISSN 1735-2630, 2024 1:3329–3336 (IF:3.1) SCIE UGC Care List II Scopus Web of Science



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

C) Book Chapters

1. S. M. Patil , A. S. Tamboli, B. N. Bhalkar, S. N. Survase , **A. D. Watharkar**, B. H. Jeon 2023. 24 - Systems biology and multi omics integration in biological treatment of textile wastewater. Current developments in Bioengineering and Biotechnology (Advances in Ecofriendly and sustainable technologies for treatment of textile wastewater) <https://doi.org/10.1016/B978-0-323-91235-8.00011-5> Elsevier Pages: 711-742.
2. Anita V. Handore,Vinita S. Jagtap, **Sharmila S. Ghangale**, Sharad R. Khandelwal, Avinash D. Bholay,Rajib Karmakar,Dilip V. Handore, "Bioaugmentation: an emerging ecofriendly technology for wastewater treatment (2023), Integrative Strategies for Bioremediation of Environmental Contaminants: Avenues to a cleaner society (2023): Volume 2, 978-0-443-140136 Elsevier Pages: 1-16 .
3. Anita V., Lalit K. Patil, Sharad R., **Sharmila S. Ghangale**, Mithun R., Manjiri S., Vijaya S. Ghayal, Rajib Karmakar,Abhijeet S. Jagtap, and Dilip V. Biodiversity of the Himalayas Volume 2: Utilization, Conservation and Management of Animal Resources Chapter 11- Cordyceps militaris: An Entomopathogenic Fungus as a Promising Solution for Conservation of Himalayan Cordyceps Hard ISBN: 9781774919903 Volume 2 (Environmental Science/Climate Change & Mitigation) Publisher: Apple Academic Press, Taylor & Francis
4. V. S. Kamble,S.S. Kamble, S. L. Khairnar, D. K. Patil, **S. S. Ghadage**, N.K. Desai, R. N. Patil, J. M. Pawara, Synthesis and Characterization of Metal Oxide Nanoparticles : Approaches and Techniques, Futuristic Trends in Chemical, Material Sciences and Nano Technology IIP Series, Volume 3,e-ISBN: 978-93-5747-960-8 IIP Series, Volume 3, Book 7, Part 8, Chapter 4



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

Publications in Anugoonj

1. S. S. Ghadage, A. D.Kumthekar,"Awareness about solid waste disposal amongst the population of Domestic Sector in Panvel Region" Anugoonj, Issue No.:06, 2017 pp 53-57 ISSN No.2348-9731. **(Non- peer-reviewed)**
2. Mr. S.S. Ghadage, Ms. Sharmila S.Ghangale, Ms.R.D.Nanekar, Ms.S.P. Dongare, Ms. A. D. Kumthekar, "To Study the Awareness about Viral Pandemics and Prevention amongst Indian Population" College Level Annual Journal "Anugoonj" **(Non peer-reviewed)**, ISSN:2348-9731, (2019-2020), Pg. No.- 20-24
3. Dr. Sharmila S. Ghangale and Mrs. S. P. Dongare, "Impact of Online Education on Teaching-Learning Process and its Future Consequences in Nation Development",College Level Annual Journal "Anugoonj" **(Non peer-reviewed)**, ISSN:2348-9731, (2020-2021)

D) Research Projects completed:

Sl. No.	Principal Investigator	Title of the project	Funding agency	Grant received	Date of Submission
1.	Mrs. L.R. Chavan	Potential of immobilized silicate solubilizing bacteria from rhizospheric soils in Raigad district to alleviate metal phytotoxicity	University of Mumbai	40,000/-	10/10/2017
2.	Mr. S. S. Ghadage	Isolation, Purification and Characterization of Antibacterial Peptide from Soil in Panvel region.	University of Mumbai	30,000/-	15/11/2019
3.	Dr. (Mrs.) S.S. Kokitkar	Production, Purification and Immobilization of β -glucosidase from Cellulolytic Isolates of Riagad District and to Check Its Potential for Hydrolysis of Lignocellulosic Biomass for Bioethanol Production	UGC	4,50,000/-	30/07/2020



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

Sl. No.	Principal Investigator	Title of the project	Funding agency	Grant received	Date of Submission
4.	Dr. S.S. Kokitkar and Mrs. L.R. Chavan, Mr. S.S. Ghadage and Ms. R.D. Nanekar	Management of Local Fish waste by turning it into a valuable organic fertilizer: An ecofriendly approach	RUSA	1,00,000/-	10/12/2022
5.	Mrs. L. R. Chavan	Encapsulated Bio-fertilizer for salinity stress mitigation	College Seed Money	15,000/-	13/02/2023

E) Research Projects Ongoing:

Sl. No.	Principal Investigator	Title of the project	Funding agency	Grant Sanctioned	Date of Sanction
1.	Mr. S.S. Ghadage	Isolation Of IAA producing bacteria and Its effect on plant growth	Institutional Seed Money	27000/-	19/10/2022
2.	Dr. A. D. Watharkar Co-PI Dr. S.S. Kokitkar	Development of lab and pilot scale bioreactor for the treatment of a real textile effluent and subsequent toxicity studies in concern with public health in Maharashtra	RUSA	1,00,000/-	18/01/2023
3.	Ms. B. R. Suryawanshi Co-PI Dr. S.S. Kokitkar	Screening, isolation and characterization of cholesterol oxidase from novel microorganisms	RUSA	1,00,000/-	18/01/2023



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

Sl. No.	Principal Investigator	Title of the project	Funding agency	Grant Sanctioned	Date of Sanction
4.	Dr. S. S. Ghangale Co-PI Dr. S.S. Kokitkar	To Study the therapeutic effect and Phytochemical properties of <i>Nelumbo nucifera</i> (Indian Lotus) seed and its application.	RUSA	1,05,000/-	25/01/2023
5.	Dr. A. D. Watharkar (PI), Ms B. R. Suryawanshi (CO-PI) Mrs M. D. Vaishmpayan (CO-PI)	Formulation, Optimization and Evaluation of Herbal Peel off mask and cleansing scrub for clean and healthy skin	(Thakur Infraprojects Pvt. Ltd. (TIPL) Panvel	1,70,000/-	01/01/2024
6.	Dr. S.S. Kokitkar (PI), Mrs. L.R. Chavan (CO-PI) Ms R. D. Nanekar (CO-PI)	Construction of a Microbial Consortium for Effective Valorization of Lignocellulosic Biomass and production of bioethanol	(Thakur Infraprojects Pvt. Ltd. (TIPL) Panvel	4,80,000/-	01/01/2024

F) Oral Presentations by the Faculty:

	No. of Oral Presentations
International Level	21
National Level	01
State Level	--
Total	22



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

Sl. No.	Name of all Authors	Title of the Paper	Name of Institute	Date of Presentation
1.	S. S. Kokitkar, L. R. Chavan and S. A. Bhagat	Alleviation of adverse effects of salt stress in <i>Triticum aestivum</i> by foliar application of compatible solutes	Gopal Krishna Gokhale College, Kolhapur	7/11/2017
2.	S. A. Bhagat S. S. Kokitkar and L. R. Chavan	Isolation of Chlorpyrifos degrading bacteria from contaminated soil and evaluation of their bioremediation potential	Gopal Krishna Gokhale College, Kolhapur	8/11/2017
3.	Dr. S. S. Kokitkar and Ms. S. A. Bhagat	Screening and isolation of potential cellulolytic bacteria from soil and optimization of culture conditions for maximum cellulase production.	Prin. L. N. Welingkar Institute of Management, Development & Research, Matunga, Mumbai	20/12/2019
4.	Bhagat S.A. Kokitkar S.S.	optimization of pectinase production by bacillus species using submerged fermentation	3 rd International Conference on 'Empirical and Theoretical Research (ICETR-2022)' organized by International Board for Education, Research and Development	28/01/2022 29/01/2022
5.	Smita Sawant	Phytochemical Profiling and GC-MS analysis of n-Hexane extract of <i>Lavandula bipinnata</i>	International Conference, G.N Khalsa college, Mumbai	08/04/2022 09/04/2022



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

6.	Rupali D. Nanekar and Seema S. Kokitkar*	Isolation, characterization and optimization of hydrocarbons degrading bacteria from oil contaminated sites of raigad region	University of Mumbai	4/08/2022 to 6/08/2022
7.	Smita Sawant, Seema Kokitkar	"Phytochemical screening, antioxidant study and Identification of active compounds using GC-MS of Lavendula bipinnata leaves.	International e-Conference on "Recent Innovations In Science and Technology" RIST-2023	10/01/2023 to 11/01/2023
8.	Dr. S. S. Ghangale	<i>Pseudomonas aeruginosa</i> : The Eco sustainable Tool for Bioremediation of Mercury	SANDIP University, Nashik in collaboration with Society for Green Environment, India	25/02/2022 to 26/02/2022 and 27/02/2022
9.	Rupali D. Nanekar and Seema S. Kokitkar*	Isolation, characterization and optimization of Diesel degrading bacteria from oil contaminated Soils of Raigad region	Mohanlal Sukhadia University, Udaipur Rajasthan	15/03/2023
10.	Bhawana. P. Nile1 and Seema. S. Kokitkar *	Screening, isolation and characterization of Cholesterol degrading bacteria from the soil Sample	Mohanlal Sukhadia University, Udaipur Rajasthan	15/03/2023
11.	Smita S. and Seema K.	Phytochemical evaluation, antioxidant potential & GC-MS analysis of soymida febrifuga (roxb.) A. Juss	Mohanlal Sukhadia University, Udaipur, Rajasthan	15/03/2023
12.	Bindu Rajaguru and Seema S. Kokitkar	In vitro propagation of <i>Quisqualis indica</i> : a Medicinal woody plant - as a sustainable approach	Mohanlal Sukhadia University, Udaipur, Rajasthan	15/03/2023



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

13.	Sushil Ghadage	Synergistic effect of Azotobacter and L-tryptophan application for improving plant growth	International Conference on Connecting Innovations in Biotechnology for Human Welfare (ICCIBH W- 2024) C.K. Thakur College ACS, New Panvel (Autonomous)	22/02/2024 23/02/2024
14.	Chavan Latika Rajendra	Effect of immobilized phosphate and silicate solubilizing bacteria on growth of <i>Vigna radiata</i>	Mahatma Phule Arts, Science and Commerce College, Panvel	23/01/2024
15.	Ms. Nanekar Rupali Dinbandhu	"Activity study of catalase, lipases, and catechol 1,2-dioxygenase from petroleum hydrocarbon degrading bacteria"	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
16.	Mrs. Bhawana Prashant Nile	"Comprehensive study of cholesterol oxidase production by <i>Bacillus inaquosorum</i> : molecular characterization, phylogenetic analysis, and optimization studies"	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
17.	Dr. Sharmila Shashikant Ghangale	"Exploring the therapeutic potential and phytochemical properties of <i>Nelumbo nucifera</i> (Indian Lotus) seeds for Health and wellness"	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

18.	Chavan Latika Rajendra	"Encapsulated bio-fertilizer for salinity stress mitigation"	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
19.	Dr. Watharkar Anuprita Dineshkumar	"Exploring phytoremediation potential of Ipomea aquatica Forsk to treat Scarlet RR andreal textile effluent and subsequent plant health analysis"	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
20.	Madhuri Darshan Vaishampayan	"A Preparation of fish feed from plant source and to check Effect on <i>Arassius auratus</i> and <i>Poeciliareticulata</i> "	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
21.	Bindu Rajaguru	Molecular Identification of Combretum indicum, from Navi Mumbai, Maharashtra, using DNA Barcoding Approach	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024
22.	Smita Viplav Sawant	Determination of Phytochemical Profile, Antioxidant Efficacy and GC-MS analysis of Lavendula bipinnata	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

G) Poster Presentations by the Faculty

	No. of Poster Presentations
International Level	01
National Level	02
Total	03

Sl. No.	Name of all authors	Title of the poster	Name of Institute	Date of Presentation
1.	Ms. Sonali P. Dongare	Green synthesis of Benzimidazoles	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	17/02/2020 18/02/2020
2.	Dr. Anuprita Watharkar	Lab to land Transfer of green Technology: Ex situ horizontal subsurface flow phytoreactor to treat real textile effluent and direct blue GLL and In situ plantation of Dwarf Jasmine to remediate effluent polluted site.	International Conference on Advances in Biotechnology: Current Discoveries and Future Perspectives (ICAB-2023). Amity Institute of Biotechnology, Amity University Mumbai	17/10/2023- 18/10/2023
3.	Ms. Lama Inayet Sirkhot	Synthesis of nanofertilizer using orange peels and to check its effect on <i>Vigna radiata</i>	Changu Kana Thakur A.C.S. College New Panvel (Autonomous)	22/02/2024 23/02/2024



॥ विद्या विनयेन शोभते ॥

Janardan Bhagat Shikshan Prasarak Sanstha's

CHANGU KANA THAKUR

**ARTS, COMMERCE AND SCIENCE COLLEGE, NEW PANVEL
(AUTONOMOUS)**

Re-accredited 'A+' Grade by NAAC (3rd Cycle - CGPA 3.61)

'College with Potential for Excellence' Status Awarded by UGC

'Best College Award' by University of Mumbai

H) Patents/Copyrights

Sr. No.	Title of the Patent/Copyright	Name of the Teacher	Date of Filing	Patent Number/ Copyright Number	Current Status
1.	Comparative analysis between <i>Ascophyllum nodosum</i> extract & fruit peels waste extract on germination & growth of mung bean	Dr. Seema Kokitkar and Ms. Rupali D. Nanekar	13/01/2022	L-114366/2022	Granted
2.	Effect of Fe ₃ O ₄ (Iron oxide) nanoparticles on the growth of Salt stressed <i>Lablab purpureus</i>	Dr. Seema Kokitkar and Ms. Shweta A. Bhagat	14/02/2022	L-117620/2022	Granted 23/09/2022
3.	Oral suspension Composition of <i>Prunella Cretensis</i> For Antimicrobial Infections	Mr. Sushilkumar Ghadage (*with microbiology Dept.)	06/03/2023	202321015055	Patent Filed
4.	Assessment of different seed priming treatment and their growth attributes in pulses i.e. <i>Vigna radiata</i> and <i>Vigna aconitifolia</i>	Dr. Seema Kokitkar & Bhawana suryawanshi	08/08/2023	L-131653/2023	Registered
5.	Use of groundnut shell waste as plant growth enhancer	Ms Rupali Nanekar Dr. Seema Kokitkar	15/05/2023	L-130569/2023	Registered

- Dr. Seema Kokitkar, Ms. Shweta A. Bhagat, Ms. Rupali D. Nanekar and Ms. Bhawana Nile: 20 Bacterial gene sequences has been deposited in GenBank (NCBI). Accession number was provided to individual isolates.
