



Dr. Aisha Kamal

**Professor, Department of Bioengineering, Faculty of Engineering and IT,
Integral University, Lucknow**

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[Google Scholar](#) , [orcid ID](#) , [Scopus](#) , [Web of Science](#), [Research Gate](#), [Linkedin](#)

PROFILE

Aisha Kamal, M.Sc., Ph.D., is a Professor in the Department of Bioengineering, Integral University Lucknow. She has 20 years of research and teaching experience. She has 37 research and review papers, 12 book chapters and 4 books to her credit. She has guided 12 Ph. D and 16 Postgraduate thesis. Currently, she is actively involved in investigating the role of different phytohormones and other natural products in amelioration of various stress generated growth disorders in plant. She successfully established that seed priming with SA and GA3 prevents damage to the photosynthetic machinery by enhancing antioxidant activity, as well as reducing oxidative stress in pea plant. She is also working on elucidation of protective role of different plant extracts in oxidative stress induced hepatotoxicity and successfully formulated liposomal vesicles from cyanobacterial lipid. The study revealed the better efficacy of encapsulated thymoquinone as compared to thymoquinone alone indicating cyanosome as a promising candidate for drug carrier. Importantly, the use of natural lipids from cyanobacteria will circumvent the need for the costly synthetic lipid for the preparation of liposome.

RESEARCH INTEREST:

- Plant Biotechnology
- Agricultural Biotechnology
- Environmental Biotechnology

SUMMARY OF RESEARCH ACCOMPLISHMENT:

- Total Number of Publication: 37
- Number of publications in SCI/ Scopus indexed journals: 37
- Number of Patents (Published/ Grant): 06
- Number of Book Chapters: 12
- Number of Books Edited: 03
- Number of Authored Books: 01
- Invited Talk as a Resource Person : 06
- Citations: 806
- H index: 14
- I10 index: 20

PROFESSIONAL MEMBERSHIP:

- Life Member, Association of Food Science & Technology AFST(I), India. Membership No. AFST/LM-9-2022/LUCK/133.
- Senior member, International Society for Research and Development. (SR3140900189)
- Life Member, International Association of Engineers, Hong Kong.

- Life Member, Italo-Latinamerican, Asian, African Society of Ethnomedicine. (SILAE) (135891644901539)

COURSE TAUGHT:

- Environment Biotechnology
- Plant Biotechnology
- Bioanalytical Techniques
- Downstream Processing
- Introduction to Bioengineering
- IPR, Biosafety and Bioethics

ADMINISTRATIVE/DEPARTMENTAL RESPONSIBILITY

- Chairperson, DQAC, Department of Bioengineering, Integral University, Lucknow.
- Vice chairperson, DQAC, Department of Bioengineering, Integral University, Lucknow.
- NAAC/NIRF/NBA coordinator, Department of Bioengineering, Integral University, Lucknow.
- Incharge, NAAC criteria 4, Department of Bioengineering, Integral University, Lucknow.
- Member, Faculty Academic Committee (FAC), Faculty of Engineering and IT, Integral University, Lucknow.
- Coordinator, Laboratory Maintenance Committee, Department of Bioengineering, Integral University, Lucknow.
- Member, Board of Studies, Department of Bioengineering, Integral University, Lucknow.
- Coordinator, Laboratory Maintenance Committee, Department of Bioengineering, Integral University, Lucknow
- Involved in preparation and modification of ordinance and syllabus (B. Tech and M. Tech Biotechnology courses)
- Course coordinator, B. Tech and M.Tech Biotechnology courses
- Head Examiner for the evaluation of answer sheets of various graduate and postgraduate courses of the Department.
- Paper setter, moderator and evaluator for various theory papers of different courses including Ph.D., M.Tech., B.Tech., Integrated B.Tech., B.Sc. (Biotechnology); M.Sc. (Biotechnology)
- External examiner for various practical exams in the university and other universities.
- Member of organizing committees of various events of Department and University.

STUDENTS SUPERVISION

Ph.D. Student:

Awarded: 06

Supervising: 06

M. Tech/ M.Sc. Students: 16

PUBLISHED/GRANT PATENTS

- Artificial Intelligence Based Activation Device for Treatment of Peripheral Neuropathy
 - Design number: 6391254
 - Grant date: 24/09/2024
- Device for Phytochemical Screening and Analysis of Crude Drugs
 - Design number: 421376-001
 - Grant date: 27/06/2024
- A Novel Bacterium Consortium for Effective Lead Bioremediation (202311072045 A)
 - Publication Date: 24/11/2023
- AI Based Auto Analyser For Detection Of Cholesterol In Blood

- Design number: 6372460
- Grant date: 25/06/2024
- Enhancement of Sequestration Potential of Bacterial Consortium by UV Radiations (202313075303 A)
 - Publication Date: 23/02/2024
- Design and Develop a Device that Predicts the Job Performance of Employees Based on Emotional Intelligence (202311073759 A)
 - Publication Date: 24/11/2023

PUBLISHED/ACCEPTED SCI/SCOPUS RESEARCH PAPERS

1. **Aisha Kamal**, Sazia Siddiqui (2024). Biosynthesis of Silver Nanoparticles from Trichoderma Species Isolated From Agricultural Soil. Special Issue of International Scientific Journal “Science And Innovation” SEPTEMBER 2024 | ISSN: 2181-3337 | SCIENTISTS.UZ. <https://doi.org/10.5281/zenodo.13837357>
2. Afreen Shahid, **Aisha Kamal**, Kunal, Manpreet Kaur, Akhilesh Maurya, Dinesh Vishwakarma, Shashi Kant, Shweta Hitesh Shahare (2024). Phytochemical and Pharmacological Evaluation of Antioxidant and Antidiabetic Potential of Wedelia calandulaceae Leaves Extract: Focus on Alpha-Amylase and Alpha-Glucosidase Inhibition. African Journal of Biological Sciences. 6(6), 7715-7729. <https://doi.org/10.33472/AFJBS.6.6.2024.7715-7729>
3. Khan, I., **Kamal, A.**, & Akhtar, S. (2024). Diabetes Driven Oncogenesis and Anticancer Potential of Repurposed Antidiabetic Drug: A Systemic Review. Cell biochemistry and biophysics, 10.1007/s12013-024-01387-6. Advance online publication. <https://doi.org/10.1007/s12013-024-01387-6> (**Impact Factor- 1.8**)
4. Afreen Shahid, Chitranshu Pandey, Farhan Ahmad, **Aisha Kamal** (2023). “Assessment of biodegradation potential of lead-resistant bacteria isolated from polluted sites of Gomati River in Lucknow.” Journal of Applied Biology & Biotechnology.12 (1), 240-247. <http://doi.org/10.7324/JABB.2024.148890> (**Impact Factor- 1.0**)
5. Shahid, Afreen & **Kamal, Aisha** (2023). “Bioremediation of lead contaminated water: an assessment of remediation potential of isolated bacterial strains from gomti river.” Biochemical & Cellular Archives. 23 (2), 873-880.
6. Ahmad, F., & **Kamal, A.** (2022). Crosstalk-interaction of Nitric oxide in plant growth and development under abiotic stress. Journal of Innovation in Applied Research. <http://doi.org/10.51323/JIAR.5.3.2022.13-24>, 5 (3), 13-25. <http://doi.org/10.51323/JIAR.5.3.2022.13-24>
7. Laxmi, **Aisha Kamal**, Vinay Kumar, S. Rajan and Anju Bajpai (2022). “Identification and characterization of Salt-Responsive Proteins in Mangifera indica.” Journal of Applied Horticulture. 24(1): 110-115. (**Impact Factor: 0.163**)
8. Afreen Shahid, Chitranshu Pandey, Farhan Ahmad, **Aisha Kamal** (2021) "Bacterial bioremediation: Strategies adopted by microbial-community to remediate lead from the environment". Journal of Applied Biology & Biotechnology. 9(6): 18-24. <http://doi.org/10.7324/JABB.2021.9602>. (**Impact Factor- 1.0**)
9. Laxmi, **Aisha Kamal**, Vinay Kumar, M. Muthukumar, Anju Bajpai (2021) “Morphological indicators of salinity stress and their relation with osmolyte associated redox regulation in mango cultivars.” Journal of Plant Biochemistry and Biotechnology. 30(4):918–929. <https://doi.org/10.1007/s13562-021-00735-4> (**Impact Factor-1.175**)
10. Ahmad Farhan, **Kamal Aisha**, Singh Ananya, Ashfaque Farah, Alamri Saud, Siddiqui Manzer (2020). “Salicylic acid modulates antioxidant system, defense metabolites and expression of salt transporter genes in *Pisum sativum* under salinity.” Journal of Plant Growth regulation. <https://doi.org/10.1007/s00344-020-10271-5>. (**Impact Factor- 4.169**)
11. Ahmad Farhan, **Kamal Aisha**, Singh Ananya, Ashfaque Farah, Alamri Saud, Khan

- Mohammad Iqbal Raza (2020). "Seed priming with gibberellic acid induces high salinity tolerance in *Pisum sativum* through antioxidant system, secondary metabolites and upregulation of antiporter genes." *Plant Biology*. <https://doi.org/10.1111/plb.13187>. (**Impact Factor- 3.081**)
12. Shafeeqe Amir, Ahmad Farhan, **Kamal Aisha** (2020). "Toxicity of pesticides to plants and non-target organism: A comprehensive review." *Iranian Journal of Plant Physiology*. 10(4), 3299-3313. doi: 10.22034/ijpp.2020.1885628.1183 (**Impact factor: 0.11**)
 13. Verma I, A. Chandra, A, Kamal (2019). "Identification and Validation of Differentially Expressing Transcripts from Top and Bottom Internodes of High-Sucrose Sugarcane Variety Coj64." *Sugartech*, 22, 89 - 97. <https://doi.org/10.1007/s12355-019-00763-4> (Impact factor-1.688)
 14. Indu Verma K Roopendra, A Sharma, Amresh Chandra and **Aisha Kamal** (2019). Expression analysis of gene associated with sucrose accumulation and its effect on source sink relationship in high sucrose accumulating sugarcane variety. *Physiology and Molecular Biology of Plants*. 25(1): 207–220 DOI: <https://doi.org/10.1007/s12298-018-0627-z>. (M.No. IU/R&D/2018-MCN000393) (**Impact Factor-1.15**).
 15. Ananya Singh, Farhan Ahmad, Priti Bajpai, Tarique Mahmood Ansari, **Aisha Kamal** (2019). "Cyanosome: a pilot study" *Chemistry and Physics of Lipids*, 224: 104-728 DoI:<https://doi.org/10.1016/j.chemphyslip.2019.01.006> (**Impact factor-3.329**)
 16. Indu Verma, Kriti Roopendra, **Aisha Kamal** and Amresh Chandra (2018). Biochemical Profiling of Source and Sink Tissues at Different Growth Stages of Early and Late Maturing Varieties of Sugarcane (*Saccharum* spp. Hybrids). *Biosciences Biotechnology Research Asia*, Vol. **15**(3), 611-618. DOI: <http://dx.doi.org/10.13005/bbra/2667>. (M.No. IU/R&D/2018-MCN000392).
 17. Farhan Ahmad, Ananya Singh and Aisha Kamal (2018). Differential response and defense mechanism of plant growth regulators under salinity to induce salt tolerance - a review. *Bio Res Rev*.(1): e290877-. (M.No. IU/R&D/2018-MCN000159).
 18. Farhan Ahmad, Ananya Singh and **Aisha Kamal** (2018) Synergistic application of Salicylic acid and Gibberellic acid on *Pisum sativum* to induce salt tolerance. *Plant Cell Biotechnology and Molecular biology*. Vol.: 19 (6). 170-178. DOI: <http://www.ikprress.org/index.php/PCBMB/article/view/1325> (**Impact Factor-0.7**) (M.No- IU/R&D/2017-MCN0125).
 19. Firdos Fatma, **Aisha Kamal** and Alka Srivastava(2018). "Exogenous Application of Salicylic Acid Mitigates the Toxic Effect of Pesticides in *Vigna radiata* (L.) Wilczek *Journal of Plant Growth Regulation* 37:1185-1194. DOI: <https://doi.org/10.1007/s00344-018-9819-6> (M.No. IU/R&D/2017-MCN000156) (**Impact Factor-2.07**).
 20. Farhan Ahmad, Ananya Singh and **Aisha Kamal** (2018). Crosstalk of brassinosteroids with other phytohormones under various abiotic stresses. *Journal of Applied Biotechnology*.6(1):56-62. DOI: 10.7324/JABB.2018.60110. (M.No- IU/R&D/2017-MCN-0136).
 21. Firdos Fatma, **Aisha Kamal** and Alka Srivastava (2018).Monitoring of morphotoxic, cytotoxic and genotoxic potential of mancozeb using *Allium* assay. *Chemosphere* 195; 864-870. DOI: 10.1016/j.chemosphere. 195. 864-870. DOI: <https://doi.org/10.1016/j.chemosphere.195.864-870>. (**Impact Factor-4.427**).
 22. Firdos Fatma, **Aisha Kamal** and Alka Srivastava (2018). Phytotoxicity of pesticides mancozeb and chlorpyrifos: correlation with the antioxidative defence system in *Allium cepa* *Physiology and Molecular Biology of Plants* 24(1). 115-123. DOI 10.1007/s12298-017-0490-3 (**Impact Factor-1.02**).
 23. Farhan Ahmad, Ananya Singh and **Aisha Kamal** (2017). Ameliorative effect of salicylic acid in salinity stressed *Pisum sativum* by improving growth parameters, activating photosynthesis and enhancing antioxidant defense system. . *Biosci Biotech. Res. Comm*. 10(3): 488-496, DOI: 10.21786/bbrc/10.3/22. (**IF 0.81**).
 24. Heena Khatoun, Ananya Singh, Farhan Ahmad and **Aisha Kamal** (2017). "Brassinosteroids –

- An Essential Steroidal Regulator: Its Structure, Synthesis and Signaling in Plant Growth and Development- A Review” *Int. J. Curr. Res. Biosci. Plant Biol.* 4(7), 88-96. doi: <https://doi.org/10.20546/ijcrbp.2017.407.011>.
25. Firdos Fatma, **Aisha Kamal** and Alka Srivastava(2017). “Morphotoxicity of fungicide mancozeb on two genotypes of *Vigna*.” *International Journal of Botany and Research (IJBR)*, 7(2):2319-4456.
 26. Ananya, Farhan Ahmad, **Aisha Kamal** (2017). Potential effect of pH and UV-B on growth behavior and lipid profiling of *Nostoc muscurum*. *International journal of biology, Pharmacy and Allied Sciences (IJBPAS)*,6(4): 650-666 (IF 1.02).
 27. Ananya, Farhan Ahmad and **Aisha Kamal** (2016). Optimization of pH and nitrogen source for enhanced production of lipid in cyanobacterium *Synechococcus Elongatus* PCC7942. *International journal of biology, Pharmacy and Allied Sciences (IJBPAS)*, 5(11): 2771-2780 (IF 1.02).
 28. Pushpanjali Hazarika , Farhan Ahmad, Ananya, and **Aisha Kamal** (2016). “Hepatoprotective and Antioxidant Properties in *Nelumbo nucifera* (Lotus)”. *International Journal of Pharmaceutical Sciences Review and Research*. Vol 39 (1)pp.19-25 (IF 0.65).
 29. Ravi Prakash, Ananya, Farhan Ahmad and **Aisha Kamal**(2016).” Biofuel: A Step Towards The Cleaner Fuel.” *International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)* July, 2016, 5(7): 1623-1635 (IF 1.02)
 30. Roma Jamal, Ananya, **Aisha Kamal**, Adnan Ahmad and Farhan Ahmad(2016).” Recent Approaches in conversion of universal blood group by enzymatic method.” *International Journal of Pharmaceutical Sciences Review and Research* Vol.38(2): 141-144 (IF 0.65).
 31. Ananya and **Aisha Kamal** (2016). “Fatty Acid Profiling and Antioxidant Potential of Total Polar Lipid Content of Cyanobacterium *Nostoc Muscurum*.” *International Journal of Pharmacy and Pharmaceutical Sciences*. Vol 8 (2) pp.159-163 (IF 0.49).
 32. Ananya, **Aisha Kamal**, and Iffat Zareen Ahmad (2014) “Cyanobacteria ‘The Blue Green Algae’ And Its Novel Applications: A Brief Review.” *International Journal of Innovation and Applied Studies*. Vol. 7 (1). ISSN 2028-9324. pp. 251-261.
 33. **Aisha Kamal** and Iffat Zareen Ahmad (2014). “Phytochemical Studies of Different Phases of Germination of *Nigella sativa* Linn - A Medicinally Important Plant.” *International Journal of Pharmacy and Pharmaceutical Sciences*. Vol 6 (4) pp.318- 323 (IF 0.49).
 34. **Aisha Kamal** and Iffat Zareen Ahmad (2014) “Alteration in Antibacterial Potential of *Nigella sativa* L. Seed during Different Phases of Germination.” *International Journal of Current Microbiology and Applied Sciences*. Vol. 3(3): pp.268-282 (IF 0.78).
 35. **A.Kamal**, H. Islam and I. Z. Ahmad (2010). “Hydroxyl Free Radical Scavenging Activity of *Nigella Sativa* L. Seed Extracts in various Germinating Stages under Cadmium Stress.” *International Journal of Biological Sciences and Engineering*. Vol. 01 (04), pp. 203-208.
 36. **Aisha Kamal**, Jamal Mohammad Arif and Iffat Zareen Ahmad (2010). “Potential of *Nigella sativa* L. Seed during Different Phases of Germination on Inhibition of Bacterial Growth.” *E-3 Journal of Biotechnology and Pharmaceutical Research*, Vol. 1 (1), pp.009–013.
 37. Iffat Zareen Ahmad, **Aisha Kamal** & Mohammad Hayatul Islam (2010). “Alteration in the Activity of Antioxidant Enzymes in *Nigella sativa* Seed during Different Phases of Germination.” M. Kalogiannakis, D. Stavrou & P. Michaelidis (Eds.) *Proceedings of the 7th International Conference on Hands-on Science*,. 2010, Rethymno-Crete, pp. 423 – 426. <http://www.clab.edc.uoc.gr/HSci2010>.

PAPER PUBLISHED IN INTERNATIONAL CONFERENCES

1. **Aisha Kamal**, Sazia Siddiqui (2024). Biosynthesis of Silver Nanoparticles from *Trichoderma* Species Isolated From Agricultural Soil. Special Issue of International Scientific Journal “Science And Innovation” SEPTEMBER 2024 | ISSN: 2181-3337 | SCIENTISTS.UZ. <https://doi.org/10.5281/zenodo.13837357>

BOOK EDITED/ AUTHORED

1. Title: “**Algal, Fungal and Microbial Research**”(2023)
Publisher: Genic Books Publishers Pvt.Ltd. Agra
ISBN: 978-81-966376-3-7
Edited by: Mukul M, Barwant, Balwant Singh, Shivangi Tripathi, Sneha Dwivedi, Dr. A. Pramila, Dr. Vanita C. Karande, **Dr. Aisha Kamal**, Dr. Vinay Kumar Singh, Dr. Alok Kumar Singh.
2. Title: “**Research in Mycology-II**”(2023)
Publisher: Blue Duck Publications, Srinagar, J&K
ISBN: 978-93-93996-47-3
Edited by: Balwant Singh, Mukul M. Barwant, Shivangi Tripathi, Dr. Vinay Kumar Singh, Dr. Vanita C. Karande, **Dr. Aisha Kamal**, Shailendra Kumar, Dr. Belle D. Shenoy, Dr. Gopa Banerjee
3. Title: “**Advancements in Environmental Biotechnology**” (2021)
Publisher: Aargon Press, India.
ISBN- 978-9-3940-7017-2.
Edited by: **Dr, Aisha Kamal**, Dr. Roohi and Dr. Alvina Farooqui.
4. Title: “**Antioxidant potential of *Nigella sativa* in germination stages**”(2012)
Publisher: LAP LAMBERT Academic Publishing, Germany.
ISBN- 978-3-8484-4558-5.
Authored by: Iffat Zareen Ahmad, **Aisha Kamal** and Hayatul Islam

BOOK CHAPTERS

1. Anum Kamal, Faiyaz Ahamad, **Aisha Kamal** (2024). “**Medical Image Analysis: Revolutionizing Diagnosis through Deep Learning.**” In book “Futuristic Trends in Artificial Intelligence. Volume 3, Book 12, IIP Series, Page no.56-88, e-ISBN: 978-93-6252-541-3, DOI: <https://www.doi.org/10.58532/V3BIAI12P1CH7>
2. **Aisha Kamal**, Nida Sultan, Shazia Siddiqui, Farhan Ahmad (2024). “**Role of Beneficial Elements Signalling and Metabolic Performance in Plants Under Heavy Metal Stress**” in book entitled “Essential Minerals in Plant-Soil System - Coordination, Signalling, and Interaction under Adverse Situations-Plant Biology, Sustainability and Climate Change” publisher Elsevier Inc. USA. Pages 265-301, ISBN 9780443160820, <https://doi.org/10.1016/B978-0-443-16082-0.00012-6>
3. **Aisha Kamal**, Nida Sultan, Shazia Siddiqui, Farhan Ahmad (2023). “**Impact of Nitrogen Oxides on Tropical Plants**” in book entitled “Ecophysiology of Tropical Plants: Recent Trends and Future Perspectives” Publisher: CRC Press-TAYLOR & FRANCIS. Pp. 50-59. ISBN: 9781003335054. <https://doi.org/10.1201/9781003335054>
4. Shivangi Tripathi, Gopa Banerjee, **Aisha Kamal**, Anil Kumar Tripathi (2022) “**Candidiasis: A Fungal Infection of Human**” in book entitled “Research in Mycology-I” Volume 1. BlueRoseONE, India. pp. 301-314. ISBN: 978-93-5668-523-9.
5. **Aisha Kamal** and Farhan Ahmad (2022) “**Sorghum: Role and Responses Under Abiotic Stress**” in book entitled “Sustainable Remedies for Abiotic Stress in Cereals” Springer, Singapore. pp 107–124. ISBN: 978-981-19-5121-3. https://doi.org/10.1007/978-981-19-5121-3_5
6. Shadma Andleeb Khan, Nida Sultan, Laxmi and **Aisha Kamal**. (2021) “**Salicylic acid: an effective tool to combat mancozeb toxicity in plants**” in book entitled “Advancements in Environmental Biotechnology”, Published by Aargon Press, India. ISBN: 978-9-3940-7017-2.
7. Farhan Ahmad and **Aisha Kamal** (2021). “**Oxidative Stress Alleviation by Modulation of**

- the Antioxidant System under Environmental Stressors**' in book entitled "Organic Solutes, Oxidative Stress, and Antioxidant Enzymes Under Abiotic Stressors" CRC Press, Taylor & Francis Group. Pp. 191-204. ISBN: 9781003022879 <https://doi.org/10.1201/9781003022879>
8. **Kamal Aisha** and Ahmad Farhan. (2020) "**Developing C4 Rice for Higher Photosynthetic Efficiency and Environmental Stress Tolerance**". In: Roychoudhury A. (eds) Rice Research for Quality Improvement: Genomics and Genetic Engineering. Springer, Singapore. pp 465–480. ISBN: 978-981-15-4122-3 https://doi.org/10.1007/978-981-15-4120-9_20
 9. Ahmad Farhan, Singh Ananya, **Kamal Aisha** (2020). "**Osmoprotective Role of Sugar in Mitigating Abiotic Stress in Plants**" in book entitled "Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives", Published by Wiley and sons.pp 53-70. ISBN: 978-1-119-55165-2. <https://doi.org/10.1002/9781119552154.ch3>
 10. Farhan Ahamd, Ananya Singh and **Aisha Kamal** (2019). "**Salicylic acid-mediated defense mechanisms to abiotic stress tolerance**" *Book: Plant Signaling Molecules* Publisher: ELSEVIER Education, Cambridge, MA 02139 | USA. ISBN: 9780128164518. Pp. 355-369. <https://doi.org/10.1016/B978-0-12-816451-8.00022-8>
 11. I Z Ahmad, A Kamal and S Fatima (2010) "**Evaluation of Antimicrobial Potential of *Cuminum Cyminum* L. against Some Pathogenic Bacteria**". In: Agriculture: Africa's "engine for growth" - Plant science and biotechnology hold the key, Aspects of Applied Biology 96, 409-413.
 12. I Z Ahmad, A Kamal and J M Arif (2010) "**Alteration of Sugar and Protein Contents in *Nigella Sativa* L. Seeds during Different Phases of Germination.**" In: Agriculture: Africa's "engine for growth" - Plant science and biotechnology hold the key, Aspects of Applied Biology 96, 415-420.
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