

Name and Designation: Dr. P. MANIVEL, Principal Scientist (Plant Breeding) & Head (i/c) ICAR-NIRCA Research Station, Vedsandur

Date of Birth: 13.05.1965

Date of Joining ICAR: 13.02.1995

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Educational Qualification: Ph.D.

Discipline: Plant Breeding and Genetics

Service Particulars

- Scientist (1995-2002, ICAR-DGR-Junagadh)
- Sr. Scientist (2002-2007, ICAR-CPRI-Shimla)
- Principal Scientist (2007-2020, ICAR-DMAPR- Anand; 2020-Continuing, ICAR-NIRCA)

Areas of Expertise for Consultancy Purpose

- Breeding for higher yield and quality in chewing tobacco
- Breeding of Potato, Groundnut, and Tobacco
- Breeding of medicinal plants (Ashwagandha and Isabgol)

Research Publications (Total publications 320)

Best recent 30 Papers

1. **Manivel Ponnuchamy**, Sandip Patel, Jincy Mathew, Jitendra Kumar and Nagaraja Reddy Rama Reddy. 2024. Comparative Transcriptome Analysis of Resistant and Susceptible Genotypes of Isabgol (*Plantago ovata*) During Interactions with *Peronospora plantaginis*, the Causal Agent of Downy Mildew Disease. Plant Molecular Biology Reporter <https://doi.org/10.1007/s11105-024-01491-0>. (NAAS Rating: 8.10) (Impact factor 1.8).
2. Gopinath P, Saraswathi T, **Manivel P***, Visalakshi M, Santhanakrishnan VP, Kumaresan M and Seshu Madhav M. (2024). Exploring genetic variability and trait relationships in Ashwagandha (*Withania somnifera* Dunal L.) for improved yield, Plant science today. 11(sp4):01-09. (Impact factor-0.9) (NAAS rating 6.7).
3. Lakshminarayana R., T.G.K. Murthy, K.N. Subramanya, R.V.S. Rao, K. Palanichamy, A.V.S.R. Swamy, K. Nagarajan, M. Kumaresan, T.S.N. Reddy, K. Sarala, **P. Manivel***, K. Prabhakara Ra and M. Sheshu Madhav. (2023). "YASINI" - A new high yielding black shank disease resistant chewing tobacco variety for Tamil Nadu. Tobacco Research 49(1),29-37. (NAAS Rating 5.29)
4. **Manivel P**, 1. Manivel P, R.P. Meena, M. Suganthi, T. Janakiram and Vipin Chaudhary. 2022. Pest and Diseases of Medicinal Plants, Westvile Publishing House, New Delhi, 160 pp.
5. **Manivel, P.**, Deore, H.B. and Nagaraja Reddy, R. 2018. Inheritance of morphological characters in Isabgol (*Plantago ovata* Forsk.). Academia Journal of Medicinal Plants 6(5): 91-95.
6. **Ponnuchamy Manivel**, Rama Reddy Nagaraja Reddy and Harshal Deore. 2017. Genetic diversity for root yield and its component traits in ashwagandha (*Withania somnifera* (L) Dunal) pure lines derived from JA 134 population. Int. J. Curr. Microbiol. App. Sci. 6(4): 1694-1710. (<https://doi.org/10.20546/ijcmas.2017.604.204>).
7. A.C. Polaiah, Parthvee R. Damor, R. Nagaraja Reddy, **P. Manivel**, Shivakumara K.T., Manish Kumar Suthar, V. Thondaiman, Manjesh G.N., K. Hima Bindu, and Jitendra Kumar. (2022). Development of genomic SSR markers in *Gymnema sylvestre* using next generation DNA sequencing and their application in genetic diversity analysis. Journal of Applied Research on Medicinal and Aromatic Plants, (2022).100455 (IF:3.945) (NAAS rating 9.8)
8. Saha, A., Basak, B.B., **Manivel, P.** and Kumar, J., 2021. Valorization of Java citronella (*Cymbopogon winterianus* Jowitt) distillation waste as a potential source of phenolics/antioxidant: influence of extraction solvents. *Journal of Food Science and Technology*, 58:255–266. (IF – 4.2) (NAAS rating – 8.60)
9. Thaker K, Patoliya J, Prajapati J, Rabadiya K, **Ponnuchamy M**, Rawal R, Nagaraja Reddy R, Joshi R (2024) Decoding the in-silico structure of isopentenyl Diphosphate Delta-Isomerase protein from *Cassia angustifolia* Vahl, Journal of Biomolecular Structure and Dynamics, DOI:10.1080/07391102.2024.2442757.
10. Hirapara P, Patel S, Nagaraja Reddy R, Dutta S, **Manivel P**, Basak BB, Bhattacharya BK, Das M (2024) Assessment of multi-date Sentinel-2 data for field-level monitoring of Isabgol (*Plantago ovata* Forsk) cropping practices in India. Advances in Space Research <https://doi.org/10.1016/j.asr.2024.08.001>



11. Thaker K, Patoliya J, Rabadiya K, Patel D, **Ponnuchamy M**, Nagaraja Reddy R, Joshi R (2024) An in-silico approach to unravel the structure of 3-deoxy-D-arabino-heptulosonate 7-phosphate synthase (DAHPS): a critical enzyme for sennoside biosynthesis in *Cassia angustifolia* Vahl. *J Biomol Struct Dyn*. 2024 May 27:1-14. doi: 10.1080/07391102.2023.2216300. (IF 2.7) (NAAS rating 8.70)
12. Vijai Kishor Gupta, SV Singh, Vinay Bhardwaj, SK Luthra, S K Pandey, Dinesh Kumar, Sanjay Rawal, Bandana Kaundal, Ashiv Mehta, **P Manivel**, Vinod Kumar, BP Singh, S K Chakrabarti and Manoj Kumar. 2021. Kufri Fryom: a new high yielding French fry potato variety. *Potato J* (2021) 48 (1): 1-14. (NAAS rating 5.29).
13. Kumaresan,M., D. Damodar Reddy, **P. Manivel**, S. Kasturi Krishna, M. Venkatesan, Aninidita Paul and V. Annadurai. (2023). Value addition in a sun cured chewing tobacco (*Nicotiana tabacum* L) with natural sweeteners and astringent tasteners. *Tobacco Research*, 49(1);7-10. (NAAS Rating 5.29).
14. Kumaresan M., Damodar Reddy D., **Manivel P.**, Kasturi krishna S., Kiran kumar T and V. Annadurai. (2025). Impact of integrated agro-technologies on the weeds and cured leaf yield of tobacco (*Nicotiana tabacum*) in Southern India. *Indian J. Agronomy* 70 (1): 91-98 ; DOI: 10.59797/ija.v70.i1.5586/2025 (NAAS Rating 5.29).
15. Neelam Balkrishna Bare1, Pratima Sharad Jadhav, **Manivel Ponnuchamy**. 2024. DNA barcoding for species identification and phylogenetic investigation employing five genetic markers of *Withania coagulans*. *Journal of Applied Biology & Biotechnology* Vol. 12(1), pp. 69-76. DOI: 10.7324/JABB.2023.145330. (NAAS rating: 5.30).
16. Vijai Kishor Gupta1, SV Singh, Vinay Bhardwaj, SK Luthra, S K Pandey, Dinesh Kumar, Sanjay Rawal, Bandana Kaundal, Ashiv Mehta, **P Manivel**, Vinod Kumar, BP Singh, S K Chakrabarti and Manoj Kumar. 2021. Kufri Fryom: a new high yielding French fry potato variety. *Potato J* (2021) 48 (1): 1-14. (NAAS rating 5.29)
17. Basak, B.B., Saha, A., Gajbhiye, N.A. and **Manivel, P.**, 2020. Potential of organic nutrient sources for improving yield and bioactive principle of Ashwagandha (*Withania Somnifera*) through enhanced soil fertility and biological functions. *Communication in Soil Science and Plant Analysis*, DOI: 10.1080/00103624. 2020. 1729368. (IF – 1.4).
18. Saha, A., Basak, B.B. and **Manivel, P.**, (2020). Performance of activated carbon derived from *Cymbopogon winterianus* distillation waste for scavenging of aqueous toxic anionic dye Congo red: Comparison with commercial activated carbon. *Separation Science and Technology*, 55 (11): 1970-1983. (IF – 2.5) (NAAS rating – 8.30)
19. Saha, A., Makwana, C. and **Manivel, P.**, 2020. QuEChERS-based gas chromatography-electron capture/ flame photometric detection method for multi-pesticide residues analysis in *Andrographis paniculata*: a popular Indian medicinal herb. *International Journal of Environmental Analytical Chemistry*, 100(15): 1669-1690. (IF – 2.5) (NAAS rating – 8.30)
20. Saha, A., Makwana, C., Meena, R.P. and **Manivel, P.**, 2020. Residual dynamics of azoxystrobin and combination formulation of trifloxystrobin 25%+ tebuconazole 50%-75 W G on isabgol (*Plantago ovata* Forsk.) and soil. *Journal of Applied Research on Medicinal and Aromatic Plants*, 17: 100227. (IF – 2.63) (NAAS rating - 9.8)
21. Basak, B.B., Jat, R.S., Gajbhiye, N.A., Saha, A. and **Manivel, P.**, 2020. Organic nutrient management through manures, microbes and biodynamic preparation improves yield and quality of Kalmegh (*Andrographis paniculata*), and soil properties. *Journal of Plant Nutrition*, 43(4):548-5623. (IF - 2.3) (NAAS rating 7.60).
22. Saha, A., Basak, B.B., Gajbhiye, N.A., Kalariya, K.A. and **Manivel, P.**, 2019. Sustainable fertilization through co-application of biochar and chemical fertilizers improves yield, quality of *Andrographis paniculata* and soil health. *Industrial Crops and Products*, 140: 111607 (IF 6.2) (NAAS rating 11.6).
23. Patel S, Pachhigar K, Ganvit R. Panchal RR, **Manivel P**, Kumar J, Reddy RRN (2020) Exploring flowering genes in isabgol (*Plantago ovata* Forsk.) through transcriptome analysis. *Plant Mol Biol Rep* 39:192-211.
24. Dutta S, Kumar M, Reddy RRN, Pampaniya N, Ganvit R, **Manivel P**, Basak BB, Roy S, Bhattacharya BK (2020) Acreage estimation of Isabgol (*Plantago ovata* Forsk) using remote sensing and geographic information system. *International Journal of Minor Fruits, Medicinal and Aromatic Plants* 6 (2): 88-95.
25. Patel S, Panchal RR, **Manivel P** and Reddy RRN (2020) Identification of reference genes for normalization of gene expression during flowering in isabgol (*Plantago ovata* Forsk.). *Academia Journal of Medicinal Plants* 8(12): 001-011.

26. Shivakumara KT, Venkatesan T, Keerthi MC, Shashank PR, Pradeeksha N, Polaiah AC, Reddy RRN, Saran PL and **Manivel P** (2021) Occurrence of perilla leaf moth, *Pyrausta panopealis* on sweet basil *Ocimum basilicum* in India. Journal of Environmental Biology **42(2):265-270**. DOI: [10.22438/jeb/42/2/MRN-1512](https://doi.org/10.22438/jeb/42/2/MRN-1512)
27. Patel J, Reddy RRN, Ganvit R, Pachhigar K, Patel S, **Manivel P**, Sharma S, Singh R, Thondaiman V, Kumar S (2020) Quantification of two biologically active anthraquinones Emodin and chrysophenol in *Cassia tora* seed extracts. Medicinal Plants 12 (4): 640-647.
28. **Manivel, P.**, Deore, H.B. and Nagaraja Reddy, R. 2018. Inheritance of morphological characters in Isabgol (Plantago ovata Forsk.). Academia Journal of Medicinal Plants 6(5): 91-95.
29. **Ponnuchamy Manivel**, Rama Reddy Nagaraja Reddy and Harshal Deore. 2017. Genetic diversity for root yield and its component traits in ashwagandha (Withania somnifera (L) Dunal) pure lines derived from JA 134 population. Int. J. Curr. Microbiol. App. Sci. 6(4): 1694-1710. (<https://doi.org/10.20546/ijcmas.2017.604.204>).
30. Nagaraja Reddy Rama Reddy, Rucha Harishbhai Mehta, Palak Harendrabhai Soni, Jayanti Makawana, Narendra Athamaram Gajbhiye, **Manivel Ponnuchamy** and Jitendra Kumar. 2015. Next generation sequencing and transcriptome analysis predicts biosynthetic pathway of sennosides from Senna (Cassia angustifolia Vahl.), a non-model plant with potent laxative properties. PLoS One. 10(6): e0129422. (NAAS Rating 8.74).

Awards/ Honours/ Recognitions

- **Board Member** – TNAU Coimbatore (Nominated by Hon. Governor of TN)
- **Chief Advisor** – Tamil Nadu State Medicinal Plant Board, Chennai
- **Best Scientist (Medicinal plants) 2024** – (Given by Hon. Governor of Tamil Nadu)
- **Head (i/c), ICAR-NIRCA Research Station, Veda sandur** (2020 to 2023 and 2025- continuing)
- **PPVFRI Technical Advisory Committee** (2023) – Member
- **Vice-President**, Indian Society of Plant Breeders
- **Executive Committee Member**, ISTS, Rajahmundry
- **Resource person** in many conference/seminars, and training.
- **Best scientist** award: 2016
- **Best citizen** of India award: 2015
- **President**: Medicinal and Aromatic Plants Association of India (MAPAI), Directorate of Medicinal and Aromatic Plants Research, Anand.
- **Vice-President**, Indian Society of Plant Breeders
- **Executive Committee Member**, ISTS, Rajahmundry
- **Chief Editor**: Open Access journal of medicinal and aromatic Plants
- **Countries Visited**: USA, Germany, Singapore, Philippines, Malaysia, Japan and Nepal