

Résumé of Dr. Shesh Dhar Pandey

1. Personal Details

Name	:	Shesh Dhar Pandey
Designation & Discipline	:	Principal Scientist, Horticulture
Correspondence address (preferably official)	:	National Research Centre for Litchi (ICAR)
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2. Qualifications (Highest degree)

	Year	Institute/ University	Subject (Specialization)
Ph.D.	1989	N.D.University of Agri. Tech. Kumarganj, Faizabad, U.P.	Horticulture
M.Sc.	1983	N.D.University of Agri. Tech. Kumarganj, Faizabad, U.P.	Horticulture

3. Research Projects (Ongoing projects)

Details such as Title, PI/Co-PI, Allocation, Duration etc.	Salient accomplishment
Development of sustainable production As PI	
Effect of graded level NPK on vegetative and reproductive character of litchi cv. Shahi and China As PI (Project Started from 2008)	Available n kg/ha varied from 93.78 kg/ha to 161 kg/ha in different treatment combinations. Whereas, leaf N content varied from 1.53 % to 1.93 % and highest dose of nitrogen (100 g incremental) showed maximum leaf N content. Plants are appearing in reproductive phase.
Standardization of organic inputs for litchi As PI (Project Started from 2006)	Application of 20kg FYM + 2KgVermicompost + 1 Kg Neem cake + bio fertilizers showed better growth performance. Nimbicidine and Vermiwash were sprayed as plant protection measures.
High Density Planting in litchi As PI (Project Started from 2007)	In high density planting growth observations showed significant response to different planting densities. Increased plant height in Ultra density planting (2 x 2 m) followed by 4 x 4 m was observed in comparison to wider spaced plants (10 x 10 m and 8 x 8 m). However, plant girth was recorded minimum in ultra density planting (18.55 cm) and maximum in 6 x 4 m density (22.60 cm) with plant spread. Plant canopy started over lapping in 2 x 2 m spacing.
Standardization of pruning intensity in high density planting of litchi (Project Started from 2010) As PI	New experiment proposed in two planting densities (2 x 2 and 4 x 4 m) with 8 treatment combinations.
Studies on effective utilization of interspaces in young bearing litchi orchards for income and soil health improvement. As Co PI (project started from 2010-13)	<ul style="list-style-type: none"> ➤ Healthy and vigorous litchi plants and intercrops were found in the experiments. ➤ Laboratory facilities for nutrient analysis were developed ➤ Samples were collected from litchi orchards for studying the nutrient uptake.

4. Publications (Important research publications)

Research Work

1. M.Sc. (Ag.) Thesis Title: Pre and Post- harvest application of ethephon on ripening and quality of papaya (*Carica papaya*) cv. Pusa Dwarf.

2. P.hd. Thesis Title: Salt tolerance studies in ber (*Zizyphus* sp.).

Published papers

1. Dwivedi, R.; R. K. Pathak, and **S.D.Pandey**. (1990). Effect of various concentration of urea on crop regulation in guava (*Psidium guajava* L.) cv.Sardar.Prog.Hort.22 (1-4): 134-139.

2. Dwivedi, R.; R. K. Pathak, and **S.D.Pandey**.(1991).Effect of season on the vegetative and reproductive attributes of guava fruits cv.Sardar.Indian. J.Hort.48 (2): 100-04.

3. **Pandey, S.D.**; Pathak, R.K. and Dwivedi, R. (1991). Effect of sodicity and salinity levels on chlorophyll, free proline and amino acid contents in ber leaves. The Hort. J.4 (1): 33-36.

4. **Pandey, S.D.**; Pathak, R.K.and Awasthi O.P. (1993) Effect of salinity levels on nutrients status in ber. Indian J.Hort.50 (1): 46-48.

5. A.wasthi, O.P.; Pathak, R.K.and **S.D. Pandey**. (1994). Effect of sodicity and salinity levels on survival and total chlorophyll content of ber genotypes. The Hort. J. 7(1): 51-54.

6.Awasthi, O.P.; Pathak, R.K.and **S.D.Pandey**. (1995). Effect of sodicity and salinity levels on four scion cultivars budded on Indian jujube (*Z.mauritiana*). Indian.J.Agric.Sci.65 (5): 363-70.

7. Rajput, S.S. and **Pandey, S.D.** (1997). Studies on physicochemical characteristics of some mango cultivars under chhattisgarh region of Madhya Pradesh.The Hort .J10 (1) 9-14.

8. Awasthi, O.P.; Pathak, R.K.and **S.D. Pandey**. (1997). Effect of sodicity and salinity On survival and nutrient status of four scion cultivar budded on Indian jujube (*Z.mauritiana*). Trop.Agric. (Trinidad) 74(3): 238-42.

9. Agrawal, S.; **S.D.Pandey** and B.L.Tiwary (1997). Studies on the effect of high status of N.and Kon qualitative character of in – vitro banana fruit cv. Robusta. The Orissa J. Hort. 25 (1): 67-72.

10. Sharma, G.L.; B.L.Tiwary and **S.D.Pandey** (! 997). Rapid in-vitro propagation of banana and changes in biochemical constituents at various cultural stages. Indian J.Hort.54 (2): 128-131.

11. Agrawal, Shailendra, **S.D.Pandey** and R.K. Patel (1998). Influence of higher levels of nitrogen and potassium on growth and yield potential of in-vitro banana cv. Robusta. Mysore J.Agric.Sci.32: 275-80.

12.Tirkey; T. **S.D.Pandey** and G.L. Sharma (1998).Effect of nitrogen levels and time of application of NPK on Yield and quality of in-vitro raised banana cv. Dwarf Cavendish. South Indian Hort. 46(1-2) : 65-67.

13. Rajput, S.S. and **S. D. Pandey** (1998). Physico-chemical changes associated with growth and development of mango fruits. Progressive Hort.30 (1-2).

14. Awasthi, O.P.; Pathak, R.K.and **S.D. Pandey**. (1999). Anatomical variation leaf lamina of ber seedlings at different sodicity levels. Indian J.Hort.

15. Patel; R.K. S.Agrawal and **S.D.Pandey** (1999). Effect of split application of NPK with varying levels of nitrogen and potassium on bunch characters of banana cv. Dwarf Cavendish as first ratoon crop. South Indian Hort.47 (1-6) 162-163.

16. **Pandey; S.D.**, K.J.Jayabhaskaran, R.H.Laxman, V.P.Shanti and M.M.Mustaffa (2001). Effect of irrigation N fertigation and planting geometry on growth and yield of banana cv. Nendran. South Indian Horticulture Vol.49 pp 76-79.

17. Jayabhaskaran; K.J. **S.D. Pandey**, M.M.Mustaffa and S. Sathiamoorthy (2001). Effect of different organic manures with graded levels of inorganic fertilizers on ratoon of Poovan banana. South Indian Horticulture Vol.49 pp105-108.

18. Jayabhaskaran; K.J. **S.D. Pandey**, M.M.Mustaffa and S. Sathiamoorthy (2001). Effect of FYM and gypsum with graded levels of K application on banana grown in saline sodic soils. *Journal of Potassium Research*, **17**:101-106.

19. Selvarajan, R., S. Sathiamoorthy, **S.D.Pandey** and D. Dhansekar (2001). Incidence of sigatoka leaf spot disease in

- relation to different plant densities in cultivar Robusta. South Indian Horticulture Vol.49 pp 43-46.
20. **Pandey, S.D.**, K.J. Jeyabaskaran, R.H. Laxman and M.M. Mustaffa. 2001. Effect of different moisture regimes and N fertigation on growth, yield and quality of Poovan banana. *Progressive Horticulture*, **33** (2): 130-133
21. Tirkey, T.; S.Agrawal and **S.D.Pandey** (2001). Effect of organic manures on growth, maturity and yield of banana cv. Dwarf Cavendish. South Indian Horticulture Vol.50 (1-3) pp19-24.
22. Jeyabaskaran, K.J., **S.D. Pandey** and G. Gomadhi. 2003. Effect of potassium-rich cement kiln flue dust and distillery effluent as substitute for potassium fertilizers on growth, yield and quality of "Ney Poovan" banana (*Musa paradisiaca*). *Indian Journal of Agricultural Sciences*, **73**(12): 641-644
23. Jeyabaskaran, K.J., **S.D. Pandey** and G. Gomadhi. 2004. Integration of potassium-rich cement kiln flue dust and distillery effluent in potassium fertilization for increasing banana production. *The Andhra Agricultural Journal*, **50**: 418-420.
24. Jeyabaskaran, K.J., **S.D. Pandey** and G. Gomadhi. 2005. Substitution of potassium-rich cement kiln flue dust and distillery effluent for potassium fertilizers in banana cv. Ney Poovan. *Journal of Potassium Research*, 21:
25. Jeyabaskaran, K.J., **S.D. Pandey**, M.M. Mustaffa and S. Sathiamoorthy (2005). Diagnosis and recommendation integrated system for monitoring status of nitrogen, phosphorus and potassium of 'Nendran' banana (*Musa paradisiaca*). *Indian Journal of Agricultural Sciences*, **75**(7): 432-434.
26. Jeyabaskaran K.J., **S.D. Pandey** (2008). Effect of foliar spray of micronutrients in banana under high soil pH condition. *Indian J. Hort.* 65(1):102-105.
27. Selvarajan, R., V. Balasubramanian. K.J. Jaybaskaran, **S.D. Pandey** and M.M. Mustaffa (2009). Management of bract mosaic disease through higher dose of fertilizers in banana cv. Ney Poovan (AB). *Indian J. Hort.* 66(3): 301-305
28. Amrendra Kumar, **S.D. Pandey**, Vinod Kumar and Vishal Nath (2011). Evaluating Potting media for production of quality planting materials of litchi (*Litchi chinensis* Sonn). *Bihar Journal of Horticulture* 1(1) pp 48-50.
29. Vishal Nath, Amrendra Kumar and **S.D. Pandey** (2011). Current Scenario and Outlook for Future of Litchi Industry in India. *Souvenir National Seminar on Development of Horticulture in Bihar Issues and Strategies*, RAU, Pusa, Bihar, January 28-29th, 2011 pp 57-61.
30. Vishal Nath, **Amrendra Kumar** and S.D. Pandey (2011). Canopy Architecture management for Precision Farming in Fruits. *Souvenir National Seminar on Biodiversity of Tropical and Sub Tropical Fruit Crops*, Orissa Horticultural Society, OUAT, Bhubaneswar, Orissa, February, 27-28, 2011 pp30-36.

Paper presented in Symposia / Seminar/ conferences	: 48
Popular Articles	: 40
Technical Bulletins	: 09
Book Chapters / Manuals	: 08
Books	: 05

5. Important Research Contributions in Brief

Working on:

- Standardization of planting densities (High density planting), canopy management, pruning for Quality litchi production
- Standardization of nutrient requirement of pre bearing and bearing plants

- Nutrient scheduling through fertigation
- Standardization of organic inputs for litchi production

Associated:

- ❖ Developed cropping system model for pre-bearing litchi orchards
- 1. Fruit based model: Litchi + banana (Main + R1+R2) has high potential of income generation up to 3 year
- 2. Vegetable based model up to age of 8th year in new orchards:
 - Litchi + Gladiolus- Okra
 - Litchi+ Cowpea-potato-onion
- ❖ Standardized potting mixture for commercial production of poly-bag raised litchi gooties/ layers
- ❖ Standardized growth regulator concentration for bearing regulation in litchi
- ❖ Standardized growth regulator concentration for control of fruit drop in litchi
- ❖ Standardized the concentration of micronutrient for improvement of yield and quality of Shahi litchi
- ❖ Fine tuned the harvesting time and pre-cooling period for extending shelf life of fruits.

Banana

- ❖ Standardized package of practices for tissue cultured banana for wet land system of cultivation
- ❖ Developed Irrigation and fertigation schedule for the Nendran cultivar of the banana
- ❖ Developed Irrigation and fertigation schedule for the Poovan cultivar of the banana.
- ❖ Developed New high density planting system for Robusta cv.for wetland system of cultivation
- ❖ Developed fertigation schedule for the Robusta cultivar of the banana.
- ❖ Standardized bunch covering in Robusta banana and explored the possibility of banana export (NATP).
- ❖ Demonstrated high density planting and fertigation on farmer's field.

6. Membership of Professional Societies

- The Horticultural Society of India, New Delhi, since 2000
- Indian Society of Horticultural Research and Development, Utrakhand, since 2000
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S.D.Pandey, Principal Scientist

Signature of the Scientist