Bio data of the Scientist

Division/Section: CROP IMPROVEMENT

A. Personal information

1.Name (With Title): Dr. P. Murugesan

a. Qualification: B. Sc (Hort.), M.Sc (Agri.,) and Ph D (Agri.,)

2. Designation: Principal Scientist (Vegetable/Spices/Fruits/FLS)

3. Address (Personal): 175, AWRA (Ayurkonam Welfare Residential Association), Via Indira Nagar (Peroorkada to Nettayam road, Peroorkada, Trivandrum 695005

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(a) Residence : 0471 2439676(b) Intercom 408 (c) Mobile 9447213281

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6. Countries visited:

- Papua New Guinea, Australia, Singapore, Malaysia and Sri Lanka

B. Professional information

1. Area of specialization:
   - Breeding for hybrid seed/genetic stock production and PGR management in horticultural crops
2. Area of interest:
   - Wild spices their propagation techniques, diversity, characterisation and conservation of horticultural crops
3. Number of institute projects completed (Add list):
   - Collection conservation evaluation and utilisation of oil palm germplasm (PI)
   - Dissemination of Technology & ICT Applications in Oil Palm Sector(Co-PI)
   - Genetic enhancement of oil palm (Co-PI)
4. Number of Institute projects being handled (Add list):
   Under process
5. Number of externally funded projects completed (Add list):
   - Acceleration of germination in oil palm hybrids seeds (AP Cess fund) PI
   - Re-establishment of cyclone affected oil palms in West Godavari district of Andhra Pradesh (AP Cess fund) Co-PI
   - Utilisation of Thodupuzha germplasm for augmenting productivity of oil palm (DAC, GOI) (PI)
   - Strengthening of seed gardens for Indigenous seed production (DAC, GOI) (PI)
   - Seed Mega Project-Seed Production in Agriculture Crops and Fisheries (ICAR-Network project) (Nodal officer)
   - CRP-Agro Biodivesrsity (ICAR Network project) PI
   - International collaborative research project on oil palm germplasm exchange between India and Malaysia (PI)
   - Screening through genomic in situ hybridisation technique and seed desiccation tolerance of selected interspeicifc hybrids of oil palm in planta and *in vito* (DST) (PI)

- UNDP Sub programme Breeding for seed production (Associate)

6. Number of externally funded projects being handled (Add list): Nil

7. Number of students guided for a) Ph.D___Nil_____b) M.Phil__Nil__c) M.Sc_Nil___

8. Number of students being guided for a) Ph.D___Nil___b) M.Phil_Nil___c) M.Sc Nil__

8.a. information about the students under your guidance Nil

9. Information on guide ship Nil

10. Number of Research papers (Add list): 20 important

1. **Murugesan, P**., P. Padma, U. Nagamangala, R. K. Mathur, and M. Kochu Babu. (2008).Preliminary investigations on oil palm tenera inter se progenies with special emphasis to *pisifera.* Indian Journal of Horticulture 65(2): 214-219.
2. **Murugesan, P**., and S. Gopakumar. Variation in phenotypic characteristics of ASD Costa Rica hybrids of oil palm in India. (2010): Indian Journal of Horticulture 67(2): 152-155.
3. **Murugesan, P**., and Shareef, M. (2014). Yield, bunch quality and vegetative traits of American oil palm (Elaeis oleifera, HBK) population in India. Indian Journal of Horticulture, 71(1), 23-27.
4. **Murugesan, P**., Bijimol, G., and Haseela, H. (2008). Effect of different substrates on growth of germinated oil palm hybrid seeds. Indian Journal of Horticulture, 65(4), 477-480.
5. **Murugesan, P**., Haseela, H., Gopakumar, S and Shareef, M. V. M. (2011). Fruit and seed development in Elaeis oleifera (HBK) Cortes of Surinam origin. Indian Journal of Horticulture, 68(1), 28-30.
6. **Murugesan, P**., Ravichandran, G., and Shareef, M. (2015). Seed germination and ultra structural changes in oil palm (*Elaeis guineensis*) hybrid seed influenced by heat treatments. Indian Journal of Agricultural Sciences, 85(11), 1419-1423.
7. **Murugesan, P**., Shareef, M., Haseela, H., & Ravichandran, G. (2014). Hybrid seed germination in oil palm (Elaeis guineensis) affected by innovative dormancy breaking techniques. Indian Journal of Agricultural Sciences,84(12), 1542-5
8. **Murugesan, P**., Gopakumar, S., & Haseela, H. (2011). Performance of tenera× tenera progenies derived from Thodupuzha (Kerala) oil palm germplasm II. Bunch quality components. Indian Journal of Horticulture, 68(3), 303-306.
9. **Murugesan, P**., Ravichandran, G., and Shareef, M. (2015). Effect of mechanical seed scarification on germination and seedling growth of inter specific hybrids of oil palm (*Elaeis oleifera*). Indian Journal of Agricultural Sciences, 85(3), 374-7.
10. **Murugesan, P**., Rani, K.M., D Ramajayam, K.S.K., Mathur, R., Ravichandran, G., Kumar, P.N. and Arunachalam, V., (2015). Genetic diversity of vegetative and bunch traits of African oil palm (Elaeis guineensis) germplasm in India. Indian Journal of Agricultural Sciences, 85 (7), pp.892-5.
11. **Murugesan, P**., Shareef, M., Haseela, H., and Ravichandran, G. (2014). Hybrid seed germination in oil palm (Elaeis guineensis) affected by innovative dormancy breaking techniques. Indian Journal of Agricultural Sciences, 84(12), 1542-5.
12. **Murugesan, P**., Shareef, M., Haseela, H. and Mathur, R.K (2013) Seed quality and germination in selected hybrids of oil palm (Elaeis guineensis, Jacq.). Journal of Plantation Crops 41(2):172-176.
13. **Murugesan, P**., H. Haseela, M. Shareef and S. Gopakumar (2011). Fruit and seed development in Elaeis oleifera (HBK) Cortes under tropical climate of Kerala, South India. Journal of Plantation Crops, 39(1): 73-77.
14. **Murugesan, P**, J. Meenu Merlin, Dipu Joseph, S.J. Bindu, R.S.N. Pillai and K.U.K. Nampoothiri (2011).Yield potential and phenotypic variation of fruit size and seed characteristics of Indian oil palm duras under rainfed conditions. Journal of Plantation Crops, 39 (1): 114-118

15. **Murugesan, P**., Balachandran, C., Pillai, R.S.N. and Ravindran, P.S. 2004. Performance of indigenous and Costa Rican planting materials of oil palm (Elaeis guineensis, Jacq) in the Coastal district of Andhra Pradesh. Journal of Plantation Crops, 32(Suppl):16-19.
16. **Murugesan P** R.K.Mathur, G.Bijimol and M.R.Kumar, (2008). Effect of extended heat treatment on germination and seedling growth in oil palm (Elaeis guineensis, Jacq.) var dura mother palms Journal of Plantation Crops 36(1): 45-48
17. **Murugesan, P**., Balachandran, C., Pillai, R.S.N. and Ravindran, P.S (2004) Performance of indigenous and Costa Rican planting materials of oil palm (*Elaeis guineensis*, Jacq) in the Coastal district of Andhra Pradesh. J. of Plantation Crops, 32 (Suppl): 16-19.
18. **Murugesan, P**, R.K.Mathur, R.S.N.Pillai and M.Kochu Babu, (2005). Effect of accelerated ageing on seed germination in oil palm, Seed Technology Journal, 27(1): 108-112
19. Ravichandran, G and **P. Murugesan** (2016). Effect of chemicals on disintegration of the operculum in oil palm (*Elaeis guineensis*) seeds for early germination. Seed Science and Technology, 44(3): 475-485
20. **Murugesan**,P, G M Aswathy, K Sunil Kumar, P Masilamani, Vinod Kumar, V Ravi (2017). Discrimination of oil palm genetic resources for abiotic stress . Ind. J of Agricultural Sciences 87(5):571-9

11. Number of Books/Book chapters (Add list): 41

1. **Murugesan P,** 2003. Harvesting, post harvest handling and conditioning of fruit and seed in ash gourd (*Benincasa hispida* (Thunb) Cogn), Tamil Nadu Agricultural University, Coimbatore-3, 2003, Tamil Nadu Agricultural University. Page 230.
2. **Murugesan**, **P,** 1994. Studies on certain seed technological aspects of Bellary (*Allium cepa* L) and Aggregatum onion, 1994, Tamil Nadu Agriculture University. Page 124.
3. Rethinam, P, V.M Reddy, P.Kalidas, and S. Chander Rao, 1999. Oil palm do how know how? Tamil translation and Photographs: **P. Murugesan** National Research Centre for Oil palm, Pedavegi, Andhra Pradesh 1997 & 1999, National Research Centre for Oil palm, Andhra Pradesh. Page16.
4. Rethinam, P., **P.Murugesan** and S. Mosai, 2000. *Oil palm (Introduction and Technology)* Sri Viknesh printers West Mambalam, Chennai-600033 (Tamil), 2000, Sri Viknesh printers Chennai- 600033, Page 79.
5. Vanangamudi K.Natarajan and **P. Murugesan,** 2006. Water Management for quality seed Production In: Advances in seed Science and Technology Vol I Recent trends in seed Technology and Management (Eds K.Vanangamudi *et al*) Agrobios (India) Jodhpur, 2006, Agrobios (India) Jodhpur, 435 – 442 ISBN 81-7754-258-
6. **Murugesan, P** and K.Vanangamudi, 2006. **Okra** In: Advances in seed Science and Technology Vol II quality Seed Production in Vegetable Crops (Eds K.Vanangamudi *et al*) Agrobios (India) Jodhpur 295-329 ISBN 81-7754-285-0.2006, Agrobios (India) Jodhpur.
7. Vanangamudi K, A.Bharathi and **P. Murugesan,** 2006. Seed hardening for drought resistance In: Advances in seed Science and Technology Vol I Recent trends in seed Technology and Management (Eds K. Vanangamudi *et al*) Agrobios (India) Jodhpur 196-200 ISBN 81-7754-258-3, 2006, Agrobios (India) Jodhpur.
8. Vanangamudi, K., A. Bharathi and **P. Murugesan, 2006.** Quality parameters for different categories of seeds and their maintenance In: Advances in seed Science and Technology Vol I Recent trends in seed technology and Management (Eds: K.Vanangamudi et al) Published by Agrobios (India) Jodhpur. P 516-522 ISBN 81-7754-258-3 2006, Agrobios (India) Jodhpur.
9. Saravanan, T, **P. Murugesan**, 2008. **Areca nut** In: Advances in Seed Science and Technology, Vol. V. Quality seed production in Spices, Plantation, Medicinal and aromatic crops (K.Vanangamudi and K.Natarajan eds). Jodhpur, Agrobios, 960pISBN 81-7754-325-3, 2008, Agrobios (India) Jodhpur.
10. Saravanan, T, **P. Murugesan**, 2008. **Bishops weed**. In: Advances in Seed Science and Technology, Vol. V. Quality seed production in Spices, Plantation, Medicinal and aromatic

crops (K.Vanangamudi and K.Natarajan eds). Jodhpur, Agrobios,ISBN 81-7754-325-3, 2008, Agrobios (India) Jodhpur.

11. Rethinam P, **P. Murugesan** and M.V. Prasad, **Annual Report** 1997-98 (Edited and published by P.Rethinam), National Research Centre for Oil Palm, Pedavegi, Andhra Pradesh. 1998, National Research Centre for Oil Palm, Andhra Pradesh.
12. Prasad, M.V, K.Suresh and **P.Murugesan**, **Annual Report** 1998-99 (Edited and published by P.Rethinam), National Research Centre for Oil Palm, Pedavegi, Andhra Pradesh. 1999, National Research Centre for Oil Palm, Andhra Pradesh. Page 58.
13. Mathur R.K., **P. Murugesan** and R.S.N. Pillai 2003, Annual Report (Edited and published by M.Kochu Babu) National Research Centre for oil palm ***Annual Report*** *(2002-03)* Pedavegi, West Godavari District, Andhra Pradesh, 2003, National Research Centre for Oil Palm, , Andhra Pradesh. Page 91.
14. Mathur R.K., **P. Murugesan** and R.S.N. Pillai 20 **Annual Report** 04 (Edited and published by M.Kochu Babu) National Research Centre for oil palm *Annual Report (2003-04)* Pedavegi, West Godavari District, Andhra Pradesh, 2004, National Research Centre for Oil Palm, , Andhra Pradesh. Page 98.
15. Mathur R.K., **P. Murugesan** .,K.Suresh and R.S.N. Pillai 2005 Annual Report (Edited and published by M. Kochu Babu) National Research Centre for oil palm ***Annual Report*** *(2004-05*) Pedavegi, West Godavari District, Andhra Pradesh, 2005, National Research Centre for Oil Palm, Andhra Pradesh. Page 88.
16. R.S.N.Pillai and **P.Murugesan**, 2000. **Report on training** at Dami oil palm Research station Papua New Guinea on Breeding for oil palm seed production sponsored by *UNDP(09-20 October, 2000)* published by National Research Centre for oil palm, Pedavegi-534 450, Andhra Pradesh, 2000National Research Centre for Oil Palm, Andhra Pradesh. P74,
17. **Murugesan, P**. 2003. Study leave report , National Research Centre for Oil Palm, Pedavegi-534450, Andhra Pradesh, 2003, National Research Centre for Oil Palm, Andhra Pradesh, P250.
18. Thomas Varghese, P., **P. Murugesan**, 2005, Feasibility report on Oil Palm cultivation in Dindigul and Virudhunagar districts of Tamil Nadu, National Research Centre for Oil Palm, Pedavegi- 534450, West Godavari, Andhra Pradesh, 2005, National Research Centre for Oil Palm, Andhra Pradesh, P 27.
19. Pillai, R.S.N, S.Sunitha and **P.Murugesan**, 2006. Report of the team visit to Karinilam scheme, Kallara and Oil palm seed garden, Thodupuzha, National Research Centre for Oil Palm, Regional Station, Palode, Pacha-695562, Thiruvananthapuram, Kerala, 2006, National Research Centre for Oil Palm, Regional Station, Palode, Kerala, P21.
20. Rethinam, P, K.Kalidas, V.M.Reddy and S.ChanderRao 1997. Visiion2020- NRCOP Perspective Plan (Published by Dr.P.Rethinam) Hindi Translation: P.C.Tripathy, Charts: Dr.P. Kalidas and **P.Murugesan**, 1997, National Research Centre for Oil Palm, Andhra Pradesh, P 80.
21. **Compact Disc: Murugesan, P**, T. Krishna kumar, R.S.N. Pillai, 2007. Oil Palm hybrid seed production at NRC Oil Palm Regional Station, Palode (Published by M. Kochu Babu, the Director), National Research Centre for Oil Palm, 2007, National Research Centre for Oil Palm, Andhra Pradesh, P 10.
22. Vanangamudi, K, A. Bharathi and **P. Murugesan** 2003. Seed hardening for drought resistance In: Training manual on Seed Coating and Invigoration 22-24 Jan, 2003 (ICAR-NSP (Crops), Department of Seed Science and Technology, Tamil Nadu Agriculture University, Coimbatore-3 PP-1-6, 2003, Tamil Nadu Agriculture University, P 6.
23. **Murugesan, P** and T. Krishnakumar, 2008. Indigenous oil palm hybrid seed production, In: Compendium of lectures on Oil Palm Hybrid Seed Production(Compiled by M.V. Prasad and J. Jameema) Training conducted at NRC for Oil Palm, Regional Station, Palode, New Delhi**,** 2008**,** National Research Centre for Oil Palm, P 10.
24. **Murugesan, P and** R.K.Mathur, 2004**.** Proceedings of Meet on Oil Palm Hybrid Seed Production(2004-05)**,** 2004 National Research Centre for Oil Palm, P 15.

25. **Murugesan. P**, R.K.Mathur and R.S.N.Pilliai, 2004. Hybrid seed production in Oil Palm. In compendium of lectures on Oil Palm Production Technology(Edited by M.V.Prasad and D.G.S. Rayapa Raju), 2004, National Research Centre for Oil Palm, PP17-22.
26. Rethinam, P, **P.Murugesan**, 1997. Oil Palm hybrid seed production(Published by Dr.P.Rethinam) Compendium of lectures for TMOP Training programme at NRCOP, Pedavegi, Andhra Pradesh during 21-22,January,1997, National Research Centre for Oil Palm, P 37.
27. **Murugesan**, P, 2005. Effect of heat treatment and its duration of Oil Palm (*Elaeis guineensis*,Jacq) var dura seed in NRC Oil Palm News Jan-June, 2005, National Research Centre for Oil Palm, P1.
28. **Murugesan**, P 2005. Extended pre-heating and its duration on germination and seedling vigour of dura mother palms used for seed production in NRC Oil Palm News Jan-June 2005, National Research Centre for Oil Palm, P1.
29. **Murugesan, P**, P 2005. Seed descriptor analysis in oil palm hybrid varieties NRC Oil Palm News 10(1): 3, 2005, National Research Centre for Oil Palm, P1.
30. Kochu Babu, M, R.S.N. Pillai and **P. Murugesan,** 2004, Production of quality planting materials in Oil palm in India, Proceedings of First Horticulture Congress (Edited by K.L.Chadha), The Horticulture Society of India, P 265-272.
31. Rethinam, P., **P. Murugesan** and S.Mosai, 2000, *Oil palm (Introduction and Technology)* (Tamil).
32. SriViknesh printers West Mambalam, Chennai-600033, P 79.
33. R.K. Mathur **P. Murugesan** R.S.N. Pillai and S. Kapashi. 2006, Genetic architecture of bunch weight and bunch number in young oil palm In Multipurpose Trees in the Tropics ISBN: 81-7233-424-9. (V.P.Tewari and S.L.Srivastava) Jodhpur: Scientific Pub, P10.
34. **Murugesan, P.** 2007, *Elaeis guineensis* In: Advances in Seed Science and Technology Vol 4 Forest Tree seed Production, (Eds K. Vanangamudi *et al*) Agrobios publishers, Jodhpur India pp 176-216, P 35.
35. Saravanan, T, **P. Murugesan**, 2008, Areca nut In: Advances in Seed Science and Technology, Vol. V. Quality seed production in Spices, Plantation, Medicinal and aromatic crops, (K.Vanangamudi and K.Natarajan eds). Agrobios publishers, Jodhpur India pp 960.
36. Vanangamudi A. Bharathi and **P. Murugesan**, 2002, Quality parameters for different categories of seeds and their management In: Plant Breeding Approaches for quality Improvement in Crops (Eds: C. Surendran, K.Koodalingam D.Packiaraj c.Vanniarajan and M. Kumar), Centre of Advanced Studies in Genetics and Plant Breeding, Tamil Nadu Agricultural University, Coimbatore-3, pp 557-467.
37. **Murugesan, P** and K.Vanangamudi, 2006, Okra In: Advances in seed Science and Technology Vol II quality Seed Production in Vegetable Crops (Eds K.Vanangamudi *et al*), Agrobios publishers, Jodhpur India. Pp 295-329.
38. Rethinam, P., **P.Murugesan**, 2000, *Oil palm nursery manual* (Ed. P.Rethinam) published by National Research Centre for Oil Palm, Published by New Image Graphics Vijayawada-2. P 48.
39. Rethinam, P., P.Murugesan and R.S.N.Pillai, 2000, *Oil palm Hybrid seed production* (Ed. P.Rethinam) Published by National Research Centre for Oil Palm, New Image Graphics Vijayawada-2. P 48.

12. Number of Technical Bulletins (Add list): 21

1. **Murugesan, P** and K.Vanangamudi, K, 2005, Techniques to extend the storability of Areca nut seed Indian *Journal of Areca nut spices & Medicinal plants.* 6(2): 51-54, P7.
2. Vanitha C. A.Vijayakumar, K.Vanangamudi and **Murugesan P**. 2002. Post harvest seed techniques to produce quality planting material in Cocoa (*Theobroma cocoa*), Proceedings of Placrosym XV: pp 147-153

3. Mathur, R.K, K.Suresh, **Murugesan.P,** K. Parimala, Suja Nair and M.Ravikumar. 2002, Genetic variability in Oil palm Hybrids for Morpho-physiological Characteristics, Proceedings of Placrosym XV: pp 134-136
4. **Murugesan P,** K.Vanangamudi and R. Umarani**,** 2002**,** Evaluation of viability of oil palm (*Elaeis guineensis*, Jacq) seeds by tetrazolium test and comparison with germination and in vitro culture results. Proceedings of Placrosym XV: 246-250
5. **Mathur,R.K,P.Murugesan and M.Jayanthi,** 2008**,** Status of Oil palm hybrid seed production, Souvenir& Abstract National Conference on Oil Palm Oil Palm for farmers Prosperity and edible oil security**, p** 6.
6. Mathur. R.K, Pillai, RSN and P.Murugesan, 2005**,** Oil Palm genetic Resources in India – evaluation and Utilistaion. In Proceedings of Agriculture, Biotechnology & Sustainability Conference on Technological breakthrough and commercialization-The way forward, PIPOC-International Palm Oil Congress, during 25-29 Sept at MBOP,Kuala Lumpur, Malaysia, pp 742-757.
7. Murugesan,P, mathur,RK, Pillai,R.S.N,Ravi Kumar,M,Kapashi S, Hegde M and Kochu Babu,M. 2005, Oil Palm selection and commercial seed production in India In Proceedings of Agriculture, Biotechnology & Sustainability Conference on Technological breakthrough and commercialization-The way forward, PIPOC-International Palm Oil Congress, during 25-29 Sept 2005 at MBOP,Kuala Lumpur, Malaysia. pp 768-769.
8. Pillai,R.S.N, R.K.Mathur and **P.Murugesan**, 2005, Oil Palm breeding in India, National seminar on Research & Development of Oil Palm in India. Pp 6-15.
9. S.Muthuramalingam,I.Muthuvel, **P.Murugesan** and V.Sankar, 2001, Effect of spacing and nutrients on bulb yield of seed propagated multiplier onion (*Allium cepa* L.Var Aggregatum Don.), Allium Improvement Vol II, PP 59-64.
10. **Murugesan, P**. and P.Rethinam, 2001, Culling in oil palm nursery. *The Hindu* 14, June, 2001. P1.
11. Vanangamudi, K and **P.Murugesan**, A.Bharathi and P.Natesan, 2002, Establishment of seed Testing labs and their functions in Tamil Nadu state, *Valarum Velanmai* May: 2002, TNAU Coimbatore (Tamil), P4.
12. **Murugesan, P**., K.Vanangamudi and Panneerselvam, 2002, Fruit Bunch harvest in oil palm, *Valarum Velanmai* December: (Tamil) TNAU, Coimbatore, P5.
13. **Murugesan, P** and K. Vanangamudi, 2003, Test to know the viability of oil palm seeds. *ICAR NEWS* October-December, P2.
14. **Murugesan, P.,** 2004 Water deficit symptoms in Oil Palm. The *Hindu* 25th March, 2004, P 1.
15. **Murugesan,P**., Nagamangala, U.,Bijimol,G. & Padma, P. 2005, Importance of right harvesting stages of oil palm bunches. *Annadata*, 37(2): 44-45 (Telugu)**, P** 2.
16. Murugesan.P,R.K.Mathur, R.S.N.Pillai and M.Kochu Babu, 2005, Rare occurrence of precocity in Oil palm *Dura* x *pisifera* progeny seedling. *ICAR New*s July-September. P1.
17. R.K.Mathur, **P.Murugesan**, R.S.N.Pillai and D.Usha Vani, 2004, Oil Palm hybrid seed Production in a nutshell (Published by M. Kochu Babu, Director), National Research Centre for Oil Palm. P 12.
18. Rethinam, P., R.K.Mathur, **P. Murugesan**, P.Kalidas and V.N.P. Sivaramakrishnan, 2002, Management of cyclone affected oil palm trees. National Research Center for oil palm, p14.
19. **P.Murugesan**,T.Krishnakumar , J.Santhoshkumar, C.Salini, S.Gopakumar,R.K.Mathur, 2008. Quality seed from NRC Oil Palm, Palode, Edited & published Dr.M. Kochu Babu. National Research Center for oil palm, P20.
20. Murugesan, P and Goutham Mandal, 2011. Identification and characterization of three *pisifera* palms. Proceedings of Agriculture, Biotechnology &Sustainability Conference, PIPOC 2011, Malaysian Palm Oil Board, Malaysia, p.84-88.

13. Consultancies offered (Add list and give a brief description):

- Consultancy offered to Oil Palm India Limited for hybrid seed production and establishment of seed garden and seed processing laboratory
- Consultancy offered to Department of Horticulture Govt. of Andhra Pradesh and Karnataka on establishment of seed garden and hybrid seed production

14. Technologies developed (Add list and give a brief description):

Six oil palm genetic stocks were developed and submitted to ICAR-NBPGR for registration. The details are as follows

1. **IC0597686** (DOPR G 22, Palm No.45; Surinam origin; Dwarf *Elaeisoleifera*) for its slow vertical stem growth (15 cm per year), early fruit maturity (4.5 months) and high fruit set of 53.4% than other *oleiferas* traits
2. **IC0595543** (Dwarf tenera between 26.3999D x 25.380P; vide NBPGR code no.E130756) for its slow vertical growth (25 cm per year and compact palm with *tenera* (thin shell) fruit form traits
3. **IC0597688** (DOPRG-44-E-33) for its long bunch stalk (53 cm) trait
4. **IC0597689** (EC382636) for its *virescens* fruits with sterile *pisifera* fruit types (shell less) traits
5. **IC0597687 [**(EC382627; DOPRG53 (61)] for its *virescens* fruit colour with *dura* fruit (thick shell) forms traits
6. **IC0597690** (DOPRG23) for its compact characteristics and excellent bunch quality traits

15. Patents/Copyrights obtained (Add list and give a brief description): Nil

16. Any other information: Nil

Sreekaryam (**P. MURUGESAN)**

29.07.2017