

Bio-data of the Scientist

Division/Section: Regional Centre of Central Tuber Crops Research Institute, ICAR,
Aginia, Bhubaneswar-751019

A. Personal information

1. Name (With Title): ARCHANA MUKHERJEE

1. a. Qualification: M.Sc., Ph.D

2. Designation: Principal Scientist

3. Address (Personal):

Correspondence Address- Dr. Mrs. Archana Mukherjee, Principal Scientist,
Regional Centre of CTCRI, Dumuduma Housing Board
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Permanent Address- C/o- Late Dr. NIL RATAN ACHARYA
Neamatpur, P.O: Sitarampur, Dist: Burdwan -713359,
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4. Phone Numbers:

(a)Residence: 0674-2350427 (b) Intercom _____ (c) Mobile: 09437050427

5. Email: archanapsm2@rediffmail.com

6. Countries visited: Germany

B. Professional information

1. Area of specialization: Genetics and Cytogenetics

2. Area of interest: Plant tissue culture & related techniques, Plant breeding, Horticulture &
Extension

3. Number of institute projects completed (Add list):

Projects handled- 26 [Institutional = 18;As PI -8, Co-PI &Associate-10], [Sponsored= 8;
As PI-4 , Co-PI, Associate-4] & Consult-1.

List of Projects completed

Title of the Project	PI/CO-PI/Asso.	Duration
1. Utilization of <i>in vitro</i> techniques for analytic breeding in sweet potato and cassava .	PI	1987-1993
2. <i>In vitro</i> culture of isolated pollen for haploid induction in sweet potato and cassava	PI	1999-2006
3. Synthetic Seeding and Genetic Transformation Studies in Sweet potato and Taro	PI	2000-2006
4. Micropropagation in yams	PI	2005-2008
5. Cytological and molecular marker studies of <i>in vitro</i> cultures and regenerated plants of tuber crops	PI	2006 -2009
6. Studies on recalcitrancy in <i>Amorphophallus (Amorphophallus paeonifolius)</i> through <i>in vitro</i> cultures	PI	2008-2011

7. Preservation and improvement of tuber crops germplasm through tissue culture	Co-PI	1988-1993
8. Physiology of flowering in aroids	Co-PI	1989-1993
9. Varietal improvement of sweet potato for Eastern India	Co-PI	1993-2006
10. Breeding sweet potato for industrial use and animal feed	Co-PI	2002-2006
11. Nutrient management in tuber crops based cropping systems	Co-PI	2006-2011
12. Distribution of major insect pests of tuber crops and their natural enemies in north eastern hill region of India	Co-PI	2005-2008
13. Development of media support system for Tuber Crops Extension and Training	Associate	2001-2006
14. Tuber crops: Production system diagnosis for eastern and north eastern India.	Associate	2002-2005
15. Development and transfer of appropriate tuber crops technologies for North-Eastern India	Associate	2004 – 2008

4. Number of Institute projects being handled

1. Collection, evaluation, cataloguing and conservation of tuber crops	PI	2005-2013
2. Potentials of aeroponics in tropical tuber crops	PI	2012-2015
3. All India coordinated research project (AICRP) on tuber crops	Co-PI	1999-2013

5. Number of externally funded projects completed (Add list):

Title of the Project	PI/CO-PI/Asso.	Duration
1. ICAR AP Cess Fund project “Integrated approach for selection, induction and characterization for development of salt tolerant sweet potato”	PI	2002-2005
2. NATP-CGP III project “Integrated approach for genetic improvement of taro [<i>Colocasia esculenta</i> (L.) Schott] to develop tolerant lines to biotic and abiotic stresses”.	PI	2002-2004
3. Horticulture and vegetable gardening for food and nutritional security – a sub project under NATP-Increasing production and productivity of life support crop species and allied enterprises of tribal, backward and hilly areas.	Co-PI	2000-2005

4. AP Cess Fund “National Network of <i>Phytophthora</i> diseases of Horticultural Crops (Phytonet) – <i>Phytophthora</i> diseases of Tuber Crops”	Co-PI	1997 - 2002
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6. Number of externally funded projects being handled (Add list):

Title of the Project	PI/CO-PI/Asso.	Duration
1. ‘Development of standards of DUS testing for varietal gene bank in elephant foot yam and taro’	PI	2012-2015
2. ‘International Network for Edible Aroids’ (<i>INEA</i> -Taro) project on ‘ Adapting clonally propagated crops to climatic and commercial changes’	PI	2011-2016
3. Developing DUS Testing Criteria and Varietal Gene Bank Establishment for the Tropical Tuber Crops: Cassava and Sweet potato	Co-PI	2009-2013
4. Livelihood improvement of Tribal farmers through tuber crops technologies under Tribal Sub plan	Associate	2012-2013

7. Number of students guided for a) Ph.D - 2 b) M.Phil c) M.Sc. – 36

8. Number of students being guided for a) Ph.D- 3 b) M.Phil. c) M.Sc. – 1

8. a. Information about the students under your guidance

Name of the student	Course undergoing (Ph.D/M.Phil/ M.Sc)	Title of the project/Thesis	E-mail address
Manas Ranjan Sahoo	Awarded Ph.D	<i>In vivo</i> and <i>in vitro</i> selection, induction and characterization of <i>Colocasia</i> to develop tolerant lines to biotic and abiotic stresses	mrsahoo2004@indiatiemes.com & mrsahoo2004@rediffmail.com
M. Dasgupta	Awarded Ph.D	<i>In vivo</i> and <i>in vitro</i> selection, induction and characterization of sweet potato (<i>Ipomoea batatas</i> L.) to develop tolerant lines to salinity stress	-
A. Poddar	Continue Ph.D	Evaluation and characterisation of sweet potato (<i>Ipomoea batatas</i> L.) genotypes to develop high starch, high β -carotene lines and their <i>in vitro</i> screening for tolerance to salinity and submergence stresses.	arnab084u@rediffmail.com

K. Mukherjee	Continue Ph.D.	<i>In vivo</i> and <i>in vitro</i> selection, induction and characterization of greater yam (<i>Dioscorea alata</i>) to develop stress tolerant lines.	-
DMP Pradhan	Continue Ph.D	Genetics and Plant breeding	papuni123bbsr@gmail.com
36 M.Sc. Projects	Completed	Horticulture, Plant tissue cultures and related techniques	-

9. Information on guide ship

Guide ship for Ph.D/ M.Phil/ M.Sc	University	Subject
Ph.D students guided as Major/Co-guide, Major,	Viswabharati (2)	Horticulture , Agricultural Botany
Ongoing-2	Utkal University (2)	Botany
Ongoing -1	OUAT	Genetics & Plant breeding
Completed - 36	OUAT, Bhubaneswar (2), Admn. College of Management and Biotechnology, Bangalore(1), Utkal University, Bhubaneswar.(13), MITS, Biotechnology Instt., Rayagada, Odisha (8), Sairam College, Bhubaneswar. (1), Neelachal Institute of Medical Science, Bhubaneswar, Odisha. (1), Gandhi Institute of Biological Sciences, Gunupur, Odisha.(1) Muthayammal College of Arts and Science, Salem, Tamil Nadu. (1), Ravenshaw College, Cuttack, Odisha (4), Trident College, Bhubaneswar , Odisha (1), SOA University, Bhubaneswar (1), GIET, Gunupur, Odisha (1), MITS, Bhubaneswar (1)	Horticulture, Plant tissue culture and related techniques

**10. Number of Research papers (Add list):
Publications**

[Research Papers – 54 (Internationals – 14, National -40) Book – 1 Bulletins- 15 Chapter /Research papers published in Proceedings – 78 Popular Articles – 24, Manuals – 6]

Publications including papers in refereed journals				
Authors	Year	Title with full reference*	Journal with volume & page number	NAAS Journal ID/Rating
(1) Mukherjee A	2002	Effect of NaCl on <i>in vitro</i> propagation of sweet potato. (<i>Ipomoea batatas</i>).	<i>Applied Biochemistry and Biotechnology</i> , 102: 431-441 (International)	A151 (7.6)
(2) Mukherjee A, Unnikrishnan M and Nair N G	1991	Growth and morphogenesis of immature embryos of sweet potato (<i>Ipomoea batatas</i> L.) <i>in vitro</i> .	<i>Plant Cell, Tissue and Organ Culture</i> , 26 : 97-99 (International)	P063 (7.5)
(3) Mukherjee A and Vimala B.	1994	<i>In vitro</i> seed germination and plantlet establishment of two wild relatives of sweet potato (<i>Ipomoea trifida</i> and <i>I. Amnicola</i>).	<i>Current Science</i> , 66(12): 941-942.	C125 (7.3)
(4) Mukherjee A, Debata B K and Naskar S K	1998	Somatic embryogenesis and chromosomal stability of regenerants in sweet potato and taro.	<i>J. Sci. and Ind. Res.</i> 57: 709-715.	J311 (7.0)
(5) Mukherjee A., Naskar S. K., Nedunchezhiyan M. and Rao K. R.	2010	<i>In vitro</i> propagation of elephant foot yam.	<i>Indian J. Hort.</i> 66(4):530-533	IO46 (6.7)
(6) Mukherjee A., Naskar S. K.	2012	Performance of orange and purple fleshed sweet potato genotypes of coastal locations of Odisha	<i>J. Root Crops</i> 38 (1) : 26-31	J308 (3.6)
(7) Sahoo MR, Dasgupta M, Kole PC and Mukherjee A	2010	Biochemical changes in leaf tissues of taro [<i>Colocasia esculenta</i> L. (Schott)] infected	<i>Journal of Phytopathology</i> , 158:154-159.	J280 (7.4)

		with <i>Phytophthora colocasiae</i> .		
(8) Dasgupta M. Sahoo M. R., Kole P. C., Mukherjee A.	2008	Evaluation of orange-fleshed sweet potato (<i>Ipomoea batatas</i> L.) genotypes for salt tolerance through shoot apex culture under <i>in vitro</i> NaCl mediated salinity stress conditions.	<i>Plant Cell Tiss Organ Cult</i> , 94:161–170.	P063 (7.5)
(9) Sahoo M. R., Kole P. C., Dasgupta M., Mukherjee A.	2009	Changes in Phenolics, Polyphenol Oxidase and its Isoenzyme Patterns in Relation to Resistance in Taro against <i>Phytophthora colocasiae</i> .	<i>J. Phytopathol</i> 157:145–153. (International)	J280 (7.4)
(10) Sahoo M R, Dasgupta M, Kole P C, Bhat J S and Mukherjee A.	2007	Antioxidative enzymes and isozymes analysis of taro genotypes and their implications in <i>Phytophthora</i> blight disease resistance.	<i>Mycopathologia</i> , 163: 241–248. (International)	M073 (7.6)
(11) Mukherjee A , Dasgupta M, Debata B K and Naskar SK.	2003	Enhancement of somatic embryogenesis in sweet potato: effect of growth regulators sodium chloride, proline and maltose.	<i>Indian J. Plant physiol.</i> 2003 (sp. Issue), 326-331	I 057 (5.5)
(12) Mukherjee, A. , Sahoo, M. R., Naskar, S. K. and Sahu, A. K.	2006	Growth response of taro under polyethylene glycol mediated stress conditions.	<i>J. Root Crops</i> , 32(1):85-89.	J308 (3.6)
(13) Sahoo MR, Dasgupta M, Mukherjee A , Sahoo AK and Kole PC	2005	<i>In vitro</i> screening and characterization of taro for <i>Phytophthora</i> leaf blight disease.	<i>Journal of Mycopathological Research</i> , 43(1): 87-90.	J246 (4.4)
(14) Mukherjee A.	1994	Somatic embryogenesis in <i>Ipomoea cairica</i> a wild relative of sweet potato.	<i>J. Root Crops</i> , 20 (2) : 125-126	J308 (3.6)
(15) Mukherjee A , Nair N G and Rajendran P G	1994	Use of hydroponics in the hardening of <i>in vitro</i> plantlets of sweet potato and cassava.	<i>J. Root Crops</i> 20(2): 123-124.	J308 (3.6)
(16) Mukherjee A , Unnikrishnan M, Nair N G and	1989	Influence of genotypes and media in pollen embryogenesis in cassava.	<i>J. Root Crops</i> , 15 (2) : 133-138	J308 (3.6)

Easwari Amma C S				
(17) Indira P and Mukherjee A	1991	Metabolic changes associated with the induced flowering through exogenous GA ₃ and Ascorbic acid in <i>Colocasia esculenta</i> L. (Schott).	<i>J. Root Crops</i> , 17 (1) : 50-55	J308 (3.6)
(18) Jos J S, Nair S G and Mukherjee A	1991	A simple staining technique for maturity detection in cassava.	<i>J. Root Crops</i> , 17 (2): 100-105	J308 (3.6)
(19) Mukherjee A. Naskar S. K., Misra R.S., Das B.B. and Sahoo B. K.	2001	<i>In vitro</i> propagation of tuber crops: assessment of axillary shoot proliferation.	<i>J. Root Crop</i> , 27(1), 82-88.	J308 (3.6)
(20) Dasgupta M., Mukherjee A. , . Sahoo M. R., Naskar S. K. and Kole P.	2006	Physiological response of orange fleshed sweet potato (<i>Ipomoea batatas</i> L.) genotypes to sodium chloride stress conditions.	<i>J. Root Crops</i> , 32(1):53-58	J308 (3.6)
(21) Sahoo M. R., Mukherjee, A. , Dasgupta, M., Sahu, A. K, and Kole, P. C	2007	Correlation studies in taro (<i>Colocasia esculenta</i> (L.) Schott) for leaf blight disease tolerance.	<i>J. Root Crops</i> , 33 (1): 12-15.	J308 (3.6)
(22) Nedunchezhiyan M., Byju G. and Mukherjee A.	2008	Performance of cassava varieties intercrop in coconut plantation.	<i>Indian J. Hort.</i> 65(1)	I046 (6.7)
(23) Moorthy S. N., Naskar S.K., Shanavas S., Radhika G.S. and Mukherjee A.	2010	Physicochemical characterization of selected sweet potato cultivars and their starches.	<i>International Journal of Food Properties</i> , 13: 1280-1289 (International)	I122 (7.4)
(24) Nedunchezhiyan, M., Byju, G., Naskar, S.K. and Mukherjee, A.	2010	Effect of mulching and graded doses of fertilizer on yield and nutrient uptake of greater yam + maize intercropping system.	<i>Indian Journal of Horticulture</i> 67 (sp.): 283-287	I046 (6.7)
(25) Nedunchezhiyan, M., Jata, S.K., Mukherjee, A. and Misra, R.S	2011	Impact of growth regulators on cormel production and dormancy breaking in elephant foot yam (<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson).	<i>Journal of Root Crops</i> 37 (1): 24-28	J308 (3.6)

Other publications in National and International Journals

26. **Mukherjee A**, Debata B K, Mukherjee P S and Mallick S K. 2001. Morpho-histo-biochemical characteristics of embryogenic and non embryogenic callus cultures of sweet potato (*Ipomoea batatas* L). *Cytobios*, 106, 113-124. (International)
27. **Mukherjee A**. 2001. Effect of NaCl on axillary shoot proliferation in sweet potato. *Annals of Tropical Research*, 23 (1): 1-10. (International)
28. **Mukherjee A**, Debata B K and Naskar S K 1998. Cytology of callus and regenerated plants of sweet potato (*Ipomoea batatas* L.). *Cytobios*, 96: 109-118.
29. Naskar S K and **Mukherjee A**. 2001. Evaluation of stability in sweet potato using different methods. *Annals of Tropical Research*, 23 (1):11-20.(International)
30. Sahoo, M. R., Dasgupta, M. and **Mukherjee, A**. 2006. Effect of *in vitro* and *in vivo* induction of polyethelene glycol-mediated osmotic stress on hybrid taro (*Colocasia esculenta* (L.) Schott). *Annals of Tropical Research* 28 [2]:1-11. (International)
31. Nedunchezhiyan, M., Jata, S.K., **Mukherjee, A**. and Misra, R.S. 2012. Sprout bud culture: A rapid multiplication technique for elephant foot yam (*Amorphophallus paeoniifolius* [Dennst.] Nicolson) propagation. *Aroideana* 35:132-143.
32. Moorthy S N, Vimala B and **Mukherjee A**. 2002. Physicochemical and functional properties of *Canna edulis* starch. *Trop. Sci.*, 42 : 75-77. (International)
33. **Mukherjee A**.2012. Climatic resilience and salinity cum submergence stresses tolerance of Sweet potato (*Ipomoea batatas* L.) genotypes. *Indian Journal of Geomarine sciences* (in press)
34. **Mukherjee A.**, Naskar S K, Poddar A., Dasgupta M., Sahoo M. R. and Chand P. K. 2010. Submergence and Salinity Tolerance in Sweet Potato (*Ipomoea batatas* L.): Progress and Prospects. *Plant Science Research*, Vol. 31(1& 2): 1-9
35. **Mukherjee A.**, Naskar S. K, Pradhan D.M.P., Sahoo B.K ,Sahoo M.R, Mukherjee A.K. & Chand P.K.2011. Biotic and abiotic stress tolerance in taro (*Colocasia esculenta* (L.) Schott. For adaptability to changing climate: A review. *Plant Science Res.* 33(1&2):1-10
36. **Mukherjee, A.**, Misra, R. S. and Sriram, R. S. 2004. Seed setting and seed germination of taro *in vivo* and *in vitro*. *Plant Science Research*, 26 (1&2): 45-48.

37. **Mukherjee, A.**, Debata, B. K., Naskar, S. K., Sahu, S. and Sahoo, M.R. 2004 Biotic and abiotic stress tolerance in taro (*Colocasia esculenta* (L.) Schott) : A review. *Plant Science Research*, 26 (1 & 2): 1-9.
38. **Mukherjee A**, Naskar S K , Debata B K, Lakhanpaul S and Bhatt K V.2003. Cytogenetics of callus cultures and *in vitro* regenerated plants of sweet potato (*Ipomoea batatas* L.). *Plant Sci. Res.* 25(1&2): 13-20.
39. **Mukherjee, A.** and Debata B.K., 2003, Plant formation from capsulated and non capsulated somatic embryo in sweet potato *in vivo* and *in vitro*, *Plant Science Res.*25 (1&2).
40. **Mukherjee A**, Unnikrishnan M and Nair N G .1991 .Callus induction, embryogenesis and regeneration from sweet potato anther. *J. Root Crops*, (Special), 17 : 302-304.
41. Unnikrishnan M, **Mukherjee A** and Nair N G. 1991. *In vitro* conservation of tuber crops through slow growth cultures. *J. Root Crops* : (Special), 17 : 296-301.
42. Sriram S., Misra R.S., Sahu A.K., Maheswari S.K. and **Mukherjee A.** 2001 Elicitor induced disease resistance in *Colocasia* against *Phytophthora colocasiae*. *J. Root Crops*, 27(2), 317-323.
43. Sethi K., Mohanty A. K., Naskar S. K., Byju G. & **Mukherjee A.** 2002. Effect of set size, spacing and NPK fertilizer on yield of *Amorphophallus* in hilly areas of Odisha. *Odisha J. of Horticulture*, 30(2): 72-73.
44. Khandaitray T, Sahoo Susmita, Sen J, Mukherjee P S, **Mukherjee A** and Sahoo S. 2012. Effect of biocides for the control of grey leaf spot/leaf blight in coconut. *Journal of Mycology and Plant Pathology* (in press).
45. Sahoo M. R., **Mukherjee A.**, Dasgupta M., Sahu A. K., Naskar S. K. and Kole P. C. 2012. Characterization of taro [*Colocasia esculenta* (L.) Schott] accessions for *Phytophthora* leaf blight disease tolerance. *Journal of Mycology and Plant Pathology* (in press).
46. Sen J, Khandaitray, T , Mukherjee P S, **Mukherjee A** and Sahoo S. 2005. Effect of frequency of irrigation on coir pith amended soil for production of tuber crop-sweet potato. *Plant Science Research.*, 27 (1 & 2) : 1-5.
47. **Mukherjee A**, Debata B K. 2001. Organogenic regeneration in sweet potato: effects of NaCl, proline and maltose. *J. Root Crops*, 27(1), 138-144.

48. Naskar S. K., Ghosh P.K. and **Mukherjee A.** 2001. Combining ability analysis of yield and associate characters in sweet potato. *J. Root Crops*, 27(1), 7-11.
49. Misra R.S., Sriram S., Sahu A.K., Maheswari S.K. and **Mukherjee A.** 2001. Strategies for the management of *Phytophthora* leaf blight of taro. *J. Root Crops*, 27(2), 313-316.
50. Sahoo MR, Kole PC, **Mukherjee A** and Dasgupta M. 2007. Photosynthetic response of taro (*Colocasia esculenta* (L). Schott) to salinity stress. *Odisha Journal of Horticulture*, 35 (1): 86-91.
51. Dasgupta M, Sahoo MR, Kole PC and **Mukherjee A.** 2007. Relationship of yield contributing characters in sweet potato (*Ipomoea batatas* L.) under salinity stress. *Odisha Journal of Horticulture*, 35 (1): 27-31.
52. Sahoo MR, Kole PC, Dasgupta M and **Mukherjee A.** 2006. Screening and selection of *Colocasia* for leaf blight, drought and salinity. *Current Agricultural Research*, 19: 14-19.
53. **Mukherjee A**, Sahoo MR, Naskar SK and Sahu AK. 2006. Growth responses of taro under PEG mediated stress conditions. *Journal of Root Crops*, 32 (1): 85-89.
54. Dasgupta M, **Mukherjee A**, Sahoo MR and Kole PC. 2006. Salinity induced morpho-physico-biochemical changes in sweet potato. *Current Agricultural Research*, 19: 1-9.

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

Item	Year	Details	Publisher	Pages
(A) Books published				
Authored				
Edited				
1. Naskar, S K, Ray R C, Misra R S, Nedunchezhiyan M, Rao K R, Sivakumar P S, Mukherjee A (Eds.),	2006	Root and tuber crops in Nutrition, Food Security and Sustainable Environment	Regional Centre of CTCRI, Bhubaneswar,	1-372.
(B) Book Chapters / Manuals				
(1) Mukherjee A.	1999	Tuber Crops.In: <i>Biotechnology and its application in Horticulture.</i>	Edited by S. P. Ghosh, Narosa Publishing House, New Delhi.	267-294

(2) Mukherjee A , Naskar SK, Rao KR, Ray R C	2012	Sweet Potato: Gains through Biotechnology In <i>Fruit, Vegetable and Cereal Science and Biotechnology</i> 6 (spl. 1)	Global Science Books	x-y (1- 13)
(3) Nair N G, Unnikrishnan M and Mukherjee A	1994	Advances in Horticulture. Vol. 8. Tuber Crops.	Eds. K. L. Chadha and G. G. Nayar, MPH, New Delhi.	211- 231
(4) Nair N G, Unnikrishnan M and Mukherjee A	1989	Tissue culture in improvement of tropical tuber crops. Silver Jubilee (1963- 1988), Commemoration Volume.	CTCRI, Trivandrum,	29-35
(5) Mukherjee A	2003	Biotechnology- Sustainable Agro-ecotechnology : Women's Concern., In : Downsizing Technology for Rural Development, Vol. 1	Khuntia S, Parida A and Mishra Vibhuti N (eds). Allied Publishers Pvt. Ltd.	299- 304
(6) Mukherjee, P. S., Mukherjee, A. and Prakash, R.	2002	Biobleaching of coir pith for enhancing agricultural productivity. In: "Mineral Biotechnology"	L. B. Sukla and Bibhuti N. Misra (Eds.), Regional Research Laboratory, Bhubaneswar, Allied Publishers, New Delhi,	193
(7) Mukherjee, P. S. Sahoo, S. Mukherjee, A. and Prakash, R..	2002	Coir pith- a golden dust for agriculture. In: "Plant Resources Utilization",	S. Sahoo, D. B. Ramesh, P. K. Panda and Vibhuti N. Misra (Eds.), Regional Research Laboratory, Bhubaneswar, Allied Publishers, New Delhi,	273- 278

Other Book chapters

8. Mukherjee P S, Sahoo S, Sen J and **Mukherjee A** . 2004. Use of Coir pith as soil conditioner for coastal agriculture, In : Rath S P and Mohapatra P K (eds), Management of Coastal Ecosystem, Utkal University, Bhubaneswar, 79-83.
9. Korada RR, Naskar SK, **Mukherjee A**, Jayprakash CA. 2012. Management of sweet potato weevil, *Cylas formicarius* : A world review In *Fruit, Vegetable and Cereal Science and Biotechnology* 6 (spl. 1). Global Science Books. x-y.

10. Sahoo MR, Dasgupta M, **Mukherjee A** and Kole PC. 2005. *In vitro* and *in vivo* screening of taro [*Colocasia esculenta* (L.) Schott] for *Phytophthora* leaf blight disease. In: *Advances in Fungal Diversity and Host-Pathogen Interaction* (Eds. Rodrigues BF, Gour HN, Bhat DJ and Kamat N). Goa University, Goa. 144-152
11. Sahoo MR, Sahu S, **Mukherjee A**, Naskar SK and Misra RS. 2002. *In vitro* screening of taro genetic resources for tolerance to biotic and abiotic stresses. In: *Plant Resources Utilization* (Eds. Sahoo S, Ramesh DB, Panda PK and Misra VN). Allied Publishers, New Delhi, 217-223
12. Dasgupta M, **Mukherjee A**, Naskar S K and Debata B K. 2002. Use of hydroponics for isolation of tolerant lines of sweet potato (*Ipomoea batatas* L.) towards salinity stress. In: *Plant Resources Utilization*. (Eds. Sahoo S, Ramesh D B, Panda P K and Misra V N). Allied Publishers Pvt. Limited, New Delhi. 143-147.

Manuals				
(1) Mukherjee, A. Naskar SK and Edison S.	2009	Salt tolerant biofortified orange and purple flesh sweet potato: coastal food and nutrition security,	CTCRI, Trivandrum. Tech. Bull. No.51	1-36
(2) Mukherjee, A.	2004	Plant tissue culture and related techniques in tuber crops	Regional Centre of CTCRI, Bhubaneswar	1-39
(3) Mukherjee A	2004	Micropropagation and related techniques in tuber crops for production of quality planting materials.	Training manual on Advances in tuber crops production and processing technologies, RCCTCRI, Bhubaneswar	45-57
(4) Mukherjee A and Naskar S K.	1998	Tissue culture and micropropagation in tuber crops. Workshop Doc: 1998, Workshop on Tuber Crops Technologies organised by 18th and 19th December, Bhubaneswar, India.	RC of CTCRI and Dept. of Horticulture, Odisha	18-28

Other Manuals

5. **Mukherjee A.** 2005. Role of biotechnology in organic farming, Training manual, Trainers training programme on “Organic farming and sustainable food security, April 25th - 29th, 2005, DRWA, Bhubaneswar. DRWA, Bhubaneswar
6. **Mukherjee, A.** 2002. Biotechnology-Sustainable eco-technology: Women’s concern. Training manual “Integrated Pest Management with Women’s Participation”, DRWA, Bhubaneswar, December 10-12, 2002. DRWA, Bhubaneswar

12. Number of Technical Bulletins (Add list):

Bulletins, Short communications				
(1) Mukherjee, A.	2011	Antinutritional factors the 'biomolecules' mediated natural and induced host defence in food crops.	NAIP training Regional Centre, CTCRI, Bhubaneswar	87-96
(2) Mukherjee A., S.K Naskar.,	2013	High starch, β -carotene and anthocyanin rich sweet potato (<i>Ipomoea batatas</i> L.)	CTCRI, Trivandrum	1-4
(2) S.K Naskar., Mukherjee A., Byju, G., Mohanty A., Sethi K. and Satapathy B. S.	2002	Agrotechniques for sweet potato cultivation in hilly-tracts of Odisha.	Regional Centre of CTCRI, Bhubaneswar,	1-6
(3) Naskar S K, Mukherjee A, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S.	2004	Odissara Parvitya Anchalare Unnata Prnalire Saru Chasa.	Regional Centre of CTCRI, Bhubaneswar,	1-6

Other Bulletins, Short communications

4. Nedunchezhiyan, M., Jata, S.K., **Mukherjee, A.**, Sivakumar, P.S., Laxminarayana, L. and Rajasekhara Rao. 2011 Varietal Identification in tuber crops. Field guide series-2, Regional Centre, Central Tuber Crops. Regional Centre of CTCRI, Bhubaneswar. pp.40
5. Nedunchezhiyan, M., Sivakumar, P.S., Rajasekhara Rao, K., Laxminarayana, K., **Mukherjee, A.** and Jata, S.K 2009 Khandhapasalre prasthutibynjna bidya (Oriya). Value added product from tuber crops. Regional Centre of CTCRI, Bhubaneswar.
6. Rajasekhara Rao K., Azad Thakur N. S., Naskar S. K., **Mukherjee A.**, 2008. Ka jingiada na ki khniang/ ksain ba pynduh bad pynjot ia ki soh bad kliar jingthung jong u phankaro. Regional Centre of CTCRI, Bhubaneswar. 1-6
7. Naskar S. K., Rajasekhara Rao K., **Mukherjee A.**, 2008 U phankaro: u jingbam uba tei ia ka met” Regional Centre of CTCRI, Bhubaneswar. 1-6
8. Rajasekhara Rao K., Naskar S. K., **Mukherjee A.**, 2008 Ka jingiada na ki khniang bad jingpang jong ki wang kaba ki khot ha ka ktien phareng ki leaf blight” Regional Centre of CTCRI, Bhubaneswar. 1-6.

9. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S.,2004 Odissara Parvitya Anchalare Unnata Prnalire Mandia Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
10. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S. , 2004 Odissara Parvitya Anchalare Unnata Prnalire Alasi Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
11. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S.,2004 Odissara Parvitya Anchalare Unnata Prnalire Kolatha Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
12. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S., 2004 Odissara Parvitya Anchalare Unnata Prnalire Dangarrani Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
13. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S. ,2004 Odissara Parvitya Anchalare Unnata Prnalire Kandamula Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
14. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S. , 2004 Odissara Parvitya Anchalare Unnata Prnalire Olua Chasa. Regional Centre of CTCRI, Bhubaneswar. 1-6.
15. Naskar S K, **Mukherjee A**, Sivakumar P S, Mohanty A K, Sethi K, Samal S and Satapathy B S. , 2004 Kandajatiya phasalaru unnata pranalire bihana utpadana. Regional Centre of CTCRI, Bhubaneswar. 1-6.

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

Consultancy				
“Capacity development for scientific methods of cultivation of yam, elephant foot yam, cassava and sweet potato in Gajapati, Kandhamal, Koraput and Kalahandi districts of Odisha”.	Associated with Consultancy service with Odisha Tribal Empowerment & Livelihoods Programme (OTELP)	2006-2007	Consultancy	Imparted training to 35 women self help group on scientific method of cultivation and post harvest utilization of tuber crops for household food and nutritional security.

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

Varieties developed, released / recommended-16, Technologies / Methodologies developed -8, Genetic stock maintained-1245, Concept-3			
Category	Brief of varieties / methodologies / concepts	Year	Additional / Information
Varieties			
Sweet potato	Developed 6 sweet potato (ST 14, CIP SWA2, 420027, Gouri, ST 13 and SB 198/115) tolerant to salinity (6-8.0 dSm ⁻¹)	2009	[In Salt tolerant biofortified orange and purple flesh sweet potato: coastal food and nutrition security, CTCRI, Trivandrum. 2009, Technical Bulletin Series: 51. 36 p.]
	Release of 5 ST 14 – High beta carotene rich (14 mg/100g) salt tolerant variety. ST 13 – High anthocyanin rich (90 mg/100g) salt tolerant variety. ST 10 – High extractable starch (21%) with commercial importance. CIPSWA-2 & 440127 – beta carotene rich (6 mg/100g) high yielding	2011-2012	[In Development of Recommended/ Released Varieties under AICRP on TC , Tech. bull No. 51, 2012,pp-47-49] [JRC 38(1): 26-31]
	Developed and released 5 varieties of sweet potato (Kalinga, Goutam, Sourin, Kishan and Sree Kanaka)	2006	[In Tuber Crops varieties released by CTCRI, Thiruvananthapuram, 2006.
Taro	Developed three lines of taro (Jhankri, Sonajuli and Duradim) tolerant to both biotic (blight) and abiotic stresses (drought and salinity) and a hybrid line TSL tolerant to drought Release of Jhankri and Sonajuli	2004 2006	[<i>Plant Science Res.</i> 33 (1 &2): 1-10] [In Proceeding of the VIIIth Biennial group meeting, 2006 at NDUA &T, Faizabad AICRP (TC) CTCRI, Thiruvananthapuram, p.19] [In: Development of Recommended/ Released Varieties under AICRP on TC , Tech. bull No. 51, 2012,pp-91-92]

	Developed and released 3 varieties of taro (Pani Saru-1, Pani Saru- 2 and Muktakeshi)	2006	[In Tuber Crops varieties released by CTCRI, Thiruvananthapuram, 2006.
Yam	Developed, high yielding, short duration good cooking quality greater yam Da-25 and under release	2011	[Proc. XII group meet. AICRP(TC)]
Technologies/ Methodologies developed	Developed embryo rescue techniques and recovered desirable hybrids in sweet potato and taro	1991	[<i>Plant cell tissue and organ Cult.</i> , 1991, 26:97-99 <i>CurrentScience</i> , 1994, 66(12):941-942.]
	Developed <i>in vitro</i> propagation and storage techniques	1994 1999	[Advances in Horticulture. 1994, Vol. 8. Tuber Crops. Eds. K. L. Chadha and G. G. Nayar, MPH, New Delhi. pp 211-231 Tuber Crops. In: <i>Biotechnology and its application in Horticulture</i> . 1999. Edited by S. P. Ghosh, Narosa Publishing House, New Delhi. pp 267-294]
	Protocols developed for encapsulation-germination of micro propagules for artificial seeding in sweet potato and taro	2002	[<i>Applied Biochemistry and Biotechnology</i> , 2002 102: 431-441]
	Developed rapid <i>in vitro</i> screening techniques to isolate salt tolerant sweet potato, biotic and abiotic stress tolerant taro	2009	[CTCRI, Trivandrum. 2009, Tech. Bull. 51. 36 p]
	Agro techniques developed	2002	[Agrotechniques for sweet potato cultivation in hilly-tracts of Odisha. RC of CTCRI, Bhubaneswar, 2002, pp 1-6]
	Standardized isozyme and DNA markers to characterize stress tolerant sweet potato, taro	2006-2007	[<i>J. Sci. and Ind. Res.</i> 57: 709-715; <i>Cytobios</i> , 96: 109-118.],
	Methodologies developed to overcome	2008-	

	recalcitrancy in elephant foot yam	2009	[<i>Indian J. Hort.</i> 66(4):530-533]
Genetic stock	Collected and maintaining 1245 genetic resources of different tuber crops in field	2008-2013	Collection, evaluation...Proj RCCTCRI
	Maintaining released and pre-released genetic resources of tuber crops <i>in vitro</i>	2011-2012	Collection, evaluation...Proj. [Global Science Books 6 (1)]
Concepts	1. Artificial seeds as true seeds 2. Cut. inflorescence for controlled pollination 3. Hydroponics for rapid screening	2000-2006 2002-2004 2002-2005	[Publ. 1. <i>Applied Bio-Chem.</i>] [<i>Plant Sci. Res.</i> 26(1 &2): 45-48] [CTCRI, Trivandrum. 2009, Tech. Bull. 51. 36 p]

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

- i) Developed and registered high β -carotene (14mg/100g) rich sweet potato variety ST-14
- ii) Developed and registered high starch (extractable 20-21%) variety ST-10.
- iii) Developed and registered high anthocyanin (90mg/100g) variety ST-13.

16. Any other information:

a) Recipient of awards

Awards	No. of Awards	Details
	(9)	
1. Jawaharlal Nehru Award, Indian Council of Agricultural Research, New Delhi, India, 2001	One (National)	For outstanding contribution in horticulture (2000).
2. Award in International Conference on "New Horizons in Biotechnology-the year 2010 and beyond"	One (International)	For the paper entitled: Effect of NaCl on <i>in vitro</i> propagation of sweet potato". Sponsored by CSIR, with IRD-France, University of Ioannina-Greece, UFPR-Brazil and University of Venice- Italy.
3. Scholarship by Federal Republic of Germany	One (International)	For Advanced training course on "Biotechnology – micropropagation and related techniques", Food and Agriculture Development Centre (ZEL) of the German Foundation for International Development

		(DSE) Germany, Aug. 15 to Dec.16, 1996.
4. Award in International conference in tropical root and tubers for sustainable livelihood under changing agro-climate during 9-12 July, 2013	One (International)	For the paper entitled : Antioxidants rich sweet potato and their antibacterial activity organized by ISRC and CTCRI, Trivandrum .
5. CSIR Senior Research Fellow	One (National)	For higher studies. CSIR, New Delhi, India,1996-99
6. CSIR Junior Research Fellowship	One	CSIR/JRF Exam. 1983
7. University merit scholarship	One	Rank in M. Sc., Kalyani Univ. 1980-81
8. National Scholarship	One	Rank in B.Sc., Burdwan Univ.1978-79
9. Fellow membership (FSAB)	One (Society)	Plant tissue culture Society for applied biotechnology, Karnataka Univ. 2012

b) Examiner/Referee / Expert / Reviewer / Invited talks

1.	External examiner/Expert for Ph.D	Viswa Bharati University (2), 2003 BCKV, Kalyani (2),2007
2.	External examiner/ Expert for M. Sc	OUAT, Bhubaneswar (2), 2006 College of Agriculture, Chiplima Sambalpur , 2008 Kerala Agricultural University, 1993
3.	Review of Journals	Reviewer of National and International journals (9), 2006-2013
4.	Led panel discussion on women in Science and Technology, Technological advances and its societal implications and delivered lead lecture on “Women’s role in ecofriendly sustainable development of science and technology for the mankind” at NIT, Rourkela	Organized and invited by NIT, Rourkela
5.	Participated in panel discussion with press at International Conference on Woman, Biotechnology, Environment and Non Conventional Energy, at IICT, Hyderabad	Organized and invited by IICT, Hyderabad
6.	Sorting gender issues as Chairperson ‘ women cell ’ of	2010 and continuing

	RC of CTCRI, CHES and as resource person at DRWA	
7.	Evaluator of gender sensitized extension projects of CAPART.	CAPART, New Delhi
8.	Invited and participated on “Biotechnological education and developments of Odisha” in Secretariat with state ministry of energy on 26 th August, 2002.	Organized by Institute of Life Science, Bhubaneswar.
9.	Invited as resource person and participated in state level seminars, discussion and awareness campaign of NHB schemes with growers, entrepreneurs on 4.1.2003; Coconut Development Board schemes on 13.2.2003 and Spice Board on 7.3.2003.	2003, at Bhubaneswar for agri-horticultural developments.
10.	Invited as resource person at Ramakrishna Mission KVK, Ranchi.	Imparted theoretical and practical trainings to 50 farmers, women farmers and self help groups of Jharkhand.
11.	Invited as resource person for Teachers training. Organized by Regional Institute of Education (NCERT), Bhubaneswar, 2001, 2003.	Imparted training to 25 PG teachers and delivered lecture on “Chromosome theory of inheritance”.
12.	Invited as resource person in Brain Storming Session on Gender issues, August, 1998.	DRWA (ICAR), Bhubaneswar.
13.	Invited as resource person for training on ‘Role of New molecules in integrated pest management and their prospects’ organized by DRWA, Bhubaneswar, 18-22 November, 2003.	Imparted training on “Biotechnology for pest management” to Agril. Officers and Extension personnel on 21 st November, 2003.
14.	Participated in International Conference on Woman, Biotechnology, Environment and Non Conventional Energy, October, 2000.	Organized by IICT, Hyderabad and TWOWS, Italy. Presented paper and participated in panel discussion with press.
15.	Invited in the workshop on “Decentralization of rural technology scheme” on 14-15 April, 1998. CAPART, Bhubaneswar.	Delivered invited talk on “Biotechnology and its application on a smaller scale’ on 14 th April, 1998.
16.	Invited as resource person in “National Workshop on integrated seed development” organized by IMAGE, OUAT, Bhubaneswar 21-22 July, 2005.	Led the group in interactive session on ‘Integrated seed development programme for cereals, vegetables crops’ 21 st July, 2005.
17.	Invited in XIX meeting of ICAR Regional committee-II at OUAT, Bhubaneswar.	Participated during 26-27, September. 2008.
18.	Invited as resource person in “Workshop on Horticulture Nursery” by NHB, Bhubaneswar.	Participated in “Workshop on Horticulture Nursery” on 20.08.2010 at Dir. of Horticulture, Bhubaneswar, and Odisha.
19.	Invited to address the gathering as Chief Guest on ‘World Coconut Day’ organized by CDB, Pitapalli, Khurda,	Addressed the gathering and delivered lecture on “Green productivity using

	Odisha	coconut based coir pith waste and tuber crops” on 2 nd September, 2010.
20.	Invited as Resource person to deliver lead lecture and to Chair a session in UGC sponsored National Seminar on Exploitation of Biofertilizers and Biopesticides for sustainable development of modern agriculture by Bankura Christian College, W.B.	Delivered a lead lecture on “Organic farming, biotechnology and biodiversity vs. ‘the paradox’ of food insecurity under changing climate” and also Chaired both technical session and the valedictory function during 18 th – 19 th February, 2011.
21.	Invited in XII working group meeting of AICRP for dryland Agriculture, OUAT, Bhubaneswar	Participated on 2 nd June, 2008
22.	Invited in UGC sponsored National Seminar on Attenuation of stress impacts on plants at Utkal Univ. Bhubaneswar	Participated on 31 st March, 2009
23.	Participated in Hindi Seminar on “Krishirata Mahilao me Udyamata ka Vikash” and presented a paper on “Mahilao ke rozgar mein sahayak: Bibhinnya jatiya kanda se mulya bhardak poustik khadhya padartha”, Sar Pustika, DRWA, Bhubaneswar	P.4. 10 th September, 2008.
24.	Appointed and acted as external expert for selection of SRF for NAIP project of CHES, Bhubaneswar.	01.10.2009
25.	Invited and participated in CIP-SWCA sponsored meeting and discussions on ICAR-CIP, ‘MOU’ and work plan	Participated in the meeting and delivered lecture on ‘Released varieties of sweet potato, CTCRI, India’ on 18.03.2010
26.	Invited and participated in CIP-SWCA sponsored workshop on “Partnership in improving nutrition & livelihood through sweet potato R & D” action planning workshop	12 th May 2009, at Bhubaneswar. 17 th March, 2010, at Bhubaneswar.
27.	Invited and participated in “Awareness programme on National Certification System for Tissue Culture Raised Plants (NCS-TCP)	29 th May 2009 at Bhubaneswar, sponsored by DBT and Biotech. Consortium Ltd. New Delhi.
28.	Appointed and acted as external expert for selection of vocational apprenticeship trainees of CHES, ICAR Bhubaneswar	23.11.2009
29.	Invited and Participated in International Conference on Climate Change and Environment at CUSAT, Kochi organized by NISCAIR, CSIR	24 – 26 October, 2010
30.	Participated as Resource Person in ‘Farmers’ seminar cum workshop on Livelihood improvement through commercial cultivation and value addition of tuber crops for tribal farmers of Odisha’	21 st & 22 nd October, 2010
31.	Invited and participated in group discussion on ‘Value chain and commercialization of tuber crops’	22nd October, 2010, CIPSWA-CTCRI meeting at RC CTCRI, Bhubaneswar

32.	Invited and co-chaired the technical session on "Sensitisation of the stakeholders' about the importance of bio-diversity conservation and management" in the National Seminar on "Gender and biodiversity conservation".	29 th December 2010 at DRWA, Bhubaneswar
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Date: 07.08.2013

(Archana Mukherjee)
Principal Scientist