## Name: DR SUMIT CHAKRAVARTY

Designation: Associate Professor

Department: Forestry

Contact details: +91 9434082687

E mail: c drsumit@yahoo.com; sumit@ubkv.ac.in and c.drsumit@gmail.com

Website: www.sumit.c.in

Educational qualification: B.Sc. Agri (Hons.), M. Sc. Forestry, Ph. D. Agronomy

Area of specialization: Agricultural ornithology, Crop production, intercropping

Area of interest: Conservation and biodiversity, Forest ecology, Carbon sequestration, accounting and budgeting; Agroforestry, Forest seed technology, rural development and tribal/farmer's rights, traditional knowledge

## **List of Publication**

### Bulletin/Training Manual/Proceedings

- 1. Datta, S.; Pal, P.; Dey, A. N.; **Chakravarty, S.** and Choudhury, P. 2003. Spices production, processing and marketing in West Bengal. Proceedings of the State level seminar from 25-26 February 2003 at Pundibari organized by Uttar Banga Krishi Viswavidyalaya, Pundibari and sponsored by Directorate of Arecanut and Spices Development, Ministry of Agriculture Gol Calicut Kerala. 143p.
- Panwar, P.; Chakravarty, S. and Dey, A. N. 2007. Agroforestry- an alternative land use practice for sustainability. Department of Forestry, Uttar Banga Krishi Viswavidyalaya Pundibari. 51p.
- 3. **Chakravarty, S.** and Maitra, S. 2008. Under Graduate Practical Manual for First Year. Faculty of Horticulture, Uttar Banga Krishi Viswavidyalaya Pundibari. 92p.
- 4. Panwar, P. and **Chakravarty, S.** 2008. Agroforestry for livelihood security and environmental sustanibility, Department of Forestry, Uttar Banga Krishi Viswavidyalaya Pundibari. 46p.
- 5. **Chakravarty, S**., Dey, A. N. and Shukla, G. 2009. Training manual on *Tree borne Oilseed Species: Ecological and Economic benefits*. Department of Forestry, UBKV, Pundibari, Cooch Behar. 102p.

## **Books**

1. Shukla, G. and **Chakravarty, S**. 2012. *Biodiversity Cause and Pattern (in the foot hills of Eastern Himalaya)*. Lambert Academic Publishing, German. 200p.



- 2. Shukla, G. and **Chakravarty, S**. 2012. *Standardized nursery techniques of Albizia* procera (Roxb.) Benth. Lambert Academic Publishing, German. 71p.
- 3. Malla, S.; Shukla, G. **Chakravarty, S**. 2012. *Standardized nursery techniques of Albizia lebbeck* (L) *Benth.* Lambert Academic Publishing, German. 71p.
- 4. **Chakravarty, S**.; Shukla, G. and Dey, A. N. 2012. *Tree Borne Oilseed Species: Ecological and Economic Benefits*. LAP Lambert Academic Publishing, German. 181p.

## **Book Chapters**

### **National**

- Chakravarty, S. and Mallick, K. 2003. Agriculture in a Green House World, What Really Will Be? In: *Environmental Challenges of 21<sup>st</sup> Century*. Ed Kumar A, pp 633-52. APH Publishing House New Delhi.
- Chakravarty, S. and Sandhu, J. S. 2003. *Ex Situ* Conservation of Wildlife. In: *Environmental Challenges of 21<sup>st</sup> Century*. Ed Kumar A, pp 613-20. APH Publishing House New Delhi.
- Panwar, P.; Dey, A. N. and Chakravarty, S. 2004. Agroforestry in North-Eastern States: Its Present Status and Interventions for Future. In: *Agroforestry in 21<sup>st</sup> Century*. Eds. Chauhan S K, Gill S S, Sharma S C and Chauhan R, pp 49-54. Agrotech Publishing Academy, Udaipur.
- Chakravarty, S. and Sandhu, J. S. 2006. Avian community of orchard and its surrounding Eucalyptus windbreak in Punjab Agricultural University, University Campus, Punjab. In: *Animal Research New Dimensions*, ed. Kumar, A, pp 30-38. Daya Publishing House, Delhi.
- Panwar, P.; Dhiman, R. C.; Dey, A. N. and Chakravarty, S. 2008. Performance of Eastern Cottonwood in Terai Zone of West Bengal. In: *Exotics in Indian Forestry*. Eds. Chauhan S K, Gill S S, Chauhan R and Sharma S C, pp 642-645. Agrotech Publishing Academy, Udaipur.
- Chakravarty, S.; Shukla, G. and Suresh C. P. 2009. Tribal welfare and development in India: Past, present and Strategies with special reference to Agriculture and Forestry: *Tribal Development in India: Dimensions and Initiatives*. Ed. Ghosh, S. Icfai University Press, Hyderabad. Pp 107-124.
- Chakravarty, S.; Suresh, C. P. and Shukla, G. 2012. Agricultural Strategies for Rural Economy: the New Growth Engine. In: *Integrated Rural Development and Management: Issue Strategies and Policy Option*. Ed. Dasgupta, D.; Mallick, A. K.; Das, T. K.; Dutta, A.; Goswami, R. and Ali, N. Agrobios, Jodhpur, India. Pp 21-28.

- Chakravarty, S.; Shukla, G.; Sharma, B.; Sharma, B. and Dey, A. N. 2012. Sustainable management and strategies for conservation of medicinal plants. In: *Medicinal Plant Cultivation in North Bengal: Challenging and Emerging Issues*, eds. Kumar, S.; Singh, S. and Das, R. Institute of Forest Productivity, Indian Council of Forestry Research and Education Ranchi. Pp. 1-8.
- Suresh, C. P.; Pradheep, K.; Bhutia, K. D. and Chakravarty, S. 2013. Wild relatives of fruits in Eastern Himalayan region of India. In: *Perspectives in Plant Biodiversity*, ed. Muthuchelian, K. Daya Publishing House, New Delhi. Pp 107-118.

# **International**

- 1. **Chakravarty, S**.; Ghosh, S. K.; Suresh, C. P.; Dey, A. N. and Shukla, G. 2012. Deforestation: Causes, Effects and Control Strategies. In: *Global Perspectives on Sustainable Forest Management*, ed. Okia, C. A. Intech Publishers Croatia. Pp 3-28. **(ISBN 978-953-51-0569-5)**.
- Chakravarty, S. and Shukla, G. 2012. Tree-borne oilseeds. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 1-12.
- 3. **Chakravarty, S**.; Shukla, G. and Sarkar, R. 2012. Biodiesel in India: constraints and prospects. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 13-31.
- 4. **Chakravarty, S**.; Dey, A. N. and Shukla, G. 2012. Tree borne oilseed species in agroforestry. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 52-63.
- 5. **Chakravarty, S**.; Dey, A. N. and Shukla, G. 2012. Growing TBOS for wasteland development. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 64-74.
- 6. Sharma, B. and **Chakravarty, S**. 2012. Jatropha cultivation and practices with special reference to North Bengal. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 133-142.
- 7. **Chakravarty, S**.; and Shukla, G. 2012. Pongamia, a potential source of biodiesel. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 143-150.
- Chakravarty, S. and Shukla, G. 2012. Neem: the tree of 21<sup>st</sup> century. In: *Tree* Borne Oilseed Species: Ecological and Economic Benefits, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 151-168.
- Chakravarty, S.; Shukla, G. and Suresh, C. P. 2012. Mahua. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 169-173.

- 10. Suresh, C. P. and **Chakravarty, S**. 2012. Wild Apricot, a potential edible oil tree of hills. In: *Tree Borne Oilseed Species: Ecological and Economic Benefits*, eds. Chakravarty, S.; Shukla, G. and Dey, A. N. LAP Lambert Academic Publishing, German. Pp 174-180.
- Chakravarty, S.; Puri, A. and Shukla, G. 2013. Climate change vis-à-vis agriculture: Indian and global view- implications, abatement, adaptation and tradeoff. In: *Climate Change Environment and Crop Productivity*, ed. Sengar, R. S. Stadium Press. (Accepted In press)

## Paper in Proceedings

- Dey, A. N.; Dash, S. K.; Panwar, P. and Chakravarty, S. 2003. Cultivation of Spices through Agroforestry System- An Economically Viable and Ecologically Sustainable Approach in North Eastern Plains of West Bengal. In: Spices, Production, Processing and Marketing in West Bengal. Eds Datta S, Pal P, Dey A N, Chakravarty S and Choudhury P, Pp 85-90. Uttar Banga Krishi Viswavidyalaya, Pundibari Cooch Behar.
- Suresh, C. P.; Bhutia, K. D.; Shukla, G.; Pradhan, K. and Chakravarty, S. 2013. Free listed wild edible fruit species of Sikkim Himalayas and their uses. In: *Proceedings of the 2<sup>nd</sup> International Symposium on Minor Fruits and medicinal Plants on Minor Fruits and Medicinal Plants for better lives*, ed. Wathugala, D. L.; Subhasinghe, S.; Athapaththu, N. S. B. N.; Fonseka, K. and Priyadharshani, N. D. N, Pp17-37. Faculty of Agriculture, University of Ruhuna, Sri Lanka.
- Shukla, G.; Subba, M. and Chakravarty, S. 2013. Ethnomedicinal plant use by locals in backward areas of Hardoi District, Uttar Pradesh (India). In: *Proceedings of the* 2<sup>nd</sup> International Symposium on Minor Fruits and medicinal Plants on Minor Fruits and Medicinal Plants for better lives, ed. Wathugala, D. L.; Subhasinghe, S.; Athapaththu, N. S. B. N.; Fonseka, K. and Priyadharshani, N. D. N., Pp 42-49. Faculty of Agriculture, University of Ruhuna, Sri Lanka.

# **Research Paper**

#### **National**

- Chakravarty, S. and Sandhu, J. S. 2002. Bird Community of Flowering Indian Coral Tree. Indian Journal of Environment and Ecoplanning 6:13-18. (ISSN 0972-1215)
- 2. **Chakravarty, S.** and Sandhu, J. S. 2002. Birds and Orchard Crop Interaction: Damage to Fruit Crops. *Indian Journal of Environment and Ecoplanning* **6**: 209-11.
- Chakravarty, S. and Sandhu, J. S. 2002. Eucalyptus Windbreak around the Orchard did not Influence Damage to Fruits by the Pestiferous Birds. *Journal of Current Science* 2: 177-80. (ISSN 0972-6101)

- Chakravarty, S.; Dhingra, K. K. and Singh, M. 2002. Performance of Sunflower-Groundnut Intercropping System as influenced by Sowing Dates of Groundnut. *Indian Journal of Environment and Ecoplanning* 6: 259-62.
- Chakravarty, S.; Dhingra, K. K. and Singh, M. 2002. PAR Interception and Light Use Efficiency of Sunflower and Groundnut Intercropping System. Indian Journal of Environment and Ecoplanning 7: 137-142.
- Chakravarty, S.; Dhingra, K. K. and Singh M 2003. Production Potential of Sunflower (*Helianthus annuus*) and Groundnut (*Arachis hypogaea*) in Intercropping System under different Planting Patterns, Harvest Schedules and Genotype of Groundnut. *Indian Journal of Agronomy* 48: 96-99. (ISSN 0537-197X; RNI No. 34518/79)
- Khera, K. S. and Chakravarty, S. 2003. Conservation of Avian Biodiversity in Agroecosystem in Punjab. *Indian Journal of Environment and Ecoplanning* 7: 35-41.
- Singh, M.; Satpaul and Chakravarty, S. 2004. Mixing Lower Doses of Atrazine and Metribuzine with Isoproturon for Control of *Phlaris minor* in wheat. *Journal of Current Science* 5: 337-40.
- Chakravarty, S.; Dhingra, K. K. and Singh, M. 2007. Performance of Sunflower (*Helianthus annuus*) and Groundnut (*Arachis hypogaea*) Intercropping System under Different Fertilizer Levels. *Environment and Ecology* 25S: 958-61. (ISSN 0970-0420)
- Chakravarty, S.; Dhingra, K. K. and Singh, M. 2007. Effect of Irrigation Scheduling on the Performance of Sunflower (*Helianthus annuus*) And Groundnut (*Arachis hypogaea*) Intercropping System. *Environment and Ecology* 25S: 953-55.
- Chakravarty, S.; Shukla, G. and Suresh, C. P. 2007. Tribal welfare and development in India: Past, present and Strategies with special reference to Agriculture and Forestry. *Kurukshetra* (A Journal on Rural Development) 56: 33-39. (ISSN 0021-5660)
- Shukla, G.; Chakravarty, S. and Dey, A. N. 2007. Effect of growing media on germination and initial seedling growth of *Albizia procera* (Roxb.) Benth. in terai zone of West Bengal. *Environment and Ecology* 25S: 406-07.
- Shukla, G.; Chakravarty, S. and Panwar, P. 2007. Effect of date of collection and presowing treatment on germination and initial seedling growth of *Albizia* procera (Roxb.) Benth. in terai zone of West Bengal. *Environment and Ecology* 25: 617-21.

- Shukla, G.; Koul, D. N.; Chakravarty, S. and Panwar, P. 2007. Effect of pre sowing treatment on germination and initial seedling growth of *A. lebbeck* in terai zone of West Bengal. *Environment and Ecology* 25S: 964-66.
- Shukla, G.; Chakravarty, S. and Panwar, P. 2007. Effect of growing media on germination and initial seedling growth of *A. lebbeck* in terai zone of West Bengal. *Environment and Ecology* 25S: 949-50.
- Chakravarty, S.; Shukla, G.; Malla, S. and Suresh, C. P. 2008. Farmers Right in Conserving Plant Biodiversity with special reference to North East India. *Journal of Intellectual Property Rights* 13: 225-33. (ISSN 0971-5544)
- Shukla, G.; Malla, S. and Chakravarty, S. 2008. Presowing treatments on germination and seedling growth of *Terminalia arjuna* in terai zone of West Bengal. *Seed Research* 36: 183-86. (ISSN 0379-5594)
- Chakravarty, S.; Suresh, C. P. and Shukla, G. 2010. Biodiesel in India: constraints and prospects. *Environment of Ecology* 28: 1512-19.
- 19. Chakravarty, S.; Dey, A. N. and Shukla, G. 2010. Tree borne oilseed species in agroforestry. *Environment of Ecology* 28: 1507-1511.
- 20. Chakravarty, S.; Dey, A. N. and Shukla, G. 2010. Growing TBOS for wasteland development. *Environment of Ecology* **28**: 1502-1506.
- 21. Chakravarty S, Suresh C P and Shukla G 2010. Tree borne oilseeds. *Environment of Ecology* 28: 1520-1524.
- Panwar, P. and Chakravarty, S. 2010. Floristic structure and ecological function of homegardens in humid tropics of West Bengal, India. *Indian Journal of Agroforestry* 12: 69-78. (ISSN 0972-0715)
- 23. Shukla, G.; Dey, A. N. and Chakravarty, S. 2010. Standardization of growing media and seed size for germination and seedling growth of *Melocanna* baccifera (Roxb.) Kurz in Terai Zone of West Bengal. Journal of Bamboo and Rattan 9: 59-63. (ISSN 0973-4449)
- 24. Panwar, P. and **Chakravarty, S**. 2011. Performance of rice under agrisilviculture system in Terai zone of West Bengal. *Indian Journal of Agroforestry* **13**: 100-02.
- 25. Koul, D. N.; Om Prakash M, D.; Shukla, G. and Chakravarty, S. 2011. Improvement in livestock status through soil and water conservation: case of two semiarid districts of Madhya Pradesh in India. *Indian Journal of Animal Research* 45: 102-108. (ISSN 0367-6722)

- 26. Malla, S.; Shukla, G.; Dey, A. N. and Chakravarty, S. 2011. Effect of applied nitrate on growth and nodulations of *Albizzia lebbeck* seedlings. *Indian Journal of Forestry* 34: 75-78. (ISSN 0971-9431)
- Koul, D. N.; Shukla, G.; Panwar, P. and Chakravarty, S. 2011. Status of soil carbon sequestration under different land use system in Terai Zone of West Bengal. *Environ. We Int. J. Sci. Tech.* 6: 95-100. (Print: ISSN 0975-7112; Online: ISSN 0975-7120).
- Panwar, P.; Singh, C. and Chakravarty, S. 2011. Salix tetrasperma: typical phenology a boon to low land Agroforestry. The Indian Forester 137: 395-396. (Print- ISSN 0019-4816; Online- 2321-094X)
- 29. Shukla G and **Chakravarty S**. 2011. Effects of date of collection and pod length on germination and seedling growth of *Albizia procera* (Roxb.) Benth. *Seed Research* **39**: 90-94.
- 30. Shukla, G.; Kumar, R. and **Chakravarty, S**. 2012. When flowering threatens the natural conservation of a species. *Current Science* **102**: 1502.
- 31. Chakravarty, S. and Shukla, G. 2012. Bamboo diversity, utilization and conservation with special reference to West Bengal. *Indian Forester* **138**: 518-530.
- 32. Chakravarty, S.; Suresh, C. P.; Puri, A. and Shukla, G. 2012. North-east India, the geographical gateway of India's phytodiversity. *Indian Forester* **138**: 702-709.
- Malla, S.; Shukla, G. and Chakravarty, S. 2012. Utilization and conservation of wild plants by the tribal communities of Tripura. *Indian Forester* 138: 1002-1007.
- 34. Shukla, G. and **Chakravarty, S**. 2012. Ethnobotanical plant use of Chilapatta Reserve Forest in West Bengal *Indian Forester* **138**: 1116-1124.
- 35. Malla, S.; Shukla, G. and **Chakravarty, S**. 2012. Traditional crop husbandry and other allied activities of Jhumia tribes in Tripura. *Journal of Progressive Agriculture* **3**: 74-77. (**Print- ISSN 2229-4244, Online- 2278-0556**)
- 36. Shukla, G. and **Chakravarty, S.** 2012. Soil Carbon sequestration vis-à-vis soil management. *Environ. We Int. J. Sci. Tech.* **7**: 107-122.
- Panwar, P.; Pal, S.; Chakravarty, S. and Alam, M. 2013. Soil quality and production of low land paddy under agriculture systems in acid soil of West Bengal, India. Range Management and Agroforestry 34: 51-57. (ISSN 0971-2070)
- 38. Malla, S.; Shukla, G. and Chakravarty, S. 2013. Effect of date of collection and pod length on germination and initial seedling growth of *Albizia lebbeck* (Benth.). *Indian Forester* 139: 668-691.
- 39. Koul, D. N.; Omprakash, M. D.; Shukla, G. and **Chakravarty, S**. 2013. Impact of soil and water conservation on production of major crops in Ratlam and

Mandsaur districts of Madhya Pradesh. *Journal of Progressive Agriculture* **4:** 4-8.

- 40. Shukla, G.; Subba, M.; Dey, T.'; Lepcha, U.; Rai, P.; Kumari, A. and Chakravarty, S. 2014. Better techniques to enhance germination in two Albizia species with special reference to Terai zone of West Bengal. *Journal of Agriculture and Technology* 1:70-76. (ISSN 2348-4721)
- Shukla, G. and Chakravarty, S. 2014. Cause, pattern and consequences of understorey herbaceous vegetation at a foothill forest in Indian eastern Himalayas. *Indian Forester* 140: 354-362.

#### **International**

- Malla, S.; Shukla, G. and Chakravarty, S. 2010. Standardized pod collection time, pod length and pre-sowing treatment of Albizia lebbeck at terai zone of West Bengal, India. *Journal of Forestry Research* 21: 338-342. (Print: ISSN 1007-662X; Online: ISSN 1993-0607)
- 2. **Chakravarty, S**.; Sharma, B.; Suresh, C. P. and Shukla, G. 2012. Production constraints of biodiesel and its remedies in India with special reference to Jatropha. *GSTF Journal of Engineering Technology* **1**: 44-50. **(ISSN: 2251-3701)**
- Shukla, G. and Chakravarty, S. 2012. Fern diversity and biomass at Chilapatta Reserve forest of West Bengal Terai Duars in sub-humid tropical foothills of Indian Eastern Himalayas. *Journal of Forestry Research*. 23: 609-613.
- 4. Koul, D. N.; Shukla, G. and Chakravarty, S. 2012. Change in extent of irrigation due to 'Sunehra Kal' initiated soil and water conservation interventions in two semi-arid districts of Madhya Pradesh. Journal of Agricultural Extension and Rural Development 4: 504-511. (ISSN 2142-2154).
- Shukla, G.; Biswas, R.; Das, A. P. and Chakravarty, S. 2013. Visual qualitative description of a humid tropical foothill forest in Indian eastern Himalayas. *Biodiversity* 14: 1-15, <u>DOI: 10.1080/14888386.2013.819786</u> (Print: ISSN 1488-8386; <u>Online</u>: ISSN 2160-0651)
- Shukla, G.; Kumar, R.; Subba, M.; Kumari, A. and Chakravarty, S. 2013. Wild vegetable biodiversity in Ranchi district of Jharkhand. *Life Sciences Leaflets* 11: 23-30. (Print: ISSN 2277-4279; Online: ISSN 0976-1098).
- 7. Shukla, G.; Biswas, R.; Das, A. P. and Chakravarty, S. 2014. Plant diversity at Chilapata Reserve Forest of Terai Duars in sub-humid tropical foothills of Indian Eastern Himalayas. *Journal of Forestry Research*. DOI: 10.1007/s11676-014-0452-3

- Koul, D. N.; Shukla, G. and Chakravarty, S. 2013. Corporate social responsibility vis-àvis business development: impact of *Sunehra Kal* project on business of ITC in Ratlam and Mandsaur districts of Madhya Pradesh. *International Journal of Forestry and Crop Improvement* 4: 73-79. (Print: ISSN 0976-562X; Online: ISSN 2230-9411; RNI: UPENG/2010/03627)
- Shukla, G. and Chakravarty, S. 2013. Cause, pattern and consequence of carbon sequestration at Chilapata Reserve Forest in sub-humid foothills of Indian Eastern Himalayas. *Forest Science and Practice* 15: (Accepted in press)

# **Popular Articles**

- 1. **Chakravarty, S.** and Ghosh, S. K. 2011. Threats and benefits of enhanced carbon dioxide climate change. *Nur* **2**: 48-54. A yearly Id number-Saranika published by Cooch Behar District Anjumaan-e-Islamia.
- Chakravarty, S. 2012. Vanishing World Forests: why and how to save it? Nur 3: 54-60. A yearly Id number-Saranika published by Cooch Behar District Anjumaan-e-Islamia.
- 3. Kumari; A.; Shukla, G. and **Chakravarty, S**. 2013. Plant trees, control climate change. *Nur* **4**: 35-37. A yearly Id number-Saranika published by Cooch Behar District Anjumaan-e-Islamia.