Dr. Gangadhar Barlaya

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Educational Qualifications

M.Sc., B.L.I.Sc., Ph.D., Post Doc (Netherlands)

Areas of specialization

Periphyton enhancement in aquaculture, breeding of Peninsular carps, alternate protein sources for fish.

Current areas of research

1. Live food enhancement strategies in culture systems through periphyton and nutrient management.
2. Broodstock development and seed production of cultivable Peninsular carps.
3. On-farm growth evaluation of peninsular carps.
4. Nutritional studies with peninsular carps.

Awards & Recognitions

- Research Associateship from Council for Scientific and Industrial Research (CSIR), Government of India, New Delhi.
- Department of Science and Technology (DST), Government of India, New Delhi (3 years) under Fast Track Scheme for Young Scientists.

Reviewer for journals - Indian Journal of Fisheries, Fishery Technology, Cogent Food and Agriculture, Indian Journal of Animal Nutrition, Journal of Environmental Biology, Journal of Microscopy and Ultrastructure, Insights in Aquaculture and Biotechnology, Aquaculture Research, Aquaculture Nutrition, Asian Fisheries Science, Turkish Journal of Fisheries and Aquatic Sciences, Journal of the World Aquaculture Society, Cientia Rural, Asian Journal of Fisheries and Aquatic Research, Journal of Applied Aquaculture, Journal of Experimental Zoology Part A: Ecological Genetics and Physiology

Highlights of Research Contribution (Upto 5 bullet points)

- Utilisation of periphyton technology for seed rearing and culture of the carps.
- Use of alternate feed ingredients like spirulina, azolla, silkworm pupae, green bottle fly larvae in the diets for carps.
- Induced breeding of pond raised endangered Deccan mahseer, *Tor khudree*
- Use of hormonal and non-hormonal growth promoters in the diets for seed rearing and culture of carps.

Publications

Research papers in peer reviewed journals – 66

Book chapters – 2

Popular articles - 10

Research papers

1. Basavaraja, N., B. Gangadhara and K.S. Udupa (1997). Successful induction of sterilization and growth improvement of common carp, C*yprinus carpio* through dietary administration of the androgen norethindrone. Asian Fisheries Science 10: 29-40.

2. Basavaraja, N., B. Gangadhara and K.S. Udupa (1997). Effect of diethystilbestrol incorporated diet on sex ratio and body composition of common carp, *Cyprinus carpio.* Journal of Aquaculture in the Tropics 12: 209-218.

3. Gangadhara, B., M.C. Nandeesha, T.J. Varghese and P. Keshavanath (1997). Effect of varying protein and lipid levels on the growth of rohu, *Labeo rohita.* Asian Fisheries Science 10: 139-147.

4. Gangadhara, B., M.C. Nandeesha, T.J. Varghese and P. Keshavanath (1998). Effect of feeding 19-norethisterone on growth and body composition of rohu, *Labeo rohita*. Asian Fisheries Science 11: 51-58.

5. Nadeesha, M.C., B. Gangadhara, T.J. Varghese and P. Keshavanath (1998). Effect of feeding S*pirulina platensis* on the growth, proximate composition and organoleptic quality of common carp, C*yprinus carpio* L. Aquaculture Research 29: 305-312.

6. Nandeesha, M.C., B. Gangadhara and J.K. Manissery (1999). Silkworm pupa oil and sardine oil as additional energy sources in the diet of common carp, *Cyprinus carpio*. Asian Fisheries Science 12: 207-215.

7. Gangadhara, B., M.C. Nandeesha, T.J. Varghese and P. Keshavanath (2000). Effect of 19-norethisterone on growth, biochemical composition and gut digestive enzyme activity of common carp, *Cyprinus carpio* L. Journal of Aquaculture in the Tropics 15: 1-10.

8. Manissery, J.K., D. Krishnamurthy, B. Gangadhara, and M.C. Nandeesha (2000). Nursery rearing of catla (*Catla catla*) under different dietary protein and fertilization levels. Fishery Technology 36: 120-124.

9. Nandeesha, M.C., B. Gangadhara, T. J. Varghese and P. Keshavanath (2000). Effect of dietary sodium chloride supplementation on growth, biochemical composition and digestive enzyme activity of *Cyprinus carpio* (Linn.) and *Cirrhinus mrigala* (Ham.). Journal of Aquaculture in the Tropics 15: 135-144.

10. Nandeesha, M.C., B. Gangadhara, K. Dathathri, T.J. Varghese, D. Krishnamurthy and N.R. Umesh (2000). Growth response and flesh quality of common carp, *Cyprinus carpio* to higher levels of non-defatted silkworm pupa incorporated diets. Asian Fisheries Science 13: 235-241.

11. Ramesh, T.J. and B. Gangadhara (2000). Physico-chemical characteristics of different aquatic systems. Current Research 29: 171-173.

12. Keshavanath, P., B. Gangadhar, T.J. Ramesha, J.M. Van Rooij, M.C.J. Verdegem, D.J. Baird and M.C.M. Beveridge (2001). Use of artificial substrates to enhance production of herbivorous fish in pond culture. Aquaculture Research 32: 189-198.

13. Nandeesha, M.C., B. Gangadhara, J. K. Manissery and L.V. Venkataraman (2001). Growth performance of two Indian major carps, catla (*Catla catla)* and rohu (*Labeo rohita)* fed with diets containing different levels of *Spirulina platensis*. Bioresource Technology 80: 117-120.

14. Manissery, J.K., D. Krishnamurthy, B. Gangadhara and M.C. Nandeesha (2001). Effect of varied levels of dietary protein on the breeding performance of common carp, *Cyprinus carpio*. Asian Fisheries Science 14: 317-322.

15. Gireesha, O., T.J. Ramesha, B. Gangadhara and T. J. Varghese (2001). Nutrient digestibility, body indices and organoleptic quality of Catla, *Catla catla* fed Livol-F incorporated diets. Livestock International 5(11): 11-14.

16. Abraham, S., T.J. Ramesha, B. Gangadhara and T. J. Varghese (2001). Growth response of common carp, Cyprinus carpio (Linn.) to varied levels of Livol, a non-hormonal growth promoter. Indian Journal of Fisheries 48(4): 397-401.

17. Keshavanath, P., T.J. Ramesha, B. Gangadhara, M.C.M. Beveridge, A. A. van Dam and M.C.J. Verdegem (2001). A field trial on pond carp production with sugarcane bagasse as substrate for periphyton. Asian Fisheries Science 14: 367-376.

18. Maheshappa, K., T.J. Ramesha, B. Gangadhara and T. J. Varghese (2002). Effect of feeding Livol incorporated diets on nutrient digestibility, body indices and organoleptic quality of rohu, *Labeo rohita*. Indian Journal of Fisheries 49(4): 447-450.

19. Hanumanthappa, H., P. Keshavanath, A.T. Ramachandra Naik and B. Gangadhara (2002). Effect of a non-hormonal feed additive Cholymbi on growth, body composition and digestive enzyme activity of common carp, *Cyprinus carpio*. Indian Journal of Experimental Biology 40: 366-368.

20. Keshavanth, P., K. Manjappa and B. Gangadhara (2002). Evaluation of carbohydrate rich diets through common carp culture in manured tanks. Aquaculture Nutrition 8: 169-174.

21. Nandeesha, M.C., B. Gangadhara and J.K. Manissery (2002). Further studies on the use of mixed feeding schedules with plant and animal based diets for common carp *Cyprinus carpio* L. Aquaculture Research 33: 1157-1162.

22. Keshavanath, P., B. Gangadhara, T.J. Ramesh, M.C.M. Beveridge, M.C.J. Verdegem, Anne van Dam and D.J. Baird (2002). Performance of indigenous carps, *Tor khudree* and *Labeo fimbriatus* in fed and non-fed tanks with different bamboo substrate densities. Aquaculture 213: 207-218.

23. Manjappa K., P. Keshavanath and B. Gangadhara. (2002). Growth performance of common carp, *Cyprinus carpio* fed varying lipid levels through low protein diet, with a note on carcass composition and digestive enzyme activity. Acta Ichthyologica et Piscetoria 32(2): 145-155.

24. Gangadhara, B., M.C. Nandeesha, P. Keshavanath and J.K. Manissery (2002). Evaluation of rapeseed meal as a feed ingredient in catla (*Catla catla)* diet. Journal of Aquaculture in the Tropics 17(4):261-272.

25. Maheshappa, K., T.J. Ramesha, B. Gangadhar and T.J. Varghese (2002). Effect of feeding livol incorporated diet on nutrient digestibility, body indices and organoleptic quality of rohu, *Labeo rohita*. Indian Journal of Fisheries 49(4): 447-450.

26. Manissery, J.K., K. Venkateshmurthy, B. Gangadhara, and M.C. Nandeesha (2004). Breeding performance of catla, *Catla catla* (Ham.) fed with different formulated diets. Fishery Technology 41(1): 1-4.

27. Gangadhara, B., P. Keshavanath, and T.J. Ramesha (2004). Digestibility of bamboo grown periphyton by carps and tilapia. Journal of Applied Aquaculture 15(3/4): 151-162.

28. Gangadhara, B., M.C. Nandeesha, P. Keshavanath and T.J. Varghese (2004). Growth response, biochemical composition and digestive enzyme activity of *Labeo rohita* (Ham.) fed salt incorporated diets. Journal of Applied Aquaculture 16(1/2):169-176. DOI: 10.1300/J028v16n01_15.

29. Keshavanath, P., B. Gangadhara, T.J. Ramesh, A. A. van Dam, M.C.M. Beveridge and M.C.J. Verdegem (2004). Effect of bamboo substrate and supplemental feeding on growth and production of hybrid red tilapia fingerlings (*Oreochromis mossambicus* × *Oreochromis niloticus*). Aquaculture 235: 303-314.

30. Keshavanath P., Shivanna and Gangadhara, B. (2006). Evaluation of sugarcane by-product pressmud as a manure in carp culture. Bioresource Technology 97: 628-632.

31. Keshavanath, P., B. Gangadhara and N. Basavaraj (2006). Induced breeding of pond raised mahseer, *Tor khudree* using carp pituitary and ovaprim. Asian Fisheries Science 19:411-422.

32. Gangadhara, B. and P. Keshavanath (2008). Planktonic and biochemical composition of periphyton grown on some biodegradable and non-degradable substrates. Journal of Applied Aquaculture 20 (3): 213-232.

33. Manjappa, K., P. Keshavanth and B. Gangadhara (2009). Performance of *Catla catla* (Ham.) fingerlings fed with carbohydrate rich diets in manured tanks. Asian Fisheries Science 22(3): 991-1004.

34. Manjappa, K., P. Keshavanth and B. Gangadhara (2011). Influence of sardine oil supplemented fish meal free diets on common carp (*Cyprinus carpio*) growth, carcass composition and digestive enzyme activity. Journal of Fisheries and Aquatic Sciences 6(6): 604-613.

35. Priyadarshini, M., Manissery, J.K., Gangadhar, B., Rao, L. M. and Keshavanath, P. (2011). Growth response of *Catla catla* (Actinopterygii: Cypriniformes: cyprinidae) to soya and maize supplemented traditional feed mixture. Acta Ichthyologica et Piscatoria 41(3): 159-164.

36. Priyadarshini, M., Manissery, J.K., Gangadhar, B. and Keshavanath, P. (2011). Influence of feed, manure and their combination on the growth of *Cyprinus carpio* (L.) fry and fingerlings. Turkish Journal of Fisheries and Aquatic Sciences 11: 597-606.

37. Keshavanth, P., Savitha Khadri and Gangadhar, B. (2011). Growth performance, muscle composition and digestive enzyme activity of *Macrobrachium rosenbergii* (De Man) fed salt incorporated diets. Journal of Aquaculture in the Tropics 26(1-2): 55-62.

38. Keshavanth, P., Jayaram, K.E. and Gangadhar, B. (2011). Effect of feed additive Nutripro-Aqua on growth, muscle composition and digestive enzyme activity of *Macrobrachium rosenbergii* (de Man). Journal of Aquaculture in the Tropics 26(3-4): 103-112.

39. Keshavanth, P., Manissery, J.K., Ganapathi Bhat, A. and Gangadhar, B. (2012). Evaluation of four biodegradable substrates for periphyton and fish production. Journal of Applied Aquaculture 24:60-68.

40. Gangadhar, B. and Keshavanath, P. (2012). Growth performance of rohu, *Labeo rohita* (Ham.) in tanks provided with different levels of sugarcane bagasse as periphyton substrate. Indian Journal of Fisheries 59(3): 77-82.

41. Saurabh, S., Sridhar, N., Gangadhar, B. Raghavendra, C.H., Raghunath, M.R., Hemaprasanth, K.P., Swain, S.K. and Jayasankar, P. (2013). Growth performance of fry of the black-spot barb *Puntius filamentosus* (Valenciennes, 1844) fed live feeds and artificial feed. Indian Journal of Fisheries 60(4): 137-140.

42. Gangadhar, B. Sridhar, N., Saurabh, S., Raghavendra, C.H., Hemaprasanth, K.P., Raghunath, M.R. and Jayasankar, P. (2014). Growth response of *Cirrhinus mrigala* to Azolla (*Azolla pinnata*) incorporated diets during fry to fingerling rearing. Fishery Technology 51: 156-161.

43. Gangadhar, B., Nandeesha, M.C. and Keshavanath, P. (2014). Growth response of rohu, *Labeo rohita* (Ham.) fry to salt (NaCl) incorporated diets. Indian Journal of Fisheries 61(3): 125-128.

44. Raghunath M. R., Umalatha, H. Sridhar, N. Hemaprasanth K., Gangadhar B. and Jayasankar P. (2015). Spoilage indices in chill-stored rohu steaks extracted with different concentrations of Trichloroacetic acid. Fishery Technology 52(1): 42–47.

45. Keshavanath, P., Gangadhara, B., Ramesh T.J., Priyadarshini, M. van Dam, A. A. Verdegem M.C.J. and Beveridge M.C.M. (2015). Impact of substrates and fish stocking density on growth and production of the Indian major carp, *Labeo rohita* (Ham.). Journal of Aquaculture in the Tropics 30(1-2):1-14.

46. Gangadhar, B., Sridhar, N., Saurabh, S., Raghavendra, C.H., Hemaprasanth, K.P., Raghunath, M.R. and Jayasankar, P. (2015). Effect of azolla-incorporated diets on the growth and survival of *Labeo fimbriatus* during fry-to fingerling rearing. Cogent Food and Agriculture 1: 1055539, DOI 10.1080/23311932.2015.1055539.

47. Priyadarshini M., Manissery J.K., Gangadhara B., Rao L. M., and Keshavanath P. (2015). Growth performance, body composition and digestive enzyme activity of common carp (*Cyprinus carpio*) fry fed on soybean and horse gram supplemented diets, International Journal of Aquaculture, 5(17): 1-7.

48. Gangadhar, B., Sridhar, N., Saurabh, S., Raghavendra, C.H., Raghunath, M.R. and Hemaprasanth. K. (2015). Influence of periphyton based culture systems on growth performance of fringe-lipped carp *Labeo fimbriatus* (Bloch, 1795) during fry to fingerling rearing. Indian Journal of Fisheries 62(3): 118-123.

49. Tortolero, S.A.R., Cavero, B.A.S., Brito, J.G., Soares, C.C., Silva Junior, J.L.. Barbosa, H.T.B.. Gangadhar, B. and Keshavanath, P. (2015). Periphyton-based polyculture of jaraqui, *Semaprochilodus insignis* (Schomburgk, 1841) and tambaqui, *Colossoma macropomum*

(Cuvier, 1816) with feed supplementation. Journal of Aquaculture in the Tropics 30(3-4): 111-132.

50. Gangadhar, B., Sridhar, N., Hemaprasanth, K., Raghunath, M.R., Jayasankar, P. (2016). Indigenous technical knowledge in aquaculture sector: A literature review. International Journal of Fisheries and Aquatic Studies 4(1): 373-378.

51. Gangadhar, B., Sridhar, N., Umalatha, Raghavendra, C.H., Santhosh, H.J., Jayasankar, P. (2016). Growth performance and digestive enzyme activities of fringe-lipped carp *Labeo fimbriatus* (Bloch, 1795) in periphyton based nursery rearing system. Indian Journal of Fisheries 63(1): 125-131.

52. Raghunath, M.R., N. Sridhar, K. Hemaprasanth, B. Gangadhar, B. S. Ananda Kumar, N. Rajesh, H. Umalata, G. Hegde and P. Jayasankar (2016). Carcass Characteristics of a Farmed Medium Carp *Hypselobarbus pulchellus* (Day, 1878). Fishery Technology 53(1) : 1 – 7.

53. Tortolero, S.A.R., Cavero, B.A.S., Brito, J.G., Soares, C.C., Silva Junior, J.L., Almeida, J.C., Gangadhar, B. and Keshavanath, P. (2016). Periphyton-based jaraqui (*Semaprochilodus insignis*) culture with two types of substrates at different densities. Turkish Journal of Fisheries and Aquatic Sciences. 16: 347-359.

54. Hemaprasanth, K.P., Raghunath, M.R., Gangadhar, B., Saurabh, S., Raghavendra, C.H., Sridhar N. and Jayasankar, P. (2016). Polyculture of *Puntius pulchellus* with *Catla catla* and *Labeo rohita*. Journal of Aquaculture in the Tropics. 31 (1-2): 83-89.

55. Gangadhar, B., Sridhar, N., Umalatha, H., Hegde, G., Jayasankar, P. (2016). Taxonomic and biochemical composition and digestive enzyme activity of periphyton and plankton: a comparative study. Proceedings of National Academy of Science, India, Sect. B Biological Sciences 88(2): 715–720. DOI 10.1007/s40011-016-0805-0

56. Umalatha, Sridhar, N. Kushwaha, J.P. and Gangadhar, B. (2016). Digestive enzyme activities in different size groups and segments of the digestive tract in *Labeo rohita* (Day, 1878). Journal of Aquaculture and Marine Biology. 4(5):00098. DOI:10.15406/ Jamb. 2016.04.00098.

57. K. Manjappa, P. Keshavanath and B. Gangadhar. Growth response of Catla catla (Hamilton, 1822) raised in manured tanks on low fishmeal diets, with a note on carcass composition and digestive enzyme activity. Indian J. Fish., 63(4): 96-103, 2016.

58. Gangadhar, B., Umalatha H., Hegde G., Vasundhara R. and Sridhar N. (2017). Influence of commonly used manures on the growth and nutrient composition of periphyton. Insights in Aquaculture and Biotechnology. 1:1.

59. Gangadhar, B., Sridhar, N., Umalatha, H., Ganesh, H., Simon, A.R.T. and Jayasankar, P. (2017). Digestibility and digestive enzyme activity in *Labeo fimbriatus* (Bloch, 1795) fed periphyton grown on sugarcane bagasse. Indian Journal of Fisheries 64(1): 37-43.

60. Gangadhar, B., Umalatha H., Hegde G. and Sridhar N. (2017). Digestibility of dry matter and nutrients from *Azolla pinnata* by *Labeo calbasu* (Hamilton, 1822) with a note on digestive enzyme activity. Fishery Technology 54 (2):94-99.

61. Gangadhar, B., Umalatha H., Ganesh, H., Saurabh, S. and Sridhar N. (2017). Digestibility of dry matter and nutrients from three ingredients by the carps, *Labeo fimbriatus* and *Cyprinus carpio* with a note on digestive enzyme activity. Indian Journal of Fisheries 64(3): 75-84.

62. Sridhar N., Gangadhar, B., Umalatha, Raghavendra, C.H., Giri, S.S. and Jayasankar, P. (2017). Effect of dietary protein levels on the growth of Carnatic carp *Barbodes carnaticus*

(Jerdon, 1849) fingerlings. Indian Journal of Fisheries 64 (Special Issue): 194-199.

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Google Scholar: https://scholar.google.co.in/citations?hl=en&user=Dh_LHzoAAAAJ

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