

1. Record Nr.	UNINA9910437826103321
Titolo	Swimming physiology of fish : towards using exercise to farm fit fish in sustainable aquaculture // Arjan P. Palstra, Josep V. Planas ; editors
Pubbl/distr/stampa	Heidelberg, : Springer, 2012, c2013
ISBN	1-283-63082-6 9786613943279 3-642-31049-4
Descrizione fisica	1 online resource (426 p.)
Altri autori (Persone)	PalstraArjan P PlanasJosep V
Disciplina	597.1479
Soggetti	Sustainable aquaculture Fishery management Fishes - Exercise Fishes - Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Salmonid reproductive migration and effects on sexual maturation -- Extreme swimming: the oceanic migrations of anguillid eels -- Physiology of swimming and migration in tunas.-Forced and preferred swimming speeds of fish – A methodological approach -- Effects of turbulence on fish swimming in aquaculture -- The effect of hypoxia on fish swimming performance and behaviour -- Exercise, stress and welfare -- Swimming enhanced growth.-Metabolic fuel utilization during swimming: Optimizing nutritional requirements for enhanced performance -- Transcriptomic and proteomic response of skeletal muscle to swimming-induced exercise in fish -- Molecular adaptive mechanisms in the cardiac muscle of exercised fish -- Exercise effects on fish quality and implications for consumer preferences -- Swimming effects on developing zebrafish -- Exercise physiology of zebrafish: Swimming effects on skeletal and cardiac muscle growth, on the immune system and the involvement of the stress axis -- Swimming flumes as a tool for studying swimming behavior and physiology: current applications and future developments -- Practical aspects of

induced exercise in finfish aquaculture -- Robotic fish to lead the school.

---

Sommario/riassunto

In light of mounting fishing pressures, increased aquaculture production and a growing concern for fish well-being, improved knowledge on the swimming physiology of fish and its application to fisheries science and aquaculture is needed. This book presents recent investigations into some of the most extreme examples of swimming migrations in salmons, eels and tunas, integrating knowledge on their performance in the laboratory with that in their natural environment. For the first time, the application of swimming in aquaculture is explored by assessing the potential impacts and beneficial effects. The modified nutritional requirements of "athletic" fish are reviewed as well as the effects of exercise on muscle composition and meat quality using state-of-the-art techniques in genomics and proteomics. The last chapters introduce zebrafish as a novel exercise model and present the latest technologies for studying fish swimming and aquaculture applications.

---