

CONTENTS

Preface	1
Group Photo	2
Contents	3
Program for 52 nd Scientific Symposium of UJNR Aquaculture Panel	5

Contributed Papers and Abstracts

1. Multifunctional use of insects in aquaculture (Takeshi Miura, and Chiemi Miura)	9
2. Validation of the suitability of full fat and defatted black soldier fly larvae meals in diets for rainbow trout (<i>Oncorhynchus mykiss</i>) (Wendy M. Sealey, Ken Overturf, Gary Burr, Jesse Trushenski, Patrick Crowley, and Kari Madden)	15
3. Protein assimilation of black soldier fly larvae <i>Hermetia illucens</i> in diets for red seabream <i>Pagrus major</i> (Tadashi Andoh, Takeshi Hano, Kenji Ishihara, and Takuya Seko)	31
4. Omics analysis of red seabream (<i>Pagrus major</i>) fed a soybean meal-based diet (Hazuki Yoshinaga, Motoshige Yasuike, Miyuki Mekuchi, Satoshi Soma, Takeshi Yamamoto, Koji Murashita, Hiroyuki Matsunari, Hiromi Oku, and Hirofumi Furuita)	37
5. Frass from black soldier fly larvae as an aquafeed ingredient: Nutritional value and potential health benefits (Mediha Yildirim-Aksoy, and Benjamin B. Beck)	45
6. Effect of feeding black soldier fly larvae diets on growth and culture condition of kuruma prawn (<i>Penaeus japonicus</i>) (Katsutoshi Ito, Mana Ito, and Ryuhei Nakamura)	55
7. Current status of artificial seed production and selective breeding in Japanese yellowtail <i>Seriola quinqueradiata</i> : The progress achieved by Japan Fisheries Research and Education Agency (Kenta Adachi, Shohei Takuno, Tsubasa Uchino, Takuma Sugaya, Ikki Yamamoto, Daisuke Izumida, Kazuhisa Teruya, Yoshiko Shimahara, Kiko Shibata, Yuichiro Fujinami, Takurou Hotta, Hideki Yamazaki, Kazuki Akita, Taro Chujo, Masato Kobayashi, Kentaro Oda, Daisaku Oinaka, Hajime Kitano, Hiroyuki Okouchi, and Tetsuji Masaoka)	63
8. Evaluation of growth performance and genetic analysis of rainbow trout (<i>Oncorhynchus mykiss</i>) reared in freshwater and seawater in Japan (Tsubasa Uchino, Eisuke Nakamura, Hajime Matsuyama, Takashi Katayama, Sou Nagasoe, Shohei Takuno, Mitsuru Endoh, Hiroyuki Okamoto, Akiyuki Ozaki, and Atushi Fujiwara)	71

9. Monosex breeding technology for sablefish aquaculture: a mini-review (J. Adam Luckenbach, William T. Fairgrieve, and Edward S. Hayman)	79
10. Developing vaccination strategies for the prevention of atypical furunculosis in sablefish <i>Anoplopoma fimbria</i> (Kenneth D Cain, Joseph P. Dietrich, Veronica Myrsell, Cameron Schuster, Matthew Hawkyard, Wendy Olson, and Jie Ma)	89
11. Hygiene management is important to prevent red sea bream iridovirus transmission between net pens: Insights from a case study assessing cross-contamination in a fish farm (Yasuhiko Kawato, Yuzo Takada, Tomomasa Matsuyama, Tomofumi Kurobe, Tomoki Honryo, Sho Shirakashi, and Shukei Masuma)	99
12. Disease control measures in hirame hatchery: A case of hirame aquareovirus infection (Tomoki Maeda, Yasuhiko Kawato, Daisuke Shimizu, and Toyohiro Nishioka)	103
13. Opportunities and challenges for Alaska kelp aquaculture (Jordan A. Hollarsmith, and Rebecca J. Cates)	107
14. Present status and future scope of seaweed aquaculture in Japan (Hiromori Shimabukuro)	115
15. Production improvement of nori aquaculture using biostimulants (Mahiko Abe, Chizuru Tara, Shinya Fujiki, Shusaku Kawasaki, and Noboru Murase)	121
16. Seaweed seedling culture technique using LEDs and feeding behavior of herbivorous fish to suppress fouling by other seaweeds - in the case of “ <i>hiziki</i> ” <i>Sargassum fusiforme</i> culture - (Tsutomu Noda, Tatsuru Kadota, Tomoyuki Shikata, and Yuichiro Fujinami)	127
17. Advantages of small-sized macroalgae in seaweed bed restoration in Kyushu, western Japan (Tatsuru Kadota, Hideaki Yamada, Huamei Shao, and Tsutomu Noda)	133
18. Pacific oyster condition and mortality in a U.S. Pacific coast estuary: Can relationships with environment and reproductive state be utilized to sustain future production? (Brett R. Dumbauld, Xiuning Du, Zachary Forster, and Matthew N. George)	141
19. Image analysis for estimating soft body mass from shell morphology in <i>Crassostrea gigas</i> (Junpei Shinji, Ryutaro Kamiyama, Kenshiro Yamanaka, and Takahiro Matsui)	153