

水产—研究报告

星斑川鲽仔稚鱼消化系统发育的组织学研究

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摘要:

使用石蜡切片技术对1-35日龄星斑川鲽的仔稚鱼消化系统进行组织学观察和研究。结果表明,星斑川鲽消化系统的发育主要分成三个阶段:从初孵到3日龄是卵黄阶段,其消化道为一细长的管道;从3日龄到5日龄是后卵黄阶段(混合营养阶段),卵黄被逐渐吸收,是卵黄阶段转向外源性营养阶段的过渡,消化道明显分化成口咽腔、食道、胃、前中肠、后肠和肛门,仔鱼消化系统具备了摄食和消化外源性食物的能力。此后,随着鱼体的生长,粘膜层的褶皱增加,消化道上皮细胞进一步分化,消化系统从功能和结构上逐步完善。16日龄,胃腺出现,标志着稚鱼期的开始,表明星斑川鲽是一种发育较快的鱼类。

关键词: 胃腺

Histological Studies on the Development of Digestive system In Larval and Juvenile Starry Flounder

Abstract:

A histological examination was made on the development of digestive system in larval and juvenile starry flounder *Platichthys stellatus* Pallas from 1 day to 35 days. In 3 days, the digestive tract in the larvae was formed but no food was intaken when the starry flounde was in endotrophic stage. In 3-5 days, the mixotrophic stage which was the transition from endo- trophic stage to exdoerophic stage, the yolk was absorbed fairly well and disappesred, while the digestive tract was differentiated into six portions: buccopharynnx, soesophagus, stomach, anterior- middleinte- stine, posterior intestine and anus. The larval digestive system was morphologically ready to be absorbed to food at this time. Then, these digestive tract and associated glands became mature gradually with the development. Gastric glands were observed in 16 days, which indicates he was a kind of fish faster development.

Keywords: Gastric glands

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参考文献:

[1] 李思忠, 王惠民. 中国动物志?硬骨鱼纲?鲽形目[M]. 北京: 科学出版社, 1995: 251-253.

[2] 王波, 孙萍, 方华华等.星斑川鲽形态性状及相关参数的观测[J].海洋学报,2010, 23 (2): 139-147.

[3] Policansk, Y. D. Sieswerd, A.P. Early life history of the starry flounder, *Platichthys stellatus*, reared through metamorphosis in the laboratory[J]. Transactions of the American Fisheries Society,1979, 108 :3262-3271.

[4] 刘振华, 王波, 姚振刚, 等. 星斑川鲽仔、稚、幼鱼的形态发育与生长[J]. 海洋科学进展, 2008, 26 (1): 90-97.

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- [5] Balon, E. K. Terminology of intervals in fish development[J]. J Fish Res Board Can ,1975, 32:1663 - 1670.
- [6] Baglolle, C. J., Murray,H.M., Goff, G.P., et al. Ontogeny of the digestive tract during larval development of yellowtail flounder:a light microscopic and mucous histochemical study[J]. J.Fish Biol. 1997.51: 120 - 134.
- [7] Gisbert E , Piedrahita R.H., Conklin, D.E. Ontogenetic development of the digestive system in California halibut(*Paralichthys californicus*)with notes on feeding practices [J].Aquaculture.2004.232: 455 - 470.
- [8]常青, 陈四清, 张秀梅, 等 . 半滑舌躄消化系统器官发生的组织学[J]. 水产学报, 2005, 29(4): 447-452.
- [9] 王思峰, 张志峰, 张全启, 等. 圆斑星鲽仔鱼变态前消化系统发生的形态学和组织学研究[J]. 中国水产科学, 2006,1 (13) : 1-7.
- [10] Sarasquetem, M.C., Polo, A., Yufera, M. Histology and histochemistry of the development of the digestive system of larval gilthead seabream *Sparus aurata* L[J]. Aquaculture . 1995 . 130 : 79 - 92.
- [11] Murray, H.M., Wright, G.M., Goff, G.P.. A study of the posterioresophagus in the winter flounder , *Pleuronectes americanus* , and the yellowtail flounder , *Pleuronectes ferruginea* : a morphological evidence of pregastric digestion[J]. Can J Zool , 1994 , 72 :1191 - 1198.
- [12] Ezeasor, D. N., et al. Scanning electron microscopic study of the gut mucosa of the rainbow trout *salmo gairdneri* Richardson[J]. J.fish Biology , 1980.17:529-539.
- [13] Gawlicka, A., Leggisdro, C.T., Gallart, W., et al. Cellular expression of the pepsinogen and gastric proton pump genes in the stomach of winter flounder as determined by in situ hybridization[J]. J.Fish Biol.,2001,58:529 - 536.
- [14] 单秀娟. 鲈早期生长存活过程和消化生理机制的研究[D]. 青岛: 中国科学院海洋研究所, 2008: 75-89.
- [15] 李 侠, 刘振华, 王 波. 星斑川鲽外部形态与内部解剖特征的研究[J]. 河北渔业, 2009, 4: 19-21.
- [16] Watanabe,Y. Ingestion of horseradish peroxidase by intestinal cells in larvae or juveniles of some teleosts[J]. Bull Jap Soc Sci Fish ,1981 ,47 :1299 - 1307.
- [17]Watanabe,Y. Morphological and functional changes in rectal epithelium cells of pond smelt during postembryonic development[J]. Bull Jap Soc Sci Fish , 1984 ,50 :805 - 814.
- [18] Iwai, T. The comparative study of the digestive tract of teleost larvae- V. Fat absorption in the gut epithelium of goldfish larvae[J]. Bull Jap Soc Sci Fish , 1968 , 34 : 973 - 978.
- [19] Bisbal, G.A., Bengtson, D.A., Development of the digestive tract in larval summer flounder[J]. J . Fish Biol . ,1995 ,47 :277 - 291.

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