

Survey of literature for frogs

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Authors: Alvarez, R. and Real, M.

Title: Significance of initial weight of post-metamorphosis froglets for growth and fattening of *Rana perezi* Seoane, 1885, raised in captivity.

Source: Aquaculture (2006), 255(1/4): 429-435.

Language: English

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Abstract: In rearing the American bullfrog (*R. catesbeiana*) in captivity, account is taken of the size of the froglets in order to achieve good survival rates and homogenous batches after fattening. The present study investigates the survival and several growth and food utilization parameters for three batches of *Rana perezi* froglets, differing one from another in terms of the animals' starting weight. The results show that animals starting at a weight of 0.89 to 1.10 g show the best combination of the parameters analysed, and that the smallest (weights around 0.77 g) should be excluded when considering raising the Iberian green frog in captivity.

Authors: Pasteris, S. E., Buhler, M. I. and Nader-Macias, M. E.

Title: Microbiological and histological studies of farmed-bullfrog (*Rana catesbeiana*) tissues displaying red-leg syndrome.

Source: Aquaculture (2006), 251(1): 11-18.

Language: English

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Abstract: *Rana catesbeiana* is one of the delicacies of international gastronomy. Farming operations often lead to an increased risk of diseases and mortality. The present work addresses microbiological and histological studies in *R. catesbeiana* with red-leg syndrome (RLS), infection that causes significant economic losses in hatcheries. Partial phenotypical identification demonstrated that the microbial populations isolated from the skin of fattening phase animals and freshwater samples during the autumn (June) are grouped into the following taxa: *Lactobacillus* spp., *Pediococcus* spp., *Micrococcus* spp., *Enterococcus faecalis*, *Ent. faecium* and *Enterobacteriaceae* (*Enterobacter* spp. and *Proteus vulgaris*). Microbial infection on target organs (liver/spleen) and blood showed the presence of *Pr. vulgaris*, *Staphylococcus aureus* and *Enterococcus* strains. Histological studies of skin ulcerations showed epithelial necrosis, diskeratosis, apoptosis and espongiosis. No sporangia associated with chitridiomycosis were observed. The dermis presented oedema, dilated vascular light, fibrin-leucocytic exudates and distortion of serous and granular glands. The liver showed centrilobular necrosis and a decrease in melanin containing cells. The spleen presented wide areas of septic infarct. This paper reports the presence of lactic acid bacteria and other genera in the skin and freshwater from farmed *R. catesbeiana* during the autumn and a correlation between microbial infection and structural changes in tissues of bullfrogs with RLS. The severity of the structural changes is related to the level of microbial infection in the target organs and could be sustained by the isolation of *Pr. vulgaris* and other pathogens.