

Aquaculture Special Edition

CAHFS

CONNECTION

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Aquatic Health Services

The California Animal Health and Food Safety Laboratory System (CAHFS) is excited about providing services for our aquatic and aquaculture clients. Dr. Akinyi Nyaoke, a veterinary pathologist at our San Bernardino laboratory with extensive aquatic experience, is now offering her professional expertise in addressing health issues in these species. We are currently offering necropsy, histopathology, and bacteriology on most aquatic species. Molecular assays for detection of koi herpes virus, infectious salmon anemia virus and viral hemorrhagic septicemia virus are in the validation phases.

When submitting your samples, it is important that a complete clinical history of your fish be included. Submission of digital images/photos of the health issue your facility is experiencing can also be helpful. Prior to submitting to the laboratory, please contact Dr. Nyaoke or any San Bernardino laboratory pathologist at 909-383-4287 so they can assist you with submitting the correct samples and proper shipping requirements.

Some interesting aquatic cases CAHFS has seen include:

Lymphosarcoma in an aquarium-held Arowana: Multiple formalin-fixed biopsies of a slow growing, raised, fleshy mass involving skeletal muscle and covered by ulcerated skin in the right body wall of an aquarium-held arowana revealed lymphosarcoma with rafts of neoplastic cells in the dermal vasculature [leukemia]. Lymphosarcomas are one of the more commonly identified tumors in fish.

Parasitic infections in juvenile bass: Several juvenile bass were submitted from a production facility with history of increased mortality. Clinical signs included fish swimming at the surface and weight loss. Fish had pale gills and numerous, white nodules scattered throughout viscera and the mesentery. Histopathology revealed disseminated parasitic granulomas with intralesional nematodes and larval cestodes. There was moderate to severe proliferative branchitis. The mortality was resolved following management of water quality issues, improved quarantine methods before introduction of fish into ponds, and parasite control.

Fungal infection in farmed Sturgeons: Fungal outbreaks occurred over a five year period in farmed juvenile and subadult sturgeon. Clinical signs included emaciation, coelomic distension, abnormal buoyancy, and ulcerative skin and eye lesions. On necropsy, there was serosanguineous fluid and hemorrhage in the coelomic cavity, and variably sized nodular to cystic lesions in multiple organs. Fungal hyphae were noted on tissue wet mounts and histopathology revealed widespread organ infiltration by melanized fungal hyphae. A fungal species not previously associated with infection in fish was identified by phenotypic and molecular methods from culture isolates.

Mycobacteriosis in a multispecies aquarium: Disseminated mycobacteriosis was identified in several fish from a multispecies exhibit tank. Fish were emaciated with distended coelom, few exhibited exophthalmos and had pallor in coloration. Beaded acid-fast bacilli were identified in viscera, gills, extradural sinus, and eye.