

## **Anti-oomycetic effect of copper sulfate in vitro on *Achlya* spp. isolated from infected Nile tilapia (*Oreochromis niloticus*)**

### **Abstract**

The aims of the present study were to determine the oomycetecidal effect of copper sulfate on both vegetative and zoosporic stages of water molds, *Achlya* spp., in in vitro tests and to evaluate the efficacy toxicity on Nile tilapia (*Oreochromis niloticus*) fry. The results show that copper sulfate at 100 mgL<sup>-1</sup> killed both the vegetative stage of five selected *Achlya* spp. and the zoosporic stage of *A. diffusa* BKKU1012, *A. prolifera* BKKU1125 and *Achlya* sp. BKKU1127. Additionally, 25 mgL<sup>-1</sup> copper sulfate solution could kill the zoosporic stage of *A. klebsiana* BKKU1003 and *Achlya* sp. BKKU1117 and also inhibited zoospore germination of all selected *Achlya* spp. with 30 minutes treatment. In addition, 6.25 and 12.5 mgL<sup>-1</sup> copper sulfate solution had no toxic effect (0% mortality) on the tilapia fry. In contrast, 25, 50 and 100 mgL<sup>-1</sup> copper sulfate solutions had strong toxicity to the fish (100% mortality) with 6 hours, 2 hours and 30 minutes treatment, respectively. Thus, this study revealed that it is possible to use copper sulfate to kill the aquatic oomycetes, *Achlya* spp., if it is given 30 minutes treatment.