

UPM introduces advanced fish surgery technique

KUALA LUMPUR: Universiti Putra Malaysia (UPM) has introduced a fish surgery procedure based on a recirculating anaesthesia system, marking a new advancement in the treatment of aquatic life.

The innovation, known as the Fish Anaesthetic Delivery System, was developed to enable surgical procedures on fish to be carried out more safely and systematically, while maintaining a continuous supply of oxygen throughout treatment.

UPM Veterinary Clinical Studies Department Faculty of Veterinary Medicine veterinary officer Dr Mohd Fuad Matori said the technology is the result of more than 15 years of research.

"The system delivers oxygenated water combined with anaesthetic agents directly to the fish's gills, allowing surgical procedures to be performed outside of water while maintaining respiratory support," he said in a statement yesterday.

He added that a laparotomy demonstration procedure, involving surgical opening of the abdominal cavity, was performed on tilapia as a model species, comprising several key stages, including anaesthesia induction, surgical incision, suturing and post-operative care.

"The entire procedure takes approximately 20 to 30 minutes before the fish is transferred to a specialised recovery tank. Following surgery, the fish are monitored in a dedicated tank for 10 to 14 days before sutures are removed, while complete wound healing may take up to 30 days," he said.

Mohd Fuad said throughout the procedure, antiseptics and antibiotics are used to minimise the risk of infection, while biopsy samples are also collected for microscopic examination and further research purposes.

He said the method is being applied in research and in the treatment of high-value ornamental fish such as koi, goldfish and arowana, including for tumour removal and correction of physical abnormalities.

"It is expected to add value to the country's growing aquaculture industry, particularly in fish health management, breeding and treatment," he said.

He added that the development of expertise in fish health is important as the aquaculture sector is closely linked to national food security and the fisheries industry, while also reflecting UPM's commitment to high-impact research that benefits both industry and society. – Bernama