IN-MINDED, a Practical Solution on Making Catfish Pallets

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IN-MINDED design

The type of fish that is largely farmed in Indonesia is catfish, because its market demand never goes down. Catfish is a fish that is easy to cultivate. However, there are several constraints experienced by UPT PTPBP2KP (Technical Implementation Unit on Technical Training of Aquaculture and Increasing Competitiveness in Marine and Fisheries Products) Kepanjen in catfish cultivation. The constraints are such as catfish needs lots of feeds, expensive feed cost, no alternative feed which has a balanced nutrient, manufacturing of alternative feed which takes a long time.

Lemna minor sp. is a local species which has high protein and good for fish growth. The plant has been known by the community as a feed adder, but its utilization is still very minimal. Based on the results of a study, protein level in lemna minor will increase when it is fermented in appropriate conditions.

Started from the background, Brawijaya University students offered a technology solution that can be applied to UPT PTPBP2KP named as Integrated Machine Fast Fermentation of Lemna Minor Sp. As High-Protein Feed (IN-MINDED), a fast fermentation technology based on Mix-Proportional Ingredient in manufacturing of high protein catfish feed.

IN-MINDED is a technology that consisted of three components including a fermentation machine (fermentor), mixer for feed additives, and pellet printer.

Fermentor has nine liters in capacity and using control system for temperature and pH. This temperature controller will provide optimum and stabil temperature for fermentation. The eye of the catfish which is initially contains of 25% of dry-mass protein, when it is fermented then its protein level will increase until 30% and it is suitable for catfish which needs protein around 30%-35%.

In the second stage, mixing of fermented products with other additive materials will directly printed with pellet printer machine. The pellet is the output of this IN-MINDED technology.

IN-MINDED in one production can make pellet around 10 kilograms. IN-MINDED existence can reduce costs and efficient time consuming in manufacturing fish feed. Thus UPT PTPBP2KP can improve productivity in manufacturing of fish feed towards Indonesia Mandiri Pakan Ternak (Indonesia is Self-Sufficient in Animal Feed).

Through that innovation, five Brawijaya University students consisted of Hermin (Faculty of Science), Daman Budi Priyanto (Faculty of Science), Shifaaun Najihah (Faculty of Science), Muhamad Ainul Yaqin (Faculty of Engineering), and Darjito S.Si., M.Si as their supervisor were successfully to get funding in an event so-called PKM (Program Kreativitas Mahasiswa/Student's Creativity Program) 2018 organized by Minister of Research Technology and Higher Education.

These Five Brawijaya University students will implement their innovation within 5 months and will apply the technology to UPT PTPBP2KP in order to overcome the problems that confronted.

In addition, it is expected that synergy between students and UPT PTPBP2KP is able to solve problems confronted by catfish farmers, and able to realize the goal of Indonesia is self-sufficient in Animal Feed in 2030 regularly and sustainably. [Daman Budi/Humas UB/trans. Denok]

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