
Development of freshness preservation technology for cultured yellowtail using pulsed power technology

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In Japanese fisheries industry, seafood production by sea aquaculture is very significant not only for securing self-sufficiency food but also for protecting the fish food culture. Production volume in the sea aquaculture industry is stable, as it is not affected by the weather. Production volume by sea aquaculture industry in Japan accounts for more than 20% of the total of Japanese fisheries industry and it plays a very significant role. Also, there is concern about depletion of natural fishery resources in recent year, so the importance of aquaculture will become higher in the future.

Because a fish acts violently at the time of unloading, lactic acid is deposited and, in the sea aquaculture business spot, it causes the reduction of fish meat taste. In addition, the visual value is also reduced by the hurt on fish skin. Therefore, in the study, the pulsed electric field was used to stun fish in water with no violent action. In the experiment, yellowtail was set between parallel plates electrodes filled with seawater and then the pulsed power was applied. The energy level of applied pulsed power was changed by varying the capacitance and the charging voltage. As the results, the pulsed power makes the stunning of the yellowtail. In the presentation, the details would be introduced.