



パルスパワーによるアニサキス殺虫性能の 評価方法の研究 (第1報)

— 殺虫特性と水温上昇特性のパルスパワー入力依存性 —

Using Pulsed Power to Kill Anisakis (1st Report)

— *Dependence of Sterilization and Water Heating on Pulsed-Power Input* —

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The authors have developed pulsed-power technology for sterilizing raw fish with brief bursts of electric energy in low-temperature water to kill parasitic *anisakis* larvae while maintaining a raw fish quality suitable for eating as sashimi. Raising the pulse power improves the sterilization rate but also warms the water, and as the water temperature increases the raw fish quality decreases. The dependency of the sterilization characteristic and the water warming characteristic on pulse-power input were studied by parameter design, using the time from the sterilization process to the determination of whether the *anisakis* larvae had been killed or not as a noise factor in order to evaluate individual differences in the resistance of the larvae to electrocution. Prototype equipment designed on the basis of the experimental results was installed in a factory location, and mackerel fillets are being produced and sold on a trial basis for use in sashimi. To improve the productivity of this mackerel fillet process, it remains to increase the reproducibility of the gain of its S/N ratio by studying ideal conditions so that sterilization and water temperature rise can be explained in terms of pulse-power input and output.

Key words : sashimi, parasites, *anisakis*, mackerel, raw fish, fillet, underwater inactivation, pulsed power, pulsed current, electrical conductivity, L_{12} orthogonal array, parameter design, S/N ratio, sensitivity, ideal function, quality engineering, Taguchi methods

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1. 緒 言

アニサキス¹⁾は多くの魚介類の内臓などに見られる長さ20~30 mm, 幅約1 mmの糸状の動物寄生性線虫である。生の魚介類を刺身などで食べた際に、生きたままヒトの体内に入ったアニサキスは胃壁や腸壁に刺入し激しい腹痛(アニサキス症)を引