SENSORY AND PHYSICOCHEMICAL CHANGES IN RAINBOW TROUT MEAT UNDER DIFFERENT PRESERVATION AND STORAGE CONDITIONS. A NARRATIVE REVIEW

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Abstract

This narrative review summarises how chilling and superchilling, freezing, salting and smoking affect the sensory and physicochemical quality of rainbow trout (Oncorhynchus mykiss) meat, compares the indicators used to define shelf life and identifies methodological limitations and research gaps. Literature was searched between July and September 2026 in seven databases; primary studies were synthesised qualitatively and shelf-life values were not pooled. Shelf life was strongly endpoint-dependent and varied with product form, temperature, packaging, salt level, smoking method and additives, and single indices such as TVB-N or peroxide value were unreliable on their own. Freezing slowed microbial growth but did not prevent lipid and protein oxidation, texture change and pigment fading. Salting and smoking extended storage life but involved sensory trade-offs. Multi-endpoint designs combining sensory, microbiological and physicochemical measures are recommended.

Key words: *rainbow trout, sensory quality, shelf life, freezing, smokin*