

Control of glass transition temperature of food by salt
and the study of optimum storage condition of fisheries products.

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Summary

The aim of this study is to collect fundamental data of the effect of salt, moisture, protein and other substances on glass transition temperature of fisheries products to aid the development of a better storage technology of fisheries products.

The extracts of bigeye tuna (*Thunnus obesus*) was squeezed from red meat by centrifugation. The extracts samples were further fractionated by centrifugal ultra filtration (<100,000 <30,000 <10,000). The glass transition temperatures (T_g) of each sample were about -66°C (whole extracts), -75°C (<100,000 M.W.), -75°C (<30,000 M.W.), -72°C (<10,000 M.W.). The T_g of bigeye tuna was shown to depend on certain substances of which molecular weights are larger than 100,000.

The T_g of raw meat of oceanic bonito (*Katsuwonus pelamis*) was about -68°C. The T_g of heated meat of Oceanic bonito was about -80°C. The effect of heat denaturation on glass transition temperature of oceanic bonito was evident.

The T_g of dried meat of salmon (*Oncorhynchus keta*; moisture 70.5%-63.4%) did not depend on moisture contents. Both T_g and melting point (T_m) of dried meat of salmon (moisture 12.5%) were not found within the temperature range from -140°C to 30°C.

The effect of protein on glass transition temperature could be suggested.