

MEASUREMENT OF FREE AND EXPRESSIBLE DRIPS

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INTRODUCTION

When animal tissues (eg. muscle) are frozen, a certain degree of damage occurs. In muscle tissue, this is reflected in an increased amount of free drips and expressible drips. Thawing procedure affects the drip amount. Free drips is the fluid that exudes from the muscle (or thawed muscle) on standing. Expressible drip is the fluid lost from the meat on application of pressure. No standard method has been established for drips measurements, and the amount of drips measured is a relative value. On reporting drip values, it is therefore important to state the physical parameters involved.

I APPARATUS

2 cm \varnothing cork borer
Petri dishes
Filter paper (Whatman No. 1, \varnothing 7 cm)
Screw press
Stop watch

II PROCEDURE

1. A 2 cm \varnothing cylinder of fish muscle is made using the cork borer. Trim the muscle block of the skin and cut the height to 0.5 cm.
2. Weigh the muscle sample (X g) and place it on 2 pieces of filter paper. Place sample in a petri dish with cover. Keep in refrigerator (4°C) for 2 hr.
3. Take the sample out and weigh (Y g).
4. Place the muscle sample between 2-layer filter paper on top and 3-layer filter paper below. Place the whole in the press.
5. Slowly increase the pressure to 1-2 kg/cm² within 30 sec.
6. Maintain at 1-2 kg/cm² constant pressure for 2 min. then remove the sample, and weigh the pressed sample (Z g).

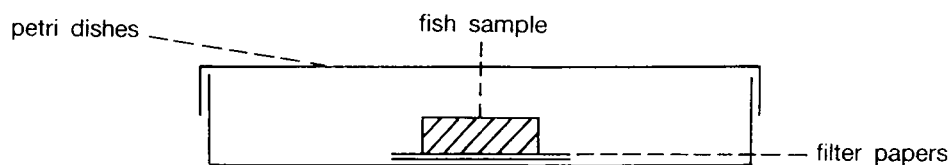
III CALCULATION

$$\text{Free drip, \%} = \frac{(X - Y)}{X} \times 100$$

$$\text{Expressible drip, \%} = \frac{(X - Y)}{X} \times 100$$

IV PRECAUTIONS

- a) The cut sample must be kept frozen until ready for weighing.
- b) Maintain a constant size of sample. Sample size approx. 0.5 cm in thickness and 2.0 cm in diameter.
- c) Take muscle samples from a constant area of the fish.
- d) Weigh the frozen sample quickly to prevent atmospheric moisture from condensing on the sample.



REFERENCE

Shunro KATO (1979) : Theory and Application in Food Freezing, P.398 Korin, Tokyo