The Correlation between Colour and Freshness of Canned Tomato Sardine Meat.

Takeo Kawaguti, Ryūtarō Kobayashi and Tadao Yamada

SYNOPSIS

The correlations between fish meat colour of the canned tomato sardine and their freshness are reported in this paper. With back of each of 3 to 5 sardine from each can, the amount of white and black stimulus, as well as the hues, were measured by Bloch's three colour filters method. Percentage of NH$_3$-N of each sample was also determined as the measure of freshness. From the results, correlation tables are obtained as shown in tables 1 to 3, with the correlation ratios among them as listed in table 4.

第 1 表  色調: NH$_3$-N 含有量の相関表

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<tr>
<th>NH$_3$-N Nmg% 階級</th>
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<th>17-18</th>
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(1) Bloch ; Zs. f. techn. Phys., 4, 1923.
(2) 赤 (25), 錦 (917), 青 (583) のフィルターを用いて測定する明るさの最大となるものをより最小に到
る読みを $a$, $b$, $c$ とするとき

白分 = $c$, 黒分 = $100-a$, 色調 = $a-167\frac{b-c}{a-c}$. 
第2表 白分：NH₃-N 含有量の相関表

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第3表 黒分：NH₃-N 含有量の相関表

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結果 色調、(2) 白分、(3) 黒分と NH₃-N 含有量との相関表を第1第2、第3表に示す。

上表より相関比(1)を計算して次の結果を得た。

第4表 相関比

<table>
<thead>
<tr>
<th>NH₃-N の (色調(Hues)の変化に対する 0.34)</th>
<th>NH₃-N の (自己(White)の変化に対する 0.38)</th>
<th>NH₃-N の (黒分(Black)の変化に対する 0.50)</th>
</tr>
</thead>
</table>

郎も NH₃-N 含有量の変化に対する色調の相関及び黒分の変化に対する NH₃-N 含有
量の相関は共通の変化がいつも 0.5 以上である。相関の相関比も 0.3 以上
でいう挙動の標準的な相関関係があると考えられる。

終わりに岡田光世教授の御教示、大谷武の田内森太郎博士並に日本輸出組織の業者や水産組
合検査委員長谷口直太郎の御援助を深謝する。

(1) 相関比は \( r = \sqrt{\sum (x-y)^2/\sigma x \sigma y} \) に依って求めた。成黒清松；数理統計学概要 昭和七年。