# Characteristics of Uruguayan Mutton Tallow

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**Fourteen samples of Uruguayan mutton tallow available in the local market were analyzed for their composition, melting point and titer. From the results it can be concluded that Uruguayan mutton tallow contains a higher percentage of oleic acid and a lower percentage of palmitic and stearic acids than that of other countries.**

KEY WORDS: **Fatty acid composition, mutton tallow, tallow, tallow properties.**

Mutton and beef tallows of various grades and qualities are raw materials of considerable importance to Uruguayan industry. Uruguay is basically a cattle-producing country and the animals are range-fed for the most part. Locally, tallows are produced from the total fatty tissues of the animal by rendering.

Apart from animal type, tallows originating from different tissues or from different geographical locations may have different fatty acid compositions. The composition depends on many factors, but either differences in nutrition of the animals or differing proportion of the various fatty tissues used are the main causes of variation.

The composition of many animal tallows are superficially very similar to that of beef. Mutton tallow is normally slightly more saturated and therefore harder than beef tallow.

Fourteen samples of Uruguayan mutton tallow available in the local market were analyzed (Table 1). Fatty acid methyl esters were prepared and analyzed by gas chromatography by AOCS method Ce 2-66 and Ce 1-62 (1). A Shimadzu Model GC-6 AMPrF gas chromatograph equipped with 10% SP-2330 columns on 100/120 Supelcoport, 10′ × 1/8″ stainless steel, obtained from Supelco Inc. (Bellefonte, PA), was used. Operating conditions were: carrier gas ($N_2$) flow, 15 mL/min; column oven temperature, 185°C; injector and detector temperature, 230°C. Titers were determined by AOCS method Cc 12-59 and open-tube melting point by AOCS method Cc 3-25.

Some typical fatty acid composition described in the literature (2-4) is also given in Table 1.

From the results summarized in Table 1, it can be concluded that Uruguayan mutton tallow contains a higher percentage of oleic acid and a lower percentage of palmitic and stearic acids than that of other countries. The main difference between the fatty acid composition of beef and mutton tallow from Uruguay occurred in the stearic and oleic contents. That is why the titer of Uruguayan mutton tallow was found to be lower.

## REFERENCES

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TABLE 1

**Selected Fatty Acid Compositions (% wt; ignoring minor acids)**

| | Mutton tallow | | | | Beef tallow | | | |
|---|---|---|---|---|---|---|---|---|
| | Uruguay | | | | Uruguay | | | |
| Fatty acid | mean | range | mean (2) | range (2) | mean (3) | range (3) | mean (4) | range (4) |
| 14:0 | 2.4 | 2.3-2.4 | 4.0 | 3.2-4.4 | 2.7 | 2.0-4.1 | 2.5 | 1.4-6.3 |
| 15:0 | 1.0 | 0.8-1.2 | 0.6 | 0.5-0.7 | 1.1 | – | – | – |
| 16:0 | 22.2 | 20.4-23.4 | 25.9 | 24.8-27.3 | 24.0 | 20.2-27.3 | 27.0 | 20-37 |
| 16:1 | 4.3 | 3.5-4.5 | 1.7 | 1.4-2.1 | 3.0 | 1.4-4.9 | 10.8 | 0.7-8.8 |
| 17:0 | 1.8 | 1.6-2.0 | 1.5 | 1.2-1.8 | 2.0 | 1.0-3.3 | – | – |
| 18:0 | 23.5 | 22.3-30.5 | 32.0 | 30.2-33.9 | 28.2 | 25.2-33.6 | 7.4 | 6-40 |
| 18:1 | 40.0 | 38.4-41.9 | 31.7 | 30.1-32.6 | 34.8 | 31.0-43.1 | 47.5 | 26-50 |
| 18:2 | 2.2 | 1.9-2.4 | – | – | 1.8 | 0.8-4.4 | 1.7 | 0.5-5.0 |
| Titer (C) | 43.8 | 43.0-47.1 | – | – | 45.4 | 43.2-47.8 | – | 40-46 |
| Melting point (C) | 45.2 | 45.0-47.1 | – | – | 46.4 | 45.0-48.0 | – | – |