The purpose of this portion of the study was to demonstrate that the addition of Floraesters K-100 Jojoba to a simple rinse-out conditioner will decrease both wet and dry comb force.

**Abstract**

Chemically-damaged hair is unhealthy hair. Damage to hair, and subsequent repair, were measured as: comb-through resistance (wet and dry), breakage, and consumer perception. These tests showed that hydrolyzed jojoba esters (Floraesters® K-100 Jojoba) can ameliorate damage to hair. Virgin, natural-honde hair tresses were bleached for ninety minutes to controllably damage the hair. Tresses (in triplicate) of the damaged hair were treated with a simple rinse-out conditioner, with or without hydrolyzed jojoba esters. The conditioner was allowed to sit on the hair for ten minutes followed by rinse-out and blow-dry. The hair tresses treated with hydrolyzed jojoba esters showed significant improvement in the above-mentioned industry-accepted instrumental tests. These results were corroborated by a consumer perception panel test. Used at low levels in formulations with an optimized pH (less than 5.0), hydrolyzed jojoba esters deposit on the hair from rinse-out shampoo or conditioner products (as measured by weight) and provide a conditioning effect to damaged hair.

**Purpose:**

Reduced Hair Damage with the use of Hydrolyzed Jojoba Esters in a Hair Conditioner Formula

**Deposition Of Floraesters K-100 Jojoba**

- 6 tresses were stripped using a stripping shampoo
- Excess water was removed from each tress and the hair was dried in a reproducible manner
- Tresses were weighed analytically
- 3 tresses were washed using a simple shampoo (sulfate-free) with 1% Floraesters K-100 Jojoba
- 3 tresses were washed using a simple shampoo without Floraesters K-100 Jojoba
- Excess water was removed from each tress and the hair was dried in a reproducible manner
- Tresses were weighed analytically
- This process was repeated using a simple conditioner instead of a simple shampoo

**Results:**

- **Reduced Comb Force with Floraesters K-100 Jojoba**
  - 6 tresses were stripped using a stripping shampoo
  - Tresses were bleached using a commercially available bleach kit for 90 minutes (damage)
  - The 6 tresses were again stripped using a stripping shampoo
  - Wet comb force was determined
  - Tresses were dried
  - Dry comb force was determined

**Conclusions**

- **1% Floraesters K-100 Jojoba in a rinse-off conditioner:**
  - decreases comb force of damaged hair up to 55%
  - decreases breakage in damaged hair by 82%
  - increases consumer perception of health of damaged hair by 64% and softness by 46%

**Floraesters K-100 Jojoba increases consumer perception of health of damaged hair by 64% and softness by 46%**

**Floraesters K-100 Jojoba remains deposited on the hair after rinse-off.**

**Floraesters K-100 Jojoba decreases wet and dry comb force of damaged hair up to 55%**

**Floraesters K-100 Jojoba decreases breakage in damaged hair by 82%**

**More Favorable Consumer Perception with Floraesters K-100 Jojoba**

- Tresses originally treated during the breakage test were analyzed by consumers for “healthiness” and “softness.”

**Results:**

- **Mean Percent Changes**
  - **p<0.10 between test products**

**Floraesters K-100 Jojoba decreases comb force of damaged hair up to 55%.

**Floraesters K-100 Jojoba decreases breakage in damaged hair by 82%.

**Floraesters K-100 Jojoba increases consumer perception of health of damaged hair by 64% and softness by 46%**
Reduced Hair Damage with the use of Hydrolyzed Jojoba Esters in a Hair Conditioner Formula

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