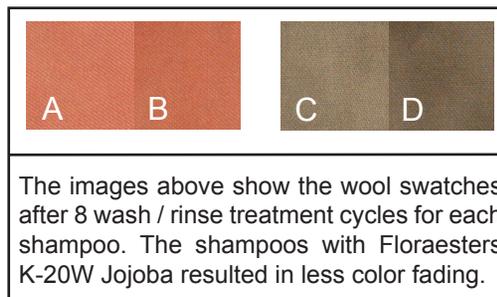
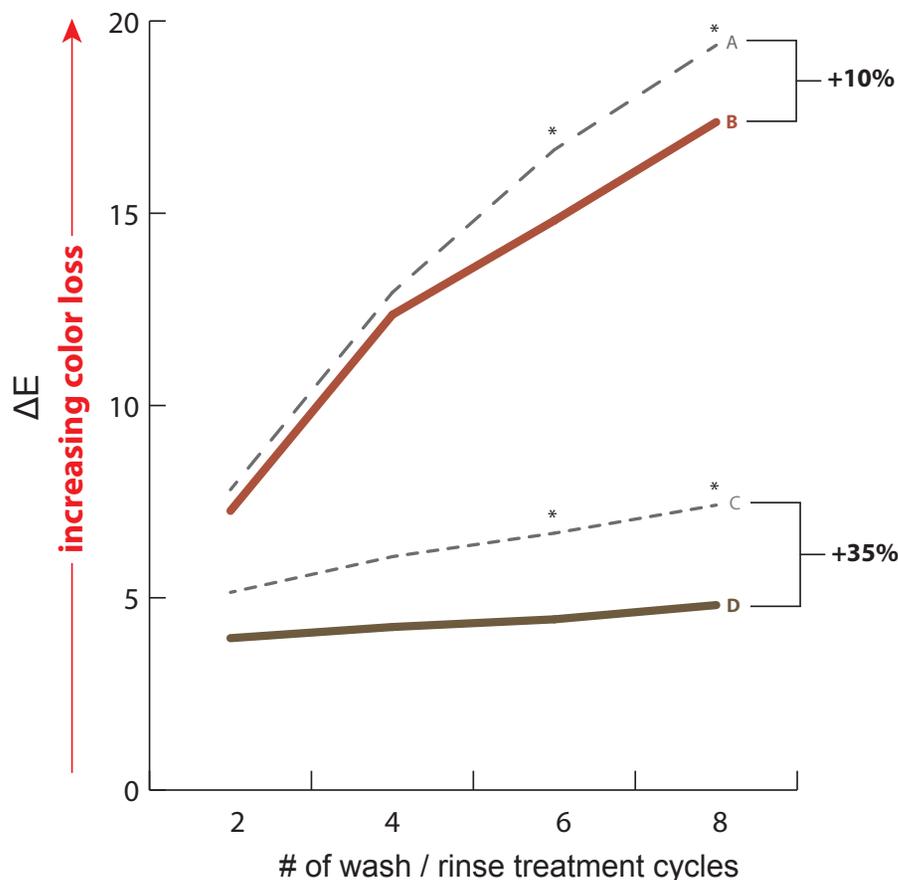




## Floraesters K-20W Jojoba in a Shampoo Improves Color Retention of Hair Dyes

### Color Retention



### Objective:

To evaluate Floraesters K-20W Jojoba for its potential to improve hair dye color retention.

### Method:

Wool swatches were dyed with commercial red or brown permanent

hair dyes. Swatches underwent 8 wash / rinse treatment cycles using shampoos with or without 2.5% Floraesters K-20W Jojoba. Change in color ( $\Delta E$ ) from pre-wash was measured after every 2 washes.

### Results:

Wool swatches dyed with commercial red or brown permanent **hair dyes retained up to 35% more color** (test article D) when a shampoo containing 2.5% Floraesters K-20W Jojoba was compared to a shampoo without Floraesters K-20W Jojoba.

Vehicle (%wt/wt): Water (q.s.), Disodium Laureth Sulfosuccinate (12.0%), Decyl Glucoside (8.0%), Sodium Lauroyl Sarcosinate (8.0%), Cocamidopropyl Betaine (8.0%), Acrylates Crosspolymer-4 (3.0%), Methyl Glucose Caprate / Caprylate / Oleate (and) Propanediol (2.0%), Sodium Cocoyl Isethionate (2.0%), Glycol Distearate (1.5%), Phenoxyethanol (and) Caprylyl Glycol (and) Ethylhexylglycerin (and) Hexylene Glycol (0.8%), Guar Hydroxypropyltrimonium Chloride (0.7%), Fragrance (0.7%), Aminomethyl Propanol (0.4%), and Disodium EDTA (0.1%).

- A - vehicle shampoo (red)
- B - vehicle shampoo + 2.5% K-20W (red)
- - - C - vehicle shampoo (brown)
- D - vehicle shampoo + 2.5% K-20W (brown)

**Floratech Ingredient:  
Floraesters K-20W Jojoba**

The clinical study of Floratech® test formulation (CTL\_14-057) was conducted on 2" x 2" worsted gabardine wool swatches (n=3 per test article) obtained from Test Fabrics, Inc (West Pittston, PA). The hair dyes used were Vidal Sassoon®, Pro Series London Lux (6RR Runway Red) (Proctor & Gamble Company, Cincinnati, OH) and Garnier Fructis®, HerbaShine® Color Crème (500 Medium Brown) (L'Oréal, Paris, France). Wool swatches were dyed according to package instructions. The study was blinded, and carried out under controlled temperature and humidity conditions. A wash / rinse treatment cycles which consisted of immersing the wool swatch in 200ml of the test article solution (2% volume/volume) and stirring (for 1 minute using a magnetic stir bar), followed by immersing the wool swatch in 200ml of water and stirring. Color intensity for each swatch was measured using a Colorimeter CL 400 (Courage + Khazaka, Köln, Germany) at baseline prior to treatment, and after each set of two wash / rinse treatment cycles. Color loss was calculated from  $L^*a^*b^*$  values using the following equation:  $\Delta E = \sqrt{[(L_2^* - L_1^*)^2 + (a_2^* - a_1^*)^2 + (b_2^* - b_1^*)^2]}$ . (Clinical Study 14-057A and 14-057D reports available upon request.)

\* Indicates statistical significance ( $p < 0.05$ ) between test articles.