BIOCHEMICA®
MANGO BUTTER ULTRA

Natural, nourishing moisturizer

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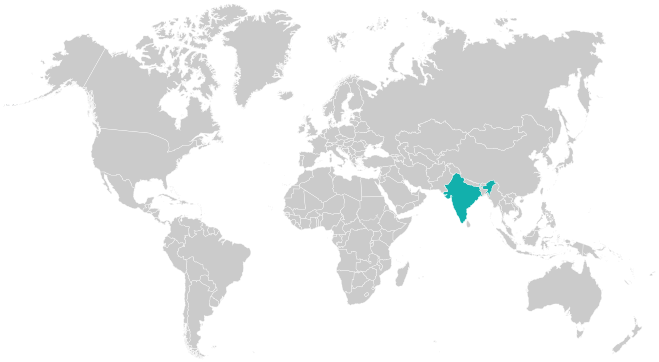
The mango tree (Mangifera indica) grows in the sub-tropics of India and other parts of the globe. From its seed a firm "butter" is rendered which is suitable for soaps, cosmetics and toiletries. Mango butter exhibits excellent moisturizing properties and good lubricity. It melts readily at skin temperature, making it ideal for sticks, lotions and creams. It also counters the drying effects of bar soaps and cleansers. Biochemica® Mango Butter Ultra may be used for cutaneous dryness to assist in moisturization after exposure to sun and other harsh elements.

INCI NAME
Mangifera Indica (Mango) Seed Butter

MOISTURIZING TROPICAL MANGO BUTTER
Biochemica® Mango Butter Ultra has been extracted from the fruit kernels of the mango tree that prospers in the sub-tropics of India and other warmer climates. This butter delivers superior moisturization, increases skin elasticity, and reduces transepidermal water loss after eight hours. Biochemica® Mango Butter Ultra has aesthetically pleasing properties in skin smoothness, hydration and appearance, making it a great addition to numerous skin care applications.



Properties	
Free Fatty Acids %	1.0 Maximum
Appearance	Pale yellow solid fat
Iodine Value (gl2/100g)	39.0 - 50.0
Melting Range (°C)	34 - 42
Oder	Slightly fatty
Peroxide Value (mEq/kg)	10.00 Maximum
Insoluble In	Water
Soluble In	Cosmetic esters (hot), Vegetable oil (hot)
Packaging	Carton - 25kgs, Drum - 185, 190kgs, 25kgs

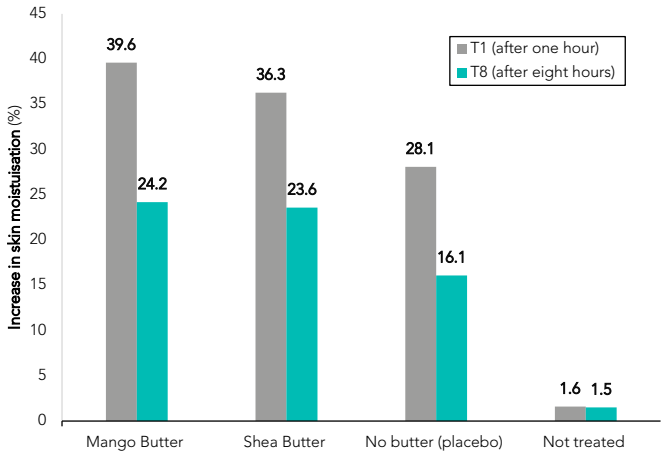
BENEFITS
- Natural, plant-derived, vegan product
- Emollient
- Moisturizing agent
- Super-fatting agent
- Biodegradable
- Increases skin elasticity
- Reduces transepidermal water loss
- Increases skin smoothness
- Globally compliant

APPLICATIONS
Body care
Hand care
Foot care
Facial skin care
After sun skin care
Bar soaps

CLINICAL DATA: MOISTURIZATION, TEWL AND SKIN ELASTICITY

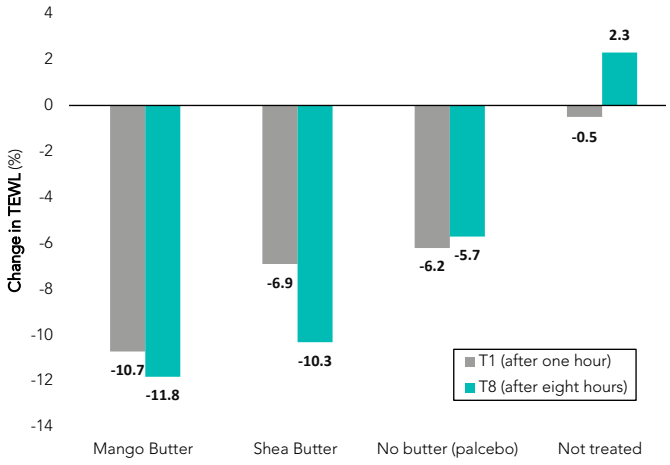
Test Formulation	
Water	QS to 100%
Glycerin	2.0%
Xanthan Gum	0.1%
Sodium Ethylenediamine Disuccinate	0.3%
Cetearyl Alcohol	4.0%
Ceteareth-20	1.0%
Test Butter	5.0%
Triticum Vulgare (Wheat) Germ Oil	1.0%
Dicaprylyl Carbonate	3.0%
Sodium Polyacrylate	0.3%
Cyclopentasiloxane, Cyclohexasiloxane	3.0%
Preservative	QS

Improvement in Skin Moisturization



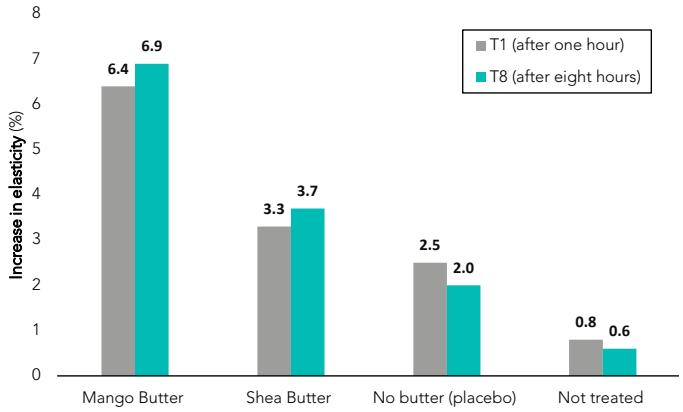
The measurement of the skin moisturisation is based on the internationally recognised Corneometer method (Courage+Khazaka electronic GmbH). The untreated skin moisturization level remained essentially unchanged over the course of the study, attesting to uniform environmental conditions for the duration of the test The formulation base without added butters was itself moisturizing at both one (t1) and eight (t8) hours after application. This is not unexpected given the presence of a light emollient (dicaprylyl carbonate) and a small amount of triglyceride oil (Triticum Vulgare (Wheat) Germ Oil). Practically speaking, this requires a higher level of performance by the butters to achieve moisturization above that provided by the base. This was indeed the case for all the butters at both t1 and t8, attesting to their superior moisturization capabilities. While the extent of moisturization decreased between t1 and t8 for each of the test products, moisturization remained greater than that prior to treatment (t0).

Reduction in Transepidermal Water Loss (TEWL)



Transepidermal water loss is measured by means of the internationally recognised Tewameter method, using a Tewameter TM 300 (Courage+Khazaka electronic GmbH). The rate of transepidermal water loss (TEWL) for untreated skin did not change significantly over the course of the study. The formulation base without added butters produced a significant decrease in TEWL at t1 but not at t8. This is not entirely unexpected given the presence of a light emollient and small amount of triglyceride oil as previously described. Practically speaking, this requires a higher level of performance by the butters, particularly at t1, to achieve TEWL reductions greater than those provided by the base. Mango butter contributed directionally to TEWL reduction. By t8 the mango butter contributed to greater TEWL reductions than the base, attesting to their long term TEWL reduction capabilities.

Improvement in Skin Elasticity



Skin elasticity is a measure of the ability of the skin to return to its original rest state following a stressful event and is measured using the Cutometer MPA 580 (Courage+Khazaka electronic GmbH). The elasticity of untreated skin did not change significantly over the course of the study, again suggesting uniform environmental conditions for the duration of the study. The formulation base without added butters produced a significant increase in skin elasticity at t1 which was sustained through t8. Practically speaking, this requires a higher level of performance by the butters to achieve elasticity increases greater than those provided by the base. At t1, mango butter provided statistically greater increases in skin elasticity than the base. By t8, mango butters provided increases in skin elasticity over that of the base. Numerically, mango butter yielded the greatest increase in skin elasticity, so much so that its performance was better than shea butter's at both t1 and t8. This attests to mango butter's superior performance in increasing skin elasticity.

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