

Cashew apple: botanical for skin hydration and vitality

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Cashew nuts are globally valued as a premium, nutrient-dense food, yet the vibrant cashew apple attached to each nut remains largely neglected. The cashew apple accounts for nearly 90% of the entire cashew fruit but is often discarded due to its short shelf life and low commercial value.¹ As a result, tens of millions of tons of cashew apples are wasted each year – despite their exceptionally rich content of vitamin C, polyphenols, fruit acids and natural sugars with clear potential for cosmetic use. Turning the cashew apple into a cosmetic ingredient aligns well with modern trends toward upcycling and sustainable use of resources.

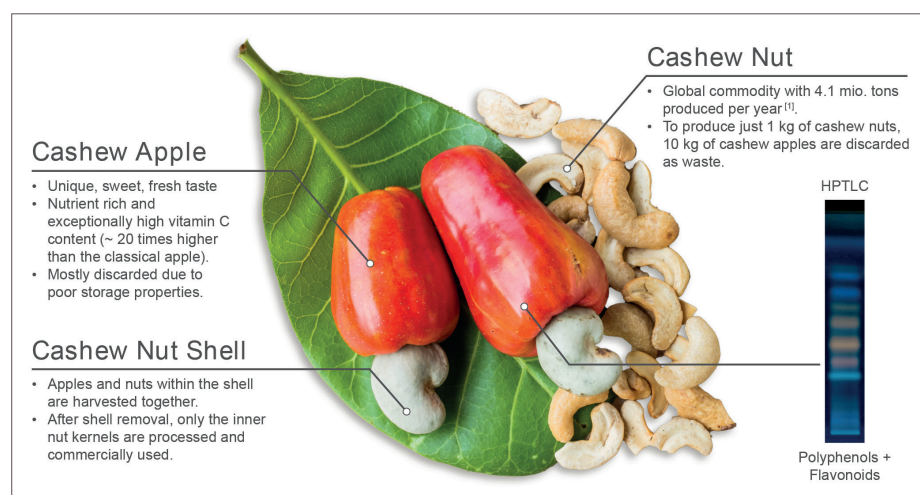
Cashew apples (*Anacardium occidentale*) share many phytonutrients with the classical apple (*Malus domestica*),^{2,3} including vitamin C, polyphenols, flavonoids, carbohydrates and gentle fruit-derived acids. Remarkably, cashew apples contain about twenty times more vitamin C than traditional apples and considerably higher tannin levels – attributes associated with antioxidant protection, smoothing, refinement and hydration. While cashew apples find some use in nutrition (e.g. beverages), it has been almost absent from cosmetic development.

A 2025 Mintel search of European product launches revealed extensive use of classical

apple (*Malus domestica*) extracts, but virtually no applications featuring cashew apple (*Anacardium occidentale*). To unlock its potential, a stabilized, cosmetic-grade extract was created using a glycerinic-aqueous process tailored to preserve the fruit's bioactive compounds. HPTLC analysis confirms that the extract exhibits a dense fingerprint rich in polyphenols and flavonoids, consistent with the fruit's phytochemical profile.

Cashew apples – upcycled, organic certified and fairly-traded

Cashew apples used for Cashew Apple Extract come from a fair-trade organization in Burkina Faso. Since 2006, this supplier has worked with more than 5'500 farming families who grow cashew trees organically and without irrigation on about 5.4 hectares of land per family. The fruits are harvested and processed manually on-site



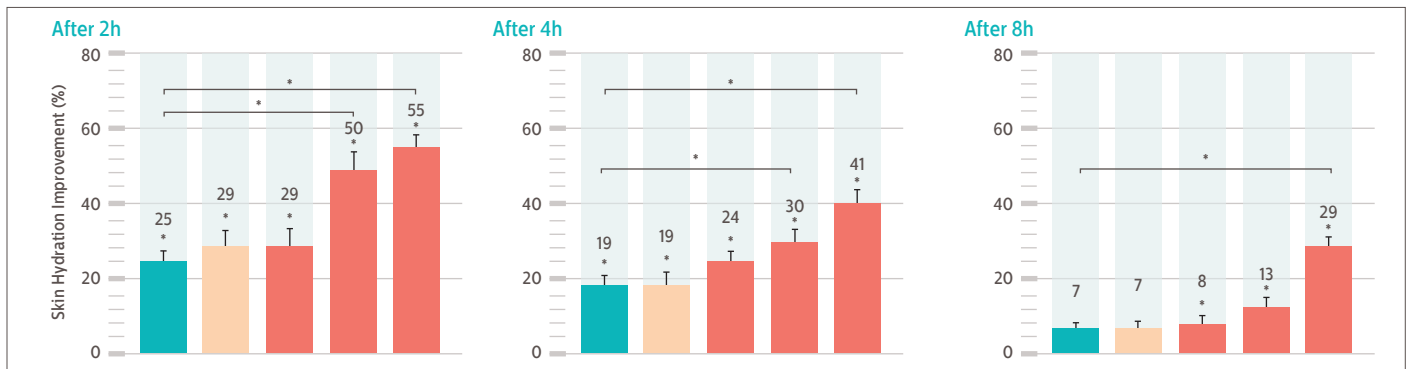


Figure 1: Cashew Apple Extract provides better skin hydration than placebo and hyaluronic acid. The graph shows how much hydration increased (in %) compared with baseline, measured 2, 4 and 8 hours after one application. N = 20; Mean + SEM. ANOVA-test vs. baseline and vs. placebo were statistically significant; * = $p < 0.05$

- washed, cut and sun-dried - to preserve their phytochemical profile.

Turning these previously discarded apples into a valuable resource creates direct socio-economic benefits. Processing steps such as washing, slicing and drying generate additional income and employment, especially for women in rural communities. This sourcing model meets the growing demand for transparent, ethical and socially responsible beauty ingredients.

Cashew apple – sustainable and attractive to cosmetic consumers

Upcycling - turning by-products or waste materials into useful ingredients - has become an important idea in conscious beauty. We ran a consumer survey (n = 210) to assess how people feel about upcycled ingredients in cosmetics. The results showed strong approval: most participants saw upcycling as a responsible use of resources, believed that upcycled ingredients can work as well as regular ones, and said they would be willing to buy beauty products made with upcycled materials.

In the second part of the survey, we asked participants about cashew apples. While 99.5% knew cashew nuts, only 25% had ever heard of the cashew apple. After being introduced to the fruit, consumers reacted positively. They saw cashew apple as an attractive and promising ingredient for skin hydration and cosmetics in general and even rated it more relevant than the classical apple.

Cashew apple extract provides superior skin hydration

This study tested the skin-hydrating effect of Cashew Apple Extract after a single application. Its performance was compared with placebo and a cream containing hyaluronic acid (HA), a common benchmark for moisture retention.

In a double-blind, placebo-controlled study, 20 women (19 - 64 years of age) applied five test creams to different areas on their inner forearms. Three creams contained Cashew Apple Extract at 1%, 3% or 5%. One cream contained 0.2% high-molecular-weight hyaluronic acid (positive control), and one was a placebo without active ingredients. Skin hydration was measured with a Corneometer® at baseline and again after 2, 4 and 8 hours.

As a result, all creams containing Cashew Apple Extract led to a clear increase in skin hydration. The extract performed better than both the placebo and the hyaluronic acid (HA) benchmark at all time points. After 2 hours, the placebo and HA increased hydration by 25% and 29%, while Cashew Apple Extract showed a dose-dependent effect with increases of 29%, 50% and 55% at 1%, 3% and 5% (Figure 1). At 4 hours, hydration from the placebo and HA dropped to around 19%, whereas Cashew Apple Extract maintained higher values of 24%, 30% and 41%. After 8 hours, the effects of the placebo and HA were minimal, but Cashew Apple Extract continued to provide superior moisturization across all concentrations.

Overall, Cashew Apple Extract delivers both

fast and long-lasting hydration after a single application. Its stronger performance compared with placebo and hyaluronic acid highlights its excellent water-binding capacity and its ability to support the skin's moisture barrier. Cashew Apple Extract offers immediate and superior skin hydration, outperforming hyaluronic acid.

Cashew apple extract improves skin firmness and appearance

This study examined how Cashew Apple Extract influences skin smoothness, firmness and pore visibility. The goal was to see whether the extract could create a firmer, smoother and more refined skin surface. In a double-blind study, 26 women (30-65 years of age) applied a cream with 2% Cashew Apple Extract to one side of the face and a placebo to the other side twice daily for 56 days. Skin firmness and elasticity were measured with a Cutometer®, and a dermatologist assessed texture, smoothness, pore size, visible pores and overall complexion.

The results showed clear improvements on the side treated with Cashew Apple Extract. Firmness and elasticity increased (Figure 2), and the dermatologist noted better skin texture, smoother surface and a more even complexion. Pore size and the number of visible pores were also reduced (Figure 3). These benefits reflect the natural compounds in cashew apple which support collagen, smooth the skin and tighten the surface.⁴

In conclusion, Cashew Apple Extract revitalizes facial skin, making it smoother, firmer

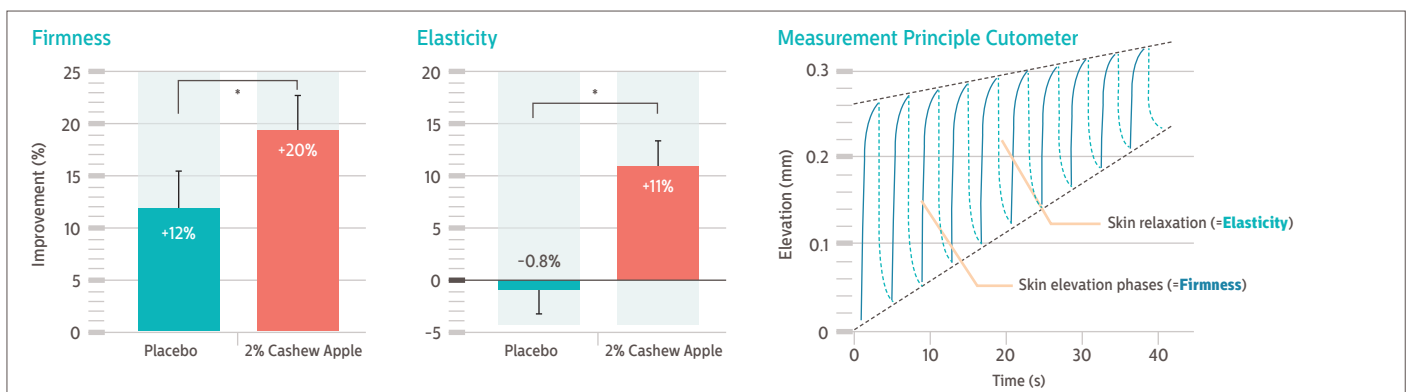


Figure 2: Cashew Apple Extract improves firmness and elasticity. Firmness reflects the force required to lift the skin by 0.3 mm; elasticity reflects how quickly the skin returns to its original position. N = 26; mean + SEM; Wilcoxon test vs. placebo; * = $p < 0.05$

and more even in appearance, with fewer visible pores.

Cashew apple – turning an overlooked fruit into a sustainable beauty innovation

The results show that the cashew apple – once seen only as a leftover from nut production – can become a high-performing cosmetic ingredient with strong sustainability benefits. Through a fairly-trade, organic and fully traceable supply chain, Cashew Apple Extract reflects the principles of upcycling and ethical sourcing that many consumers and regulators now expect.

From a concept perspective, Cashew Apple Extract offers a rare combination of familiarity and novelty. Consumers already associate both cashew nuts and apples with health and quality – this is reflected in our survey's results where consumers perceive cashew apples as rich in active ingredients and highly suitable for skin-hydrating cosmetics. Introducing the cashew apple as a 'hidden' fruit behind the nut allows brands to build a story that is simultaneously surprising and intuitive.

Overall, this makes Cashew Apple Extract a powerful candidate for product concepts such as hydrating and revitalizing serums or creams highlighting pore-refining, complexion-smoothing face care, eco-ethical and fair-trade-inspired ranges, or modern 'apple' concepts that move beyond the classical apple towards a more exotic and more attractive fruit.

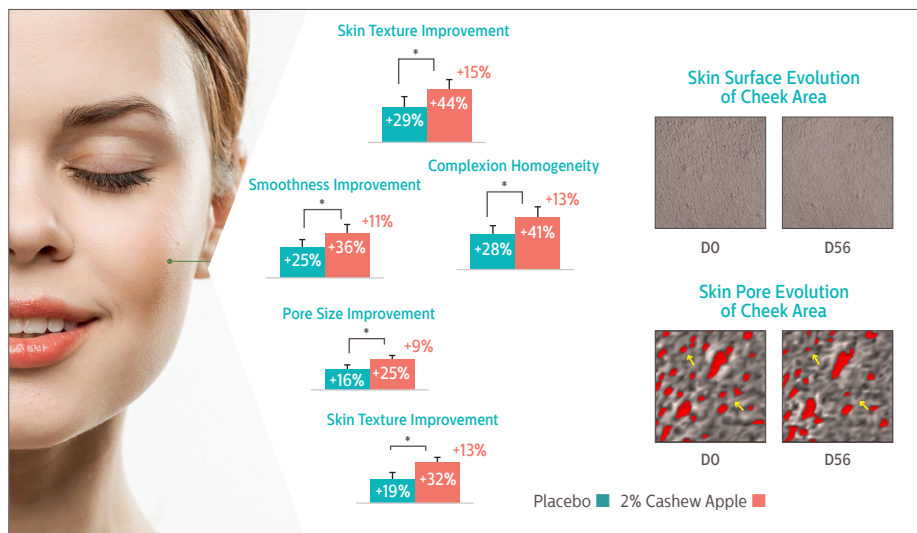


Figure 3: Cashew Apple Extract enhances skin appearance. Dermatologist evaluations showed improvements in texture, smoothness, homogeneity and pore visibility after 56 days. Representative cheek images illustrate smoother skin and fewer visible pores. N = 26; Mean + SEM; Wilcoxon vs. placebo; * = $p < 0.05$

References

1. Van Walraven N, Stark AH. From food waste to functional component: cashew apple pomace. *Crit Rev Food Sci Nutr*. 2023; 64 (20), 7101–7117
2. Salehi B et al. Anacardium plants – Chemical, nutritional composition and biotechnological applications. *Biomolecules*. 2019; 9 (465), 1–34
3. Dakuyo R et al. Comparison of proximate and

phytonutrient compositions of cashew nuts and apples from different geographical areas of Burkina Faso. *Biomed Res Int*. 2022; 1, 2314–6133

4. Tomas M, Günel-Köroğlu D, Kamiloglu S et al. The state of the art in anti-aging: plant-based phytochemicals for skin care. *Immun Ageing* 2025; 22, 5

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