FROM DESQUAMATION TO SKIN QUALITY *IN VIVO* STUDIES OF 1,5% CHENOPODIUM QUINOA CO-PRODUCT

BREDOUX Catherine[1] • FRAISSE Caroline[1] • AZOUAOUI Anissa[2] • MARION Catherine[1] • KLJUIC Ana[1] • TERRISSE Isabelle[1] • LEREBOUR Géraldine[1] • AGUILAR Luc[2].

[1] *L'Oreal Research & Innovation, Chevilly-Larue, France*
[2] *L'Oreal Research & Innovation, Aulnay sous bois, France*

INTRODUCTION

The Andean food crop quinoa (Chenopodium Quinoa Willd.) is known to be rich in bioactive compounds. The outer husk of the seed, which is removed before consumption, is particularly rich in saponins. This Chenopodium Quinoa co-product (CQC) has shown in vitro efficacy on human skin stratum corneum cohesion without modifying intercellular lipid structures. Clinical studies were performed to evaluate the effect of a formulation of CQC on desquamation & skin quality (pores, microrelief, radiance & pigmentary homogeneity).

METHODS

1 Proof of Concept Desquamating clinical study (Study 1):
Topical 1.5% CQC was tested versus vehicle in a double-blind, randomized comparative clinical study on 35 women (21 to 40 years-old). The products were applied every day on arms and forearms for 1 month.

2 Real conditions Skin Quality clinical study (Study 2):
1.5% CQC in a polymers-stabilized oil in water emulsion was evaluated in a double-blind randomized study on 49 Caucasian women (35 to 50 years-old). All women had a coarse skin with a dull skin tone, inhomogeneous tone, very visible pores and rough skin. The product was applied twice a day on the whole face for 3 months.

3 Efficacy assessment

Study 1: The skin discoloration kinetics was assessed every day during the first week and every two days between D8 and D29, by clinical scoring of the skin color after dihydroxyacetone application and L* parameter measurement obtained by chromameter. The skin barrier function was assessed by measurement of the trans-epidermal water loss (TEWL), and skin hydration by corneometry

Study 2: Skin texture, dull complexion, pigmentary homogeneity and pore visibility (clinical evaluation), skin light re-emission modalities (images analysis provided by the Goniolux® device), skin micro-relief (Silfo™ imprints analysed by Quantiline™ software) were performed at baseline (T0), immediately after the first application (Tim), 1 (T1M), 2 (T2M) & 3 (T3M) months.

RESULTS

1 *1.5% CQC SHOWS SIGNIFICANTLY BETTER EXFOLIATING EFFECT THAN VEHICLE AT D15 AND D19 (CLINICAL SCORING) AND AT D12 AND D19 (L* PARAMETER MEASUREMENT)*

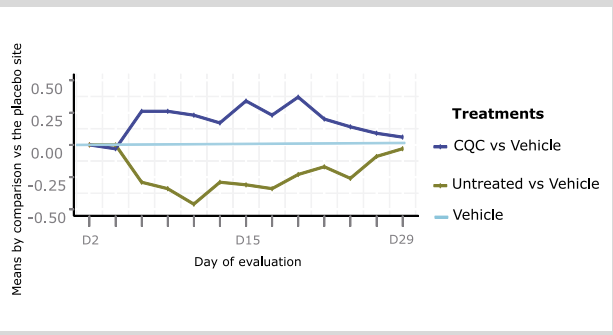

Figure n°1: Skin color – Clinical scoring

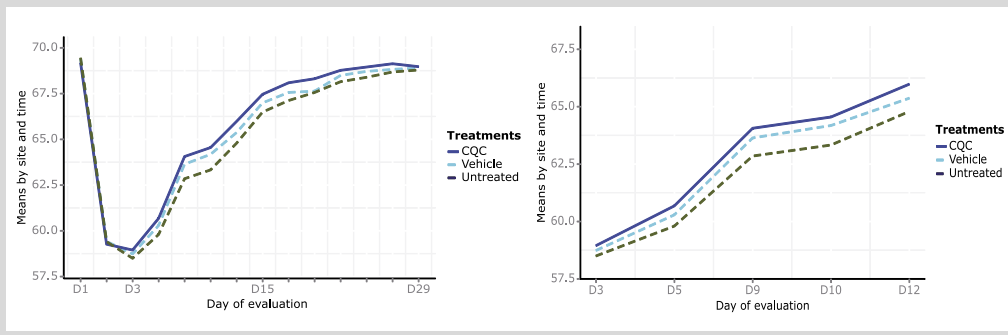

Figure n°2: Skin color – L* parameter

2 *1.5% CQC FLA MAINTAINS THE INTEGRITY OF SKIN BARRIER AND DOES NOT DRY THE SKIN*

No difference between CQC and the vehicule for TEWL and corneometry measurements

3 *SIGNIFICANT IMPROVEMENT OF PORES, PIGMENTARY HOMOGENEITY, COMPLEXION RADIANCE, AND SKIN ROUGHNESS SCORES AT ALL TIMES VS T0*

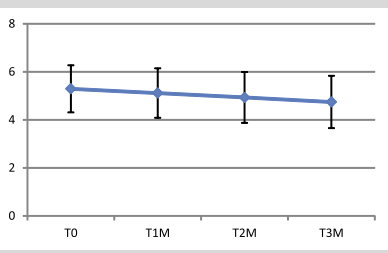

Figure n°3: Pore visibility scoring

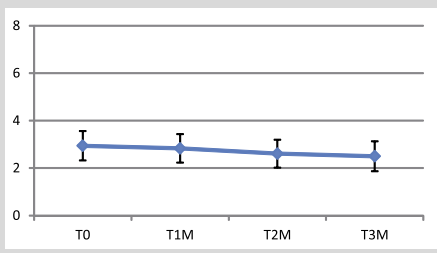

Figure n°4: Pigmentary homogeneity scoring

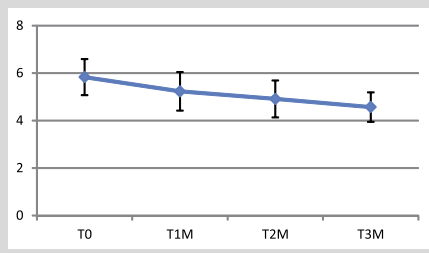

Figure n°5 : Complexion radiancy scoring

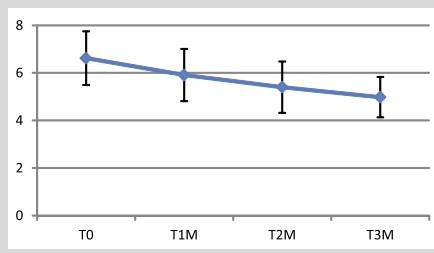

Figure n°6 : Roughness scoring

4 *SIGNIFICANT IMPROVEMENT OF THE SKIN MICRORELIEF AND SMOOTHING AFTER 3 MONTHS VS T0*

Statistically significant decrease of the cutaneous microrelief (measured roughness parameters) and asymmetry of the diffusion revealing a smoother skin (Goniolux™ acquisitions) were also evidenced after 3 months.

CONCLUSION

1.5% CQC has shown a significant exfoliating effect vs vehicle with a good tolerance, without drying the skin, by maintaining skin barrier integrity. Furthermore, an optimized formula of 1.5% CQC demonstrated an effect on skin quality with improvement of skin texture, pore visibility, complexion radiance and pigmentary homogeneity. CQC could be appropriate to complete peeling procedures used by dermatologists and could reinforce long term benefits.

The authors declare no conflict of interest