

THE EPIDERMICAL ACTION OF ALOE VERA L. JUICE

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The travellers passing through the Rio Grande Valley, on the Mexico border, in past times, could see housewives using the fresh leaves of a local plant, Aloe vera L., applying them bruised and pulp-reduced on the face, like a rudimentary phytocosmetic mask, to obtain a soft and velvet skin.

The dermocosmetic suggestions of San Ygnacio and Zapata women, who had understood on instinct that in Aloe's ability of blooming and reproducing so turgidly in very arid and hostile surroundings there was a vitality they could turn to their own advantage, have not been lost and in this last decennium there has been a re-discovery and a wider and wider diffusion in the use of Aloe juice cosmetics in the South of U.S.A. and particularly in Texas and Arizona.

In Indonesia and in Java the primitive fought conjunctivites, baldness and venereal diseases too. The first missionaries who contacted the Seminol tribes discovered them widely used Aloe juice to heal wounds, bites and burns.

Watt and Breyer (The Medic. Pl. South Africa, 1932) report on numerous uses the South-African make of Aloe juice to treat itch, various skin sores and as a skin emollient.

One of us (Rovesti) had to attend to Ethiopia Aloe juice for officinal drug extraction. In Eritrea, Somalia and in all of Abyssinia it has frequently been observed native women applying bruised and pulp-reduced leaves for facial masks.

Sometimes various meals (durra, wheat, flax-seed) were mixed with leaf juices squeezed and cloth-leached or directly with fresh leaves finely triturated. These phytocosmetic treatments were made for curative purpose of skin diseases, but mostly for eudermic purpose.

Aloe healing and analgesic properties have been proved by a series of clinical-pharmacological experiences much more valid and reliable than the primitive's oral tradition and dermocosmetic contributions.

In 1935 Collins reported more than appreciable results on Roengten burns treatments with Aloe vera leaves, while previously, in 1927, Crewe asserted, on conclusion of accurate clinical experiments, Aloe fresh leaves relieve pain, have an antiseptic action and stimulate a rapid reformation of epidermical tissues.

Filatov in 1945 successfully used Aloe extract giving it topically for the therapy of various skin diseases and particularly of leishmaniosis.

In 1959 Pendergrass wrote: "We have used the juice from the Aloe vera leaf in the treatment of radiation reactions with excellent results. Indeed, it is our feeling that the Aloe vera leaf is probably more effective than any of the other preparations now available for the purpose. We have had enough clinical experience to satisfy us as to its value".

From these brief bibliographical notes (for a more complete bibliography we refer to the work "Piante medicinali - Chimica - Farmacologia - Terapia" by R. Benigni, C. Capra and P. E. Cattorini, vol. I, 43-50, Edt. by Inverni & Della Beffa, Milano 1962) one can notice however that there are no literature experiences showing the possibility of Aloe's cosmetological employment.

On the other hand, if one considers Aloe living in desert and xerophilous lands, it is spontaneous to think that plant, continuously under biologic fadings and environment stresses has the ability of producing phytostimulines as last biochemical expressions of survival fight.

Under the picture of this hypothesis we do mention Cranits' report presented in 1969, on the occasion of Vienna XXIII International Congress of Aesthetics and Cosmetology.

This A. reported, as Filatov had already found, Aloe juice has remarkable healing properties vulnerary and biostimulating, certainly for the presence of phytostimulines, well-known for their action biocatalyzing and stimulating the skin cellular metabolism.

This A. reported these properties are present not in juices of officinal drug (obtained under juice

concentration by heat), but in fresh juices and leaves, i.e. not treated with physic devices to concentration or preservation.

Owing to the lack of careful controls on skin action of aloe juice and not finding cosmetological tests on this connection, it was very interesting to us testing its real skin action and reporting it.

Experimental

a) Juice composition

Aloe vera L. juice coming from Sicily and cultivated also in North Italy has been obtained through pressing by Buchner' set under 4 atmospheres with a 55 per cent yeild from single leaves in T.B. blooming.

The obtained juice was turbid, yellow-greenish coloured and bitter tasting. It had 90 per cent water and 10 per cent dry extract, determined in a steamer to a constant weight.

On dry extract aloin, determined according to Paris', resulted 16 per cent.

b) Cosmetological

Above all, through bearings tests on excipients with different quantities of juice and given to beauty-house to try, we have determined the quantity functionally necessary of Aloe juice to have good cosmetical results with a semifluid cream.

This quantity resulted to be about 20% in natural juice well filtered and preserved according to our tests.

We prepared a semifluid cream based on glyceryl monostearate used as a placebo too and added, for experimental cream, with 20% of aloe juice instead of the same quantity of water.

The skin action has been tested by facial emipart method and making treatments, 5 for every kind of skin inaesthetic examined, on alternate days with a period of 10 minutes every aesthetic massage.

Under examination aesthetic, lenticular (20 magnifications) and under Wood's light we obtained:

Dry skins - They result more vivid and smoother, with a smaller quantity of superficial scurf.

Greasy skins - They result less oily and shiny, with less dilated pores.

Senescent skins They result more omogenous and smoother, as regards the before present wrinkledness.

On the whole the eudermic improvement is good and evident, specially in comparision with the placebic emipart.

c) Sebographical

We have examined the behaviour of the above mentioned semifluid cream with 20% aloe juice on orthodermic respect, by R oth' classical method, which puts the orthodermic rule between 40 and 150 HS.

For dry skins, from an initial average of 15 HS on 10 subjects, an average of 42 HS has been reached after 30 altern days treatments.

For senescent skins, from an initial average of 55 HS for 10 treated subjects, we had averaged 80 HS after a month' treatment on alternate days. The initial values were nearly unchanged for the placebic facial emipart.

d) **Dermographical**

We did examine also if aloe's juice could have a certain moisturizing action and so we experimented on 10 female subjects with an exclusively dry skin.

The used set was the dermatometer which gave us the following values:

Initial average Rov on 10 treated subjects : 17

End averaged Rov after a month's treatment on alternate days: 31

A progressive but significant improvement of skin hydration is obtained.

We have nothing in the emipart treated with placebo, in which the initial average of 17 Rov gets up to 21 Rov only in the end.

Conclusion

From the preceding we can get the following conclusions:

- 1) Aloe juice, in a 20% average proportion for tested creams, has on skin an evident eudermic action, improving the morphologic and aesthetic characters of skins dry, greasy and senescent.
- 2) This skin action has gone in a sense eudermic restorative, as the sebographical controls carried out prove.
- 3) Aloe juice carries on an action slightly moisturizing too, as the experiences carried out on dry skins prove, with dermometric controls of conductivity electric superficial epidermic.
- 4) Therefore we can attribute a good action dermatologic and cosmetologic to aloe's juice, so setting this juice among the phytocosmetic protectives, modern cosmetology has at its disposal.

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