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Aloe Vera – the renaissance of a traditional natural drug as a dermatopharmaceutical

Efficiency and Tolerance of Aloe vera Gel preparations in experimentally induced skin injuries

Zusammenfassung

Aloe vera (*Aloe barbadensis* Mill.) wurde lange Zeit in Europa vor allem als Abführdroge genutzt (Cap-Aloe). In jüngerer Zeit ist das muköse Hydrenchym des Aloeblattes als Bestandteil vieler regenerierender und hautberuhigender Dermatika zu finden. Eine Pilotstudie an 12 Probanden zu Wirksamkeit und Verträglichkeit von Aloe vera Gel-Zubereitungen konnte wundheilungsfördernde Eigenschaften bestätigen. An experimentell ausgelösten oberflächlichen Hautläsionen und UV-Erythemen wurde der Behandlungserfolg (verum versus placebo) anhand visuell klinischer Befunde sowie der Messung des Hautkolorits bewertet. Aloe vera Gel kann als sinnvolle natürliche Alternative bei Sonnenbrand und leichten Hautverletzungen angesehen werden.

*Dieser Artikel ist auch in Deutsch erhältlich. Bestellkarte auf Seite 552.

Summary

Aloe vera (*Aloe barbadensis* Mill.) was in Europe frequently used as a laxative in the past. Today, a lot of soothing and softening skin care products contain the mucilaginous hydrenchyma of the aloe vera leaf – aloe vera gel. A pilot study performed with 12 volunteers to examine efficiency and tolerance of Aloe vera gel formulations could generally confirm some wound healing properties. The efficiency of treatment (verum versus placebo) in experimentally induced superficial skin lesions and UV-erythemas with aloe vera gel was evaluated by description of the clinical status and colorimetric measurement of

the skin color. The results indicate that aloe vera gel could be used as a natural alternative in the medication of mild to moderate skin injuries and burns.

Introduction

Aloe barbadensis Mill., rather known as aloe vera (the Linne' nomenclature), is widely used as natural drug in nearly all ethnic groups and cultures and can be found as an ingredient of pharmaceuticals, cosmetic products and dietary supplements (Fig. 1).

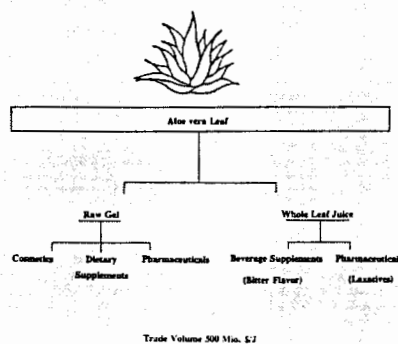


Fig. 1 Product scale of the aloe vera leaf contents

While wild aloe cultivations are originated in South Africa, is today's commercially available aloe vera raw material mainly deriving from plantations in the desert and semiarid regions of central America such as e. g. Texas and Mexico (Fig. 2).

Up to the recent past one would exclusively find the dried whole leaf exudate of a variety of aloe species in European pharmacopeias, listed as cap resp. curacao aloe. They are used because of their laxative and purgative properties. Those curative attributes of the aloe leaf juice

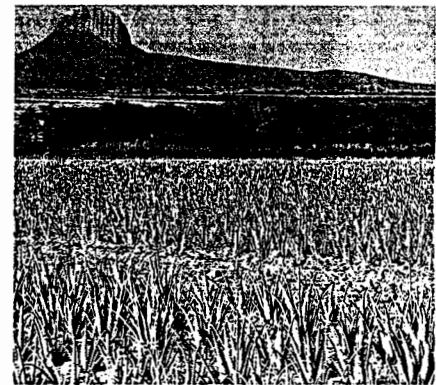


Fig. 2 Aloe vera cultivation in Mexico

were known and employed since centuries, e. g. Alexander the Great ordered to establish aloe plantations in Sokotra to gain the precious leaf exudate and the Greek physician Dioscurides (1st cent. a. c.) included an aloe description in his highly acknowledged compendium on natural drugs and herbs »De Materia Medica«. It is the first documented description of an aloe species in general. Even healers and alchemists of the middle ages such as Paracelsus and St. Hildegard of Bingen reported already purgative applications for aloe and mentioned repeatedly certain wound healing properties of aloe vera extracts in a variety of references (1). However, modern pharmaceutical and medicinal research was, and still is, mainly focused on the laxative by-products of the aloe vera leaf, which are excreted and stored in specialized cells, called aloin cells. They derive chemically from the anthraquinone structure and are named aloins and aloinosides. Since the early thirties, but dominantly in the past two decades, a new aloe vera research direction separated from the anthraquinone science towards evaluation and investigation of the properties of aloe vera gel, which led to the foundation of the International Aloe Science Council, IASC. IASC assembles aloe growers and scientists, edits a journal and arranges international meetings on aloe research (2).