

## Antifungal activity of *Aloe vera* pulp against plant pathogenic fungi

The leaf pulp of *Aloe vera* Tourn. ex Linn., designated as the gel, and the bitter, yellow liquid fraction have been tested against pathogens (bacteria and fungi) affecting human and plants. However, their activity for fungal control in commercial industrial crops has not been determined. Thus, researchers at Mexico carried out studies to evaluate the inhibitory effect of *Aloe* pulp and liquid fraction on the mycelial growth of three phytopathogenic fungi and to determine the extract concentrations that can inhibit mycelial development. *A. vera* leaves were cut from plants grown under greenhouse conditions at the University Antonio Narro, disinfected with sodium hypochlorite and separated in two groups. In the first group, the pulp was manually scraped out; in the second, a laboratory roll processor was used for the pulp and

liquid fraction separation. Both types of extracts were pasteurized. Antifungal activity of pulp and liquid fraction was evaluated on the mycelium development of *Rhizoctonia solani*, *Fusarium oxysporum* and *Colletotrichum coccodes* that were isolated from a potato crop by the hyphae point and monosporic techniques. Fungal plugs 0.4mm in diameter were placed in petri dishes with a potato–dextrose–agar (PDA) culture media and treated with various concentrations of pulp or liquid fraction. The cultures were incubated at  $24\pm 2^\circ\text{C}$  and the radial growth of mycelia measured daily for 7 days. The antifungal effect was measured under a totally random design with four replications.

The results obtained in this work indicate antifungal properties of *A. vera* pulp against *F. oxysporum* and the

liquid fraction against *R. solani*, *F. oxysporum* and *C. coccodes* pathogens. The liquid fraction shows a broader range of antifungal activity than the pulp. It controlled the three pathogens, whereas the pulp inhibited only *F. oxysporum*. No difference was found between the manually or mechanically extracted pulps. Therefore, the commercial extraction (mechanical) method is adequate for pulp and liquid fraction production. *A. vera* pulp and liquid fraction may be an attractive alternative for the use of a natural product for control of fungi that attack commercial crops, avoiding chemical fungicides application [Jasso de Rodríguez D, Hernández-Castillo D, Rodríguez-García R and Angulo-Sánchez JL, Antifungal activity *in vitro* of *Aloe vera* pulp and liquid fraction against plant pathogenic fungi, *Ind Crops Prod*, 2005, 21(1), 81-87].

## Mosquitocidal activities of octacosane from *Moschosma polystachyum* Linn.

The continuous use of synthetic insecticides causes side effects to non-target organisms and insecticide resistance against mosquitoes. *Moschosma polystachyum* Linn. is a mosquitocidal plant which is widely used by tribals in Tamil Nadu state of India as fumigant. The researchers at Division of Vector Biology, Annamalai University, Annamalainagar, Tamil Nadu worked on the isolation, characterisation and evaluation of

octacosane from methanolic leaf extract of this for larvicidal and repellent activities on *Culex quinquefasciatus*.

The crude leaf extract and active compound octacosane showed negligible mortality against early third instar larvae of *Culex quinquefasciatus*. The 24hour  $\text{IC}_{50}$  value was observed at  $153.2\pm 1.3\text{mg/l}$  and  $7.2\pm 1.7\text{mg/l}$  for crude leaf extract and active compound octacosane, respectively. The repellent

activity of active compound octacosane at 1.0 and 2.5mg/cm<sup>2</sup> concentration gave  $85.2\pm 1.7\text{min}$  and  $54.6\pm 2.3\text{min}$  protection, respectively. The total percentage protection of octacosane was  $96.2\pm 0.9$  at 2.5mg/cm<sup>2</sup> and  $86.4\pm 1.3$  at 1.0mg/cm<sup>2</sup> concentration [Rajkumar S and Jebanesan A, Mosquitocidal activities of octacosane from *Moschosma polystachyum* Linn. (Lamiaceae), *J Ethnopharmacol*, 2004, 90(1), 87-89].