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Commercial opportunities for botanical insecticides in a challenging regulatory landscape

Oportunidades comerciales para los insecticidas botánicos en un escenario regulatorio desafiante

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Interest in plant-derived insecticides has grown markedly in the past 35 years, as the voluminous scientific literature dedicated to this subject attests. According to a recent bibliometric study, over 20% of scientific papers published on insecticides in 2011 dealt with botanical extracts or plant natural products. Until very recently this tremendous research effort had not been reflected in the commercial introduction of new botanical insecticides. While pyrethrum (*Tanacetum cineraraeifolium*) continues to be the most widely used botanical insecticide worldwide, insecticides based on neem (*Azadirachta indica*) and various plant essential oils (*Rosmarinus, Syzygium, Mentha* spp.) are gaining acceptance among growers, professional pest control operators, and consumers. Stringent regulatory regimes in the EU, USA and other industrially advanced countries have been a barrier to the introduction of new botanical insecticides, although a handful of new products have been registered. In contrast, acceptance of new botanical insecticides is moving at a faster pace in China, India and Brazil. Some examples of newer botanicals in these countries will be presented. Chemical variability of active principles in source plant material, owing to both biotic and abiotic factors, must be managed by producers to create products with consistent efficacy and stability in storage. This consistency is also demanded by regulatory agencies. In less developed countries, where arguably the worst cases of human poisoning and environmental contamination from synthetic insecticides have occurred, the use of simple plant preparations based on locally available plants is being promoted.