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Phytotoxic Activity of *Imperata cylindrica* (L.) P. Beauv. Extracts

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Cogongrass (*Imperata cylindrica*) is considered to be one of the ten most troublesome and problematic weedy species in the world. This species is found throughout tropical and subtropical regions, generally in areas disturbed by human activities. Cogongrass is a major impediment to reforestation efforts in southeast Asia, and is responsible for thousands of hectares of lost native habitat in the southeastern U.S. Several medicinal bioactive compounds were identified from this species. Among them, cylindrene, a sesquiterpenoid with inhibitory activity on contractions of vascular smooth-muscle [1], graminone-B, a lignan with vasodilative activity [2] and imperanene, a phenolic compound with platelet aggregation inhibitory activity [3]. Cogongrass has been previously reported to be allelopathic. These studies showed a decrease in germination and growth of shoot and root biomass of several weed species to be caused by the foliage and rhizome plus root residues of cogongrass [4,5]. In our studies, we found no phytotoxic activity of root or aerial parts when extracted with methylene chloride, methanol or water on *Lactuca sativa* and *Agrostis stolonifera* at 1.0mg/mL. We found phytotoxic activity of total essential oil extracts of aerial parts. Further studies are being conducted with bioactivity-guided fractionation using silica gel column chromatography of the essential oil extract in an effort to identify and isolate the phytotoxic compounds responsible for the phytotoxic effects.

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