

SUPERCRITICAL FLUID EXTRACTION OF *Spilanthes oleraceae* L

Marangoni, A., Bolzan, A. & Zibetti, A.W.

Federal University of Santa Catarina,
Florianópolis, (Brazil) (NP)

Brazil is a tropical country and supports many plants which contain useful secondary metabolites in its rainforest. The whole plants of *Spilanthes* are used in folk medicine for the treatment of inflammation, edema, pyrexia, astringent and analgesic [1]. Phytochemically, flowers of *Spilanthes* are reported to contain amino acids [2] alkaloids [2] and N-isobutylamides (spilanthol, undeca-2E,7Z,9E-trienoic acid isobutylamide and undeca-2E-en-8,10-dienoic acid isobutylamide) [3]. The extraction of essential oils and oleoresins with supercritical fluid extract (SFE) has been used as an alternative to conventional extraction processes. The use of carbon dioxide as solvent for SFE is an alternative to traditional methods extraction, because it doesn't permit contamination and compound degradation of extracts. In this study was compared the pressure and temperature which were between 3 levels to pressure and 2 levels to temperatures in a dynamic extraction process. The pressures were 90, 100 and 120 bar. The temperatures were 32, 35 and 40°C. The *Spilanthes oleraceae* L leaves were collected always in March, 2008. It was taken to the Process Control Laboratory, at EQA/UFSC, where it was dried at 30°C and 120 h. Then the raw material was fractionated in a grinder and it was classified in a sieve shaker. One fixed bed extractor (length 50.0 cm, inner diameter 2.1 cm) was packed manually with 50 g, approximately. The results were analyzed in terms of yield (g essential oil/g de material plant). The extraction yield was comprehended from 0,18% (90 bar and 32°C), 0,20% (90 bar and 35°C), 0,35% (90 bar and 40°C), 0,30% (100 bar and 32°C), 0,33% (100 bar and 35°C), 0,42% (100 bar and 35°C), 0,41% (120 bar and 32°C), 0,46% (120 bar and 35°C) to 0,53% (120 bar and 35°C). The chemical analysis by GC/MS revealed that roughly the same compounds were extracted; the SFE extracts exhibited a higher concentration of the key components. From the organoleptic point of view, the supercritical absolutes showed a considerable high quality of fragrance and color, with very fresh natural character and a pale yellow color, most suitable for the use in cosmetics and pharmaceutical industry.

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