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New Colour Test for the Detection of Endrin in Autopsy Tissues

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Neuer Farbtest zum Nachweis von Endrin in Autopsiegeweben

Nachw. von Endrin in Geweben, Biolog. Material; Farbreaktion

A new and specific colour reaction for endrin has been worked out. It has been applied to tissues of poisoning cases and detected up to 0.05 mg of endrin per 100 g of tissue.

Procedure. Extract the insecticide from the tissue by the method described by us earlier [1], remove the solvent from 1 ml of the acetone solution obtained (containing about 100 µg of endrin) using a hot water bath, cool, add 20 ml of chilled nitrating mixture (conc. H_2SO_4 + conc. HNO_3, 1:1), place for 30 min in tap water, transfer to a boiling water bath, remove after 2 h and cool in an ice bath. Add 100 ml of ice-cold water, extract with chloroform (20, 10, 10 ml), combine the separated chloroform layers, wash with 2 × 20 ml of 20% aqueous KOH solution, then with 5 × 20 ml of water, dry the chloroform layer over anhydrous Na_2SO_4, concentrate to 0.5 ml at room temperature, evaporate to dryness, dissolve in 1—2 drops of cyclohexane, add 1 drop of ethanolic N KOH solution and observe the change of colour (suitably on a spotting tile). In presence of endrin a prominent violet colour is immediately obtained, persisting for about 10 min and then changing to brown followed by yellow. Colour formed with other chlorinated insecticides have also been studied and are as follows: BHC blue; DDT transient violet-blue; aldrin and dieldrin brown; chlordan, toxaphene and kelthan yellow.

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Reference

1. Tewari, S. N., Sharma, I. C.: Z. Anal. Chem. **278**, 127 (1976)

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Identification of LSD and Ergot Alkaloids by Thin-Layer Chromatography

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Identifizierung von LSD und Ergot-Alkaloiden durch Dünnschicht-Chromatographie

Nachw. von LSD, Ergot-Alkaloiden; Chromatographie, Dünnschicht

In this paper the identification and separation of LSD and ergot alkaloids by thin-layer chromatography is described, using two new reagents.

Experimental

Silica gel G film was used. The plates were developed by the following solvent systems; S_1 benzene-acetone-ether-25% ammonium hydroxide (4 : 6 : 1 : 0.3); S_2 chloroform-benzene (50 : 40), saturated with formamide and mixed with 10 parts of methanol; S_3 benzene-n-heptane-chloroform-diethylamine (4 : 2 : 3 : 1).

Following development, the chromatoplates were dried in a current of hot air and then sprayed by reagents I or II. *Reagent I:* a) 0.3% solution of sodium 1,2-naphthoquinone-4-sulfonate in ethanol-water (1 : 1), b) 10% hydrochloric acid solution. *Reagent II:* a) 0.2% solution of 2-nitrosonaphthol-1 in ethanol, b) 10% hydrochloric acid solution. After spraying first with (a) and then with (b), the chromatogram was heated at 110 °C for 20 min in each case.

Table 1

Alkaloids	Solvent systems		
	S_1	S_2	S_3
LSD	0.74	0.53	0.43
Ergotamine	0.65	0.41	0.05
Ergometrine	0.36	0.23	0.04
Ergocornine	0.80	0.64	0.21
Ergocrystine	0.83	0.63	0.23
Ergocryptine	0.85	0.66	0.29

The R_f values are shown in Table 1.

These alkaloids give red-purple spots on a light-pink background with reagent I and blue-black spots on a yellow background with reagent II. The limit of sensitivity is 1—3 µg. These reagents are specific for LSD and ergot alkaloids. Other alkaloids (e.g. reserpine, emetine, quinine, strychnine, pilocarpine, atropine, scopolamine, cocaine, and especially opium alkaloids) did not give any colour.