

Summary

Toxic action, acceptability and gustatory effectiveness of the new rodenticide, bithiosemi [methylene-bis(1-thiosemicarbazide)] with albino rats and Norway rats were investigated.

- (1) The primary action of bithiosemi may possibly be caused by TSZ being produced by the activation in the stomach.
- (2) It became clear through the preference test, the determination of acceptable thresholds and the acceptance test with the Skinner Box that the acceptability of bithiosemi in rats was better and larger than that of TSZ.
- (3) By the application of bithiosemi hypersaturated solution applied on the tongue surface of the rat, no electrical change except the response of off-type was caused in the chorda tympani nerve. Its cause might be related to the extreme insolubility in water.
- (4) The good acceptability of bithiosemi might be related to both the lack of gustatory effectiveness for the chorda tympani nerve of the

rat and slightly slower toxic action than TSZ.

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References

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抄 録

哺乳動物のフェロモン：雄えだづのかもしかの耳下腺に含まれる活性物質の同定

Mammalian Pheromone: Identification of Active Component in the Subauricular Scent of the Male Pronghorn. Dietland Müller-Schwarze, Christine Müller-Schwarze, Alan G. Singer, Robert M. Silverstein, *Science*, 183, 860~862 (1974).

えだづのかもしかの雄は耳下腺の分泌物をこすり付けて、人間の鼻でもそれと判る匂いを付け、なわ張りのマークとしている。他の雄が付けた匂いを見つると、あらたにその場所に匂付けを行なう。耳下腺をベンタンで抽出し、揮発性成分をGC分析した結果、8成分が同定された。エステル化後GC-Mass分析により2-methyl butyric acid (1)と isovaleric acid (2) (各々10 μ g/分泌腺)の存在が、13-methyl-1-tetra-

decanol (3)と12-methyl-1-tetradecanol (4) (各々30 μ g/分泌腺)がMass, IR, NMR等の結果同定され、残り4成分(各々70~100 μ g/分泌腺)はメクノリシス後(1)(2)のメチルエステルと(3)(4)を与えること、および機器分析の結果から13-methyl tetradecyl 3-methyl butyrate, 12-methyl tetradecyl 3-methyl butyrate, 13-methyl tetradecyl 2-methyl butyrate, 12-methyl tetradecyl 2-methyl butyrateと同定した。これら8種の化合物およびその混合物の生物試験を行なった結果、isovaleric acidが最も強い活性を示し、その他のエステルやアルコール類は先駆物質、希釈剤あるいは揮散制御剤として働いていると思われる。その他の成分や当該成分の組成化の相異が各個体のマークの識別に役立っていると思われる。

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