Physiologically Active Substances in the Series of Arenesulfonamines

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The previously developed preparative synthetic route to chloral N-arenesulfonylimines from N,N-dichloroarenesulfonamides and 1,2-polyhalogenethenes has allowed synthesis of a series of promising biologically active compounds including those possessing insecticidal, acaricidal, neurotropic, anti-viral activity [1,2].

Continuing our investigation of the biological activity of compounds in the $ArSO_2NHCH(R)CCl_3$ series we have found among arenesulfonamide derivatives some substances having bactericidal, fungicidal, herbicidal, and growth-regulating properties.

Herbicidal activity tests were carried out in hot-houses on soy-bean, oat, sunflower, reddish, beet-root cultures. The highest activity was displayed by a compound with R = NHCOPh only for the soy-bean, with other cultures the herbicidal activity being lower. Compounds with R = $NHCOCH_3$ and O = $N(Me)CMe_3$ showed a minor herbicidal effect.

The fungicidal properties of arenesulfonamide derivatives were evaluated by the growth rate of spores and mycelium of phytopathogenic fungi on a thick nutrient medium (potato-glucose agar), 72 h incubation at 24-25°C. Compound with R = OMe showed the highest growth-inhibiting activity (compared with reference TMTD - tetramethylthiuramedisulfide) with respect to fungi *Botrytis cinerea*, *Venturia inaegualus*, *Verticillininen dahliac*. Compounds with R = OEt, O=N(Me)CMe_3, NHCOPh. $NHSO_2Ph$ had poor fungicidal properties.

A marked growth-regulating action on the cultures of tobacco cells by arenesulfonamide derivatives with R = OMe, OBu, SBu, O=N(Me)CMe_3.has been observed.

The results of tests have shown the compound with R = OMe to possess bactericidal activity with respect to *Xanthomonus malvacearum* (100% death rate) which corresponds to the known reference (TMTD). Considerably lower bactericidal properties were demonstrated by compounds with R = OMe, OBu, SBu, O=N(Me)CMe_3, NHCOPh, $NHSO_2Ph$ (growth-inhibiting rate from 35 to 65%).

Thus, the arenesulfonamide derivatives in the $ArSO_2NHCH(R)CCl_3$ series are rather promising for the search of new biologically active substances among them.

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