Pyridine Derivatives as Insecticides. Part 1: Synthesis and Toxicity of Some Pyridine Derivatives Against Cowpea Aphid, Aphis craccivora Koch (Homoptera: Aphididae)

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Abstract:

Five pyridine derivatives, namely, N-morpholinium 7,7-dimethyl-3-cyano-4-(4-nitrophenyl)-5-oxo-1,4,5,6,7,8-hexahydroquinoline-2-thiolate (1), sodium 5-acetyl-3-amino-4-(4-methoxyphenyl)-6-methylthieno[2,3-b] pyridine-2-carboxylate (2), piperidinium 3,5-dicyano-2-oxo-4-spirocyclopentane-1,2,3,4-tetrahydropyridine-6-thiolate (3), piperidinium 5-acetyl-3-cyano-4-(4-methoxyphenyl)-6-methylpyridine-2-thiolate (4), and piperidinium 5-acetyl-4-(4-chlorophenyl)-3-cyano-6-methylpyridine-2-thiolate (5) were prepared in pure state and subjected to the title study. The bioassay results indicated that the insecticidal activity of compound 1 is about 4-fold that of acetamiprid insecticide. The rest of the tested compounds possess moderate to strong aphidicidal activities.

Keywords:
pyridines, piperidinium thiolates, spiro compounds, thienopyridines, acetamiprid, insecticides

Published In:

Journal of Agricultural and Food Chemistry, 62, 9982-9986