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2,4-Dioxo-1,3-thiazolidine derivatives as a lead for new fungicides

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Abstract:

Derivatives of 2,4-dioxo-5-benzylidene-3-thiazolidineacetamide were prepared and the fungicidal and the bactericidal activities of twenty-three related compounds were examined. *In vitro* tests at a concentration of 10 mg/l, some derivatives showed moderate or considerable inhibition against *Pyricularia oryzae* (*P. oryzae*), *Rhizoctonia solani* (*R. solani*), and *Septoria tritici*, but only modest activity against *Botrytis cinerea* and *Burkholderia gluma*. The activity of a few compounds was enhanced by co-application of salicyl hydroxymate (SHAM), which is known to potentiate the fungicidal activity of strobilurins. In pot tests at a concentration of 500 mg/l, some compounds showed appreciable activity against rice blast, late blight on tomatoes, downy mildew on cucumbers, or leaf rust on wheat. Of these compounds *N,N*-dimethyl-2,4-dioxo-5-benzyl-3-thiazolidineacetamide completely removed the downy mildew. Most of them showed only modest activity against gray mold on cucumbers.

Keywords:

2,4-dioxothiazolidine, fungicide, bactericide, SHAM-test

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