ONLINE ISSN : 1349-0923
PRINT ISSN : 1348-589X

**Journal of Pesticide Science**
Vol. 31 (2006) , No. 3 pp.305-310



# Synthesis and herbicidal activity of 2-acylimino-3-phenyl-1,3-thiazolines—A new family of bleaching herbicides—

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(Received: November 7, 2005)
(Accepted for publication: February 8, 2006)

**Abstract:**
A novel series of substituted 2-acylimino-1,3-thiazolines was synthesized and their herbicidal activity against upland weeds and selectivity against crops was assessed. The structure–activity relationships were probed by substitution of the thiazoline nucleus and/or an imino group. Highest activity was seen with compounds which contain two substituents: a methyl group at the 5-position of the thiazoline nucleus and a trifluoroacetyl or a difluoroacetyl group on an imino moiety. Among the compounds examined, 2-(*N*-difluoroacetylimino)-5-methyl-3-(3-trifluoromethylphenyl)-1,3-thiazoline applied at rates between 62.5 and 125 g a.i./ha, showed excellent broad-spectrum pre-emergence herbicidal activity against grass and broadleaf weeds without injury to cotton.

**Keywords:**
1,3-thiazoline, bleaching herbicidal activity, structure–activity relationship, pre-emergent herbicide

doi:10.1584/jpestics.31.305

JOI JST.JSTAGE/jpestics/31.305