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(54) **Title**: MESOIONIC PESTICIDES

(57) **Abstract**: Disclosed are compounds of Formula 1, *N*-oxides, and salts thereof, wherein (Formula 1) X is O or S; Y is O or S; A is O, S, NR^{3e} or $C(R^{3c})=C(R^{3d})$; Z is a direct bond, O, $S(O)_n$191, NR^6, $C(R^7)_2$ O,$OC(R^7)_2$, $C(=X^1)$, $C(=X^1)E$, $EC(=X^1)$, $C(=NOR^8)$ or $C(=NN(R^6)2)$; a is 1, 2 or 3; and R^1, R^2, R^{3a}-R^{3e}, R^4, R^5, R^6, R^7, R^8, X^1 and E are as defined in the disclosure. Also disclosed are compositions containing the compounds of Formula 1 and methods for controlling an invertebrate pest comprising contacting the invertebrate pest or its environment with a biologically effective amount of a compound or a composition of the invention.