

O.31 - Herbicide resistance in Italy: situation and management

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Herbicides are essential tools for weed management in conventional agriculture. However, their widespread use creates an intense selection pressure on target weeds. As a result, there has been a rapid increase in the number of resistant biotypes and resistant populations within biotypes. In Italy, 23 biotypes involving 16 weed species and five herbicide groups have been reported as resistant to one or more groups of herbicides. The worst situations are related to ALS-resistant populations in rice crops (*Schoenoplectus (Scirpus) mucronatus* and *Cyperus difformis*) and to both ALS- and ACCase-resistant populations in durum wheat (*P. rhoeas*, *Lolium* spp., *A. sterilis*). Resistant populations of summer weeds, *Sorghum halepense* and *Digitaria sanguinalis* resistant to ACCase inhibitors and *Echinochloa crus-galli* resistant to ALS inhibitors, have also been found recently in dicot crops (soyabean, melon, tomato) and maize, respectively. The Italian Herbicide Resistance Working Group (GIRE) began its activity in 1997. The group is formed by seven agrochemical companies with herbicides directly or potentially involved in herbicide resistance, plus academic, research and extension personnel. Screening test procedures have been agreed on and about 600 weed populations have been tested, of which more than 200 have shown resistance to one or more herbicides. The GIRE mission is to facilitate herbicide resistance management through cooperation and communication between public and private stakeholders. To prevent and/or limit the impact of herbicide resistance it will be important to preserve the relatively high diversity in Italian farming systems and adopt integrated weed management.