

### Weed Resistance

Weed resistance can develop when increasing the number of consecutive applications on a specific site. Resistant plants produce a form of acetolactate which can quickly metabolize the herbicide into inactive forms.

### Behavior in Soils

#### Adsorption and leaching

Most sulfonylurea adsorption to clay is low, while organic matter has some affinity. The rate of leaching is highly dependent on soil pH, with less leaching occurring at the acid pH levels where water solubility is lower.

#### Persistence

Sulfonylureas are weak acids and stable metal salts are formed when treated with a base alkaline earth hydroxide or carbonate. Sulfonylurea herbicides degrade in soils by chemical hydrolysis and microbial mediated degradation. Persistence is drastically affected by soil pH. Chemical hydrolysis occurs

rapidly at acidic pH levels. Persistence is longer in neutral to basic pH soil and some members may persist in soil 1 to 2 years when applied to alkaline (pH > 7.0) soils. Sulfonylureas exist primarily in the anionic form.

### Distinguishing characteristics

- High level of unit activity, resulting in low use rates;
- Systemic movement in plants;
- Blockage of the enzyme acetolactate synthase is the primary site of action;
- Water solubility and movement in soil is pH dependent with less solubility and leaching at low or acidic pH levels;
- Persistence in soils is pH dependent with less persistence at acidic pH levels.

### Toxicological Properties

<u>Acute Oral Toxicity</u>	<u>LD<sub>50</sub>(mg/kg)</u>
Metsulfuron	>5000
Sulfometuron	>5000
Chlorsulfuron	5545
Halosulfuron	8865

## TRIAZINES

### Important Members and Formulations (Table 26)

Table 26. Important members of the triazine family.

Common Name	Trade Name(s)	Manufacturer	Water Solubility (ppm)	Vapor Pressure (mm HG @ 20-35° C)
<b>Symmetrical Triazines</b> Atrazine	Aatrex Atrazine	Ciba-Geigy DowElanco	33-70	$3.0 \times 10^{-7}$
Simazine	Princep	Ciba-Geigy	5-85	$6.1 \times 10^{-9}$
Ametryn	Evik	Ciba-Geigy	185	$8.4 \times 10^{-7}$
Prometryn	Caparol	Ciba-Geigy	33-48	$1.0 \times 10^{-6}$
Hexazinone	Velpar	DuPont	33,000	$2.7 \times 10^{-7}$
<b>Asymmetrical Triazines</b> Metribuzin	Sencor Lexone	Miles DuPont	1220	$>1 \times 10^{-5}$