



**Effect on milkwort jewelflower *Streptanthus polygaloides* genotypes
(*Streptanthus polygaloides*, *Streptanthus tortuosus*, *Streptanthus breweri*)**

The interaction between heavy metal and insect under combined stress at plant interface

Crop: Milkwort jewelflower (*Streptanthus polygaloides*, *Streptanthus tortuosus*, *Streptanthus breweri*)
 Stress 1: Heavy Metal Nickel (Ni)
 Stress 2: Insect (*Spodoptera exigua*) Second instar
 Stage of plant: Fully grown plant

The table shows the effect of heavy metal on per cent survival of *Spodoptera exigua* and means larval weight under combined stress treatment

Treatment	Response to combined stress** Type B parameters*	
	Per cent survival of Insect (<i>Spodoptera exigua</i>) post 9 days	Mean larval weight (mg)
<i>Streptanthus polygaloides</i> (Untreated)	51.6	NA
<i>Streptanthus polygaloides</i> + Heavy Metal (Ni- 800 mg/kg soil) + herbivory (Sequential stress)	3.9	NA
<i>Streptanthus tortuosus</i> (Untreated)	69.6	55.0
<i>Streptanthus tortuosus</i> + Heavy Metal (Ni- 800 mg/kg soil) + herbivory (Sequential stress)	75.4	29.0
<i>Streptanthus breweri</i> (Untreated)	47.8	77.0

<i>Streptanthus breweri</i> + Heavy Metal (Ni- 800 mg/kg soil) + herbivory (Sequential stress)	41.3	49.0
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Reference – Boyd RS, Moar WJ (1999) The defensive function of Ni in plants: response of the polyphagous herbivore *Spodoptera exigua* (Lepidoptera: Noctuidae) to hyperaccumulator and accumulator species of *Streptanthus* (Brassicaceae). *Oecologia* 118:218-224

Note:

‘*’ - For more information on parameter classification, please refer to the ‘methodology’ tab.

‘***’ - Values are presented as it is from the source article without subjecting to the calculation.

Inference from the study: Boyd et.al. 1999 studied the interaction of heavy metal Nickel (Ni) and insect *Spodoptera exigua* interaction in three *Streptanthus* genotypes; *Streptanthus polygaloides*, *Streptanthus tortuosus* and *Streptanthus breweri* plants. Plants were grown on control and Ni amended soil. Then they were subjected to herbivory. In response to the combined stress plants showed a decreased survival rate of *Spodoptera*. This decrease was maximum in *Streptanthus polygaloides*. Mean larval weight also reduced in *Streptanthus tortuosus* and *Streptanthus breweri* plants. **Thus, heavy metal affects the growth of insects negatively in *Streptanthus polygaloides*.**