

Arsenic In The Soil

What is the relationship between the arsenic in the soil and the plant growth?



Methods

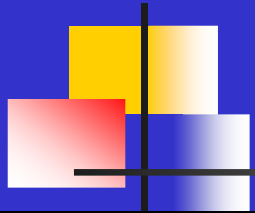


Two members of the group had to travel to Sweet Home to collect soil samples. While the others collected samples at Crescent Valley. We collected 8 samples from each site, totaling to 16 samples.

We then put our plant, English Ivy (*Hedera Helix*) into 16 separate pots.

We watered all of the samples daily with 100 ml of water each. Then we measured their growth weekly.

Data & Results Background for Sweet Home



Sample #	Original Sample ID	Sample Type	Easting	Northing	Mass of Drying dish (grams)	Mass of Drying Dish + Wet Sample (grams)	Mass of Wet Sample (grams)	Mass of Dry Bulk Sample + Drying Dish (grams)	Mass of Dry Bulk Sample (grams)	% Moisture in Sample (%)	Sample #	Mass of Small Vial (grams)	Mass of Small Vial + Sample (grams)	Sample Mass for Reactor (grams)	Large Vial #
19	C15S01	soil	0521960	4915360	30.979	87.503	56.524	75.130	44.151	28.024%	19	1.220	1.698	0.478	X04

Arsenic

AS-76

Sample Nr

Spectrum

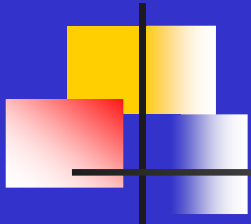
559.1

19

2u69719.ufo

18.0

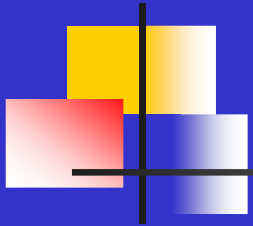
Data & Results Background for Crescent Valley



CV Sample #	Small Vial #	Large Vial #	Empty Small Vial Mass	Full Small Vial Mass	Sample Mass	Large Vial #	Bottom Small Vial #	Top Small Vial #
C15S03	967-109	X94	1.215	2.25	1.035	X63	119	138

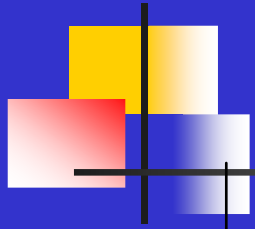
CV Sample #	Small Vial #	ppm Arsenic-76	Error
C15S03	967-109	Unknown	-----

Our Estimate for the results of arsenic at CV is about 0.2



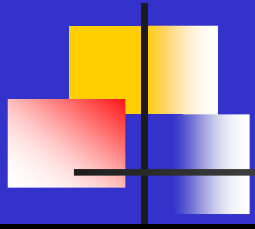
Sweet Home Plants

Sample ID	12/12/2003	12/26/2003	1/9/2004	1/20/2004	Avg. weekly growth
D06S01	3.4	3.5	3.5	4	.12 in
D06S02	2	2.5	3.25	4	.4 in
D06S03	4.5	5.3	3.5	5.5	.2 in
D06S04	3.3	3.5	4.5	5	.34 in
D06S05	2.5	3	4	4	.7 in
D06S06	2	2	3	3.5	.3 in
D06S07	3.5	4	5	4.5	.2 in
D06S08	3	3.5	4.5	4.5	.3 in



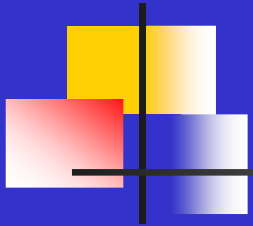
Crescent Valley Plants

Sample ID	12/12/2003	12/26/2003	1/9/2004	1/20/2004	Avg. weekly growth
D06S09	1.5	2	0.75	3.5	.4 in
D06S10	2.5	3	3.5	4.5	.4 in
D06S11	3.5	3	5	5	.3 in
D06S12	1	3.3	2	2.25	.25 in
D06S13	1.5	2	2.5	3.5	.4 in
D06S14	6	7	7.5	8	.4 in
D06S15	3.4	3.5	4	4.5	.22 in
D06S16	2.4	3	4	4.5	.42 in



Averages

Avg weekly Growth Of Sweet Home soil plants	.32 in	Avg Growth of Sweet Home soil plants	1.35 in
Avg weekly growth of Crescent Valley Soil plants	.348 in	Avg Growth of Crescent Valley soil Plants	1.74 in



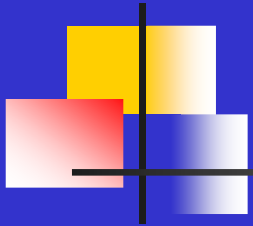
Conclusions

Crescent Valley Plants had **0.39** better average growth than Sweet Home plants

We don't know the arsenic content of Crescent Valley's soil

Conditions all the same and vines were from the same plant

Noticeably A Small Difference



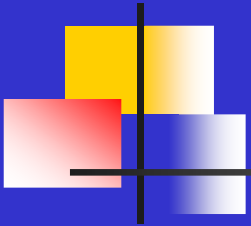
Connections

High arsenic levels affect plant growth, which is important to local farmers.

It is important to the local community.

It is important to city councils and planners.

It is also important to local and state wide scientists for the continuing study on arsenic.



Next Steps



To test other plants and specimens to see if the same result occurs in all plants.

To perform tests about arsenic levels in water.

To test and see how it infects the macro invertebrates in the soil.