



## *Porcellio sp.*

ناديا عماد الامين

*Porcellio sp.*

)	\	(0.08±146	0.44±5963	0.33± 8166
	\	( 0.15±220	1.15±99801	)
)	\	0.08±416		
	/	( 0.12±233	0.88±6966	

## USING OF *Porcellio sp.* AS A BIOINDICATOR TO MEASURING THE LEVEL OF SOME HEAVY METAL POLLUTION IN BAGHDAD CITY

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### Abstract

The aim of this study is to estimate the pollution levels of heavy metals by using the genus *porcellio sp.* as a bioindicator to this pollution.

Four experimental sites in Baghdad were selected (Jadrya, Al-sadr, Al-dura and Al-gazalya). the genus individuals were take from the soil of these places and dried then analyzed by the Absorption Spectrophotometry. Seven heavy metals measured they includes (Pb ,Cu ,Fe ,Mn ,Ni ,Cd and Co).

The results showed that there was a pollution in these places and the higher levels in Jadrya were in (Cu 8166±0.33 , Mn 5963±0.44 , Cd146±0.08) µg/gm, in Al-sadr city were in (Fe 99801±1.15, Co 220±0.15) µg/g in Al-dura was in (Ni416±0.08) µg/g and in Al-gazalya were in (Pb6966±0.88 , Co233±0.12) µg/g .This pollution of heavy metals was a natural result because of the traffic activity and the increasing of the car numbers which still using the lead gasoline and this caused big troubles to the environment, dangerous to the human. Beside the human activities, recent the

green zones is important in decreases the damages of heavy metals on the environment.

*porcellio sp.* (9) 38

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(2)

Atomic absorption spectrophotometer  
Perkin Elmer U.S.A.

هضم العينة (3)  
(4)

250gm

5ml

24

2-3 ml

Isopoda *Porcellio sp.*  
*Porcellio sp.*  
Crustaceae

25ml

القياس (5)

sow bugs woodlous

Detritus (6)

Fe (7)

248.3

الامتصاصية abs	تراكيز الحديد ppm
0.0*	0.0*
0.025	0.5
0.050	1.0

(8)

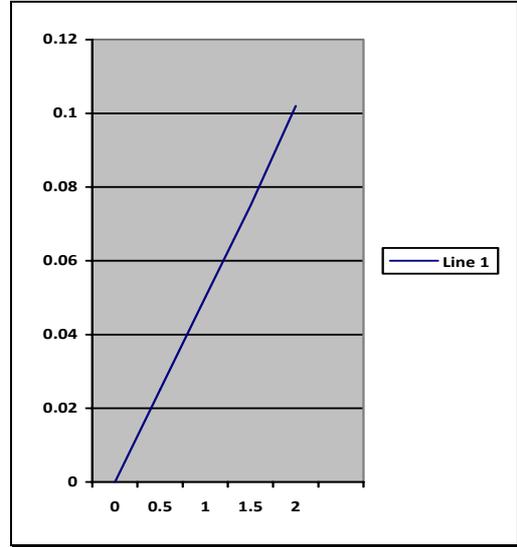
من (الرصاص و الكوبلت). وكما هو موضح في الجدول (1) كما يتضح أيضاً وجود تفاوت في المعدلات بين عنصر وآخر من منطقة لأخرى.

0.075	1.5
0.102	2.0

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**Porcellio sp.**

المناطق	العناصر μg/gm	الجادرية	مدينة الصدر	الدورة	الغزالية
	±0.57c	±1.45b	±1.52a	±0.88a	
Cu النحاس	8166	4833	4900	6466	
	±0.33a	±0.33c	±0.57c	±0.66b	
Fe الحديد	38500	99801	66766	45966	
	±7.63d	±1.15a	±0.88b	±0.88c	
Mn المنغنيز	5963	4166	2166	3266	
	±0.44a	±1.45b	±0.88d	±0.88c	
Ni النيكل	336	320	416	410	
	±0.08b	±0.15b	±0.08a	±0.05a	
Cd الكاديوم	146	113	110	116	
	±0.08a	±0.08b	±0.05b	±0.03b	
Co الكوبلت	110	220	216	233	
	±0.05b	±0.15a	±0.08a	±0.12a	



:1

تدخل العينة الحيوانية المراد قياسها الجهاز و بعد قراءتها وجد ان الامتصاصية كانت 0.072 ، وبتسقيط الامتصاصية على المنحنى نحصل على 1.3ppm وهو تركيز عنصر الحديد Fe في العينة . وفي حالة تحويل التركيز الى مايكروغرام/غرام μg/g:

$$\begin{aligned} & \text{(حجم العينة ml} \times \text{تركيز العينة } \mu\text{g/ml او ppm)} \div \\ & \text{وزن العينة gm} = \mu\text{g/gm} \\ & = 0.25 \text{ gm} \div (1.3 \mu\text{g/ml} \times 25 \text{ ml}) \\ & \quad \quad \quad 130\mu\text{g/gm} \end{aligned}$$

(0.05)

(2)

**النتائج والمناقشة**

أظهرت النتائج وجود تلوث بالعناصر الثقيلة في المناطق المدروسة إذ سجلت منطقة الجادرية أعلى معدل بالتلوث لكل من العناصر (النحاس و المنغنيز و الكاديوم)، وسجلت مدينة الصدر أعلى معدل لعنصري (الحديد و الكوبلت)، اما منطقة الدورة فسجلت اعلى معدلات لعنصر (النيكل)، بينما سجلت منطقة الغزالية أعلى معدلات لكل

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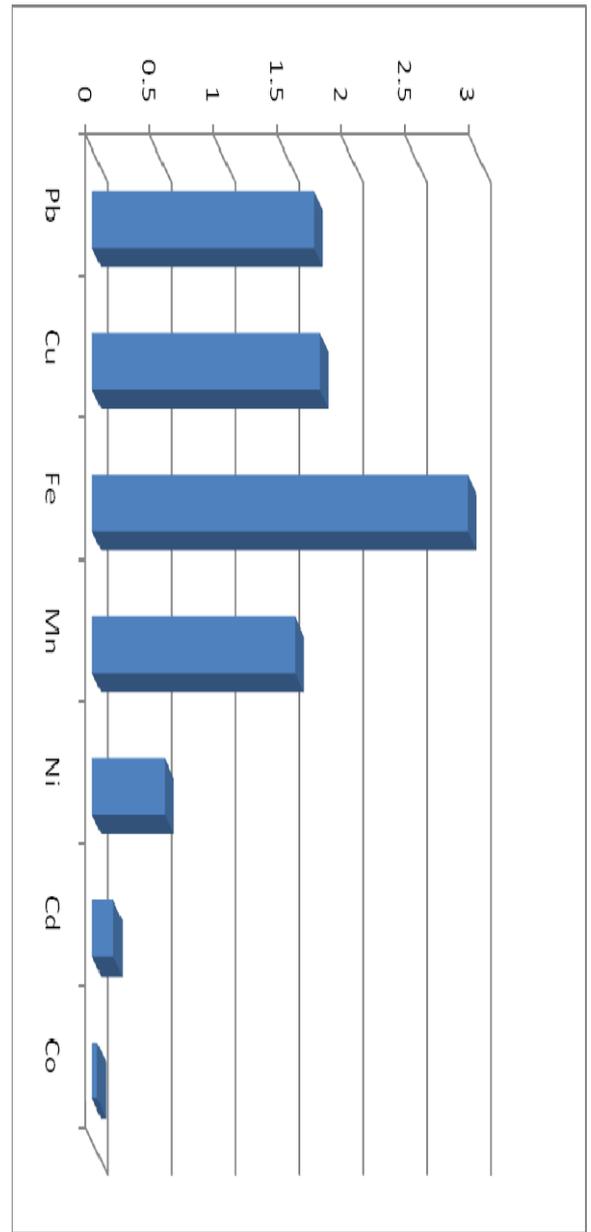
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(HC SO<sub>2</sub>,CO)



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بشیر (10)

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*porcellio* sp.

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