

4. RESULTS

4.1 Determination of Lead in the Five Plant Species

4.1.1 Comparison of lead contents in unwashed samples between December and July (dry and rainy seasons)

The concentrations of lead in unwashed samples of the five plant species in December (dry season) are shown in Table 4.1.

Table 4.1. Contents of lead in unwashed samples in December (dry season), 1995 (mg/kg DW)

SITE	<i>Dimocarpus</i>	<i>Mangifera</i>	<i>Bougainvillea</i>	<i>Amaranthus</i>	<i>Eleusine</i>
1	2.0	1.9	27	12.0	2.1
2	2.4	3.4	15	6.6	3.5
3	1.7	8.1	66	33	3.6
4	1.6	2.4	7.3	2.2	1.2
5	1.5	2.9	3.1	1.3	2.4
6	2.9	2.0	42	19	4.1
7	0.8	3.8	5.8	4.6	3.2
8	1.7	3.5	13	nd	1.8
9	2.8	6.1	9.9	nd	2.2
10	1.1	1.8	14	12	3.8
11	1.7	4.2	8.2	5.1	3.2
12	1.8	1.2	12.2	1.9	2.5
13	1.0	nd	2.1	1.0	nd

* Limit of determination is 0.5 mg/kg

The contents of lead in unwashed samples of five plant species in July (rainy season) are listed in Table 4.2.

Table 4.2. Contents of lead in unwashed samples in July (rainy season), 1995
(mg/kg DW)

SITE	<i>Dimocarpus</i>	<i>Mangifera</i>	<i>Bougainvillea</i>	<i>Amaranthus</i>	<i>Eleusine</i>
1	1.5	2.4	22	17	1.8
2	0.8	3.8	8.9	9.1	4.3
3	3.8	13	48	47	2.5
4	4.4	8.7	30	3.1	0.9
5	2.3	3.0	5.1	1.4	2.5
6	1.2	5.4	8.5	11	2.2
7	0.9	2.5	5.0	1.8	4.6
8	1.4	5.1	3.2	3.0	4.7
9	0.5	5.5	6.0	2.8	2.6
10	nd	5.2	3.8	5.6	7.4
11	2.7	13	20	6.3	2.6
12	2.4	1.5	6.0	16	6.5
13	nd	nd	1.6	2.3	nd

4.1.2 Comparison of lead contents in washed samples between December and July (dry and rainy seasons)

The contents of lead in washed samples of the five plant species in December (dry season) are listed in Table 4.3.

**Table 4.3. Contents of lead in washed samples in December (dry season), 1995
(mg/kg DW)**

SITE	<i>Dimocarpus</i>	<i>Mangifera</i>	<i>Bougainvillea</i>	<i>Amaranthus</i>	<i>Eleusine</i>
1	1.0	1.1	3.2	4.3	1.0
2	2.0	1.7	10	2.2	2.1
3	1.3	5.1	28	12	1.5
4	nd	2.0	4.7	1.2	0.5
5	0.6	1.0	1.5	0.6	1.8
6	1.4	1.3	18	2.4	1.2
7	0.3	2.0	2.2	0.9	0.8
8	0.8	1.5	5.7	nd	1.2
9	0.3	3.5	2.3	nd	0.8
10	1.0	0.5	7.6	5.2	2.2
11	1.5	2.3	2.6	4.2	1.4
12	1.2	2.1	7.1	nd	1.5
13	0.5	nd	1.0	0.6	nd

The contents of lead in washed samples of the five plants in July (rainy season) are listed in Table 4.4.

Table 4.4. Contents of lead in washed samples in July (rainy season), 1995
(mg/kg DW)

SITE	<i>Dimocarpus</i>	<i>Mangifera</i>	<i>Bougainvillea</i>	<i>Amaranthus</i>	<i>Eleusine</i>
1	1.2	2.1	13	7.6	0.8
2	0.5	1.5	5.4	7.1	2.2
3	1.0	5.6	19	15	1.8
4	1.9	4.1	8.7	2.3	0.5
5	0.5	2.5	2.2	0.5	1.8
6	nd	4.8	4.7	5.2	1.2
7	0.5	1.8	2.1	1.3	2.8
8	nd	1.5	1.0	4.7	3.8
9	nd	2.0	1.5	2.3	1.4
10	nd	1.2	2.6	4.4	5.0
11	2.3	3.9	8.8	4.3	2.0
12	2.1	0.8	3.5	8.3	4.0
13	nd	nd	0.8	1.2	nd

4.2 Recovery Analysis

The recoveries of lead for sample analysis of the five plant species are listed in Table 4.5.

Table 4.5 Recovery of lead in five plant samples for sample analysis

Plants	Recoveries (%)			
	1	2	3	Average
<i>Dimocarpus</i>	96	110	104	103
<i>Mangifera</i>	98	105	101	101
<i>Bougainvillea</i>	93	98	101	94
<i>Amaranthus</i>	88	94	96	93
<i>Eleusine</i>	86	96	92	91

4.3 Reference Materials Test

The results of the reference materials tests are shown in Table 4.6.

Table 4.6 Results of Reference Materials Tests

Reference Material	Concentration of Lead (mg/kg)		Measured Value(mg/kg)		
	Certified Value	Confidence Interval (sig. level 0.05)	1	2	Average
RYE GRASS	2.38	2.27-2.49	2.3	2.6	2.45
HAY POWDER	1.6	0.8-1.9	1.6	2.0	1.8

4.4 Calibration by Curvilinear Regression

A specimen curvilinear regression line relating peak area to mass of lead is showed in Figure 4.1.

CALIBRATION POINTS AND REGRESSION LINE
(BOTH PLOTTED AS PEAK AREA)

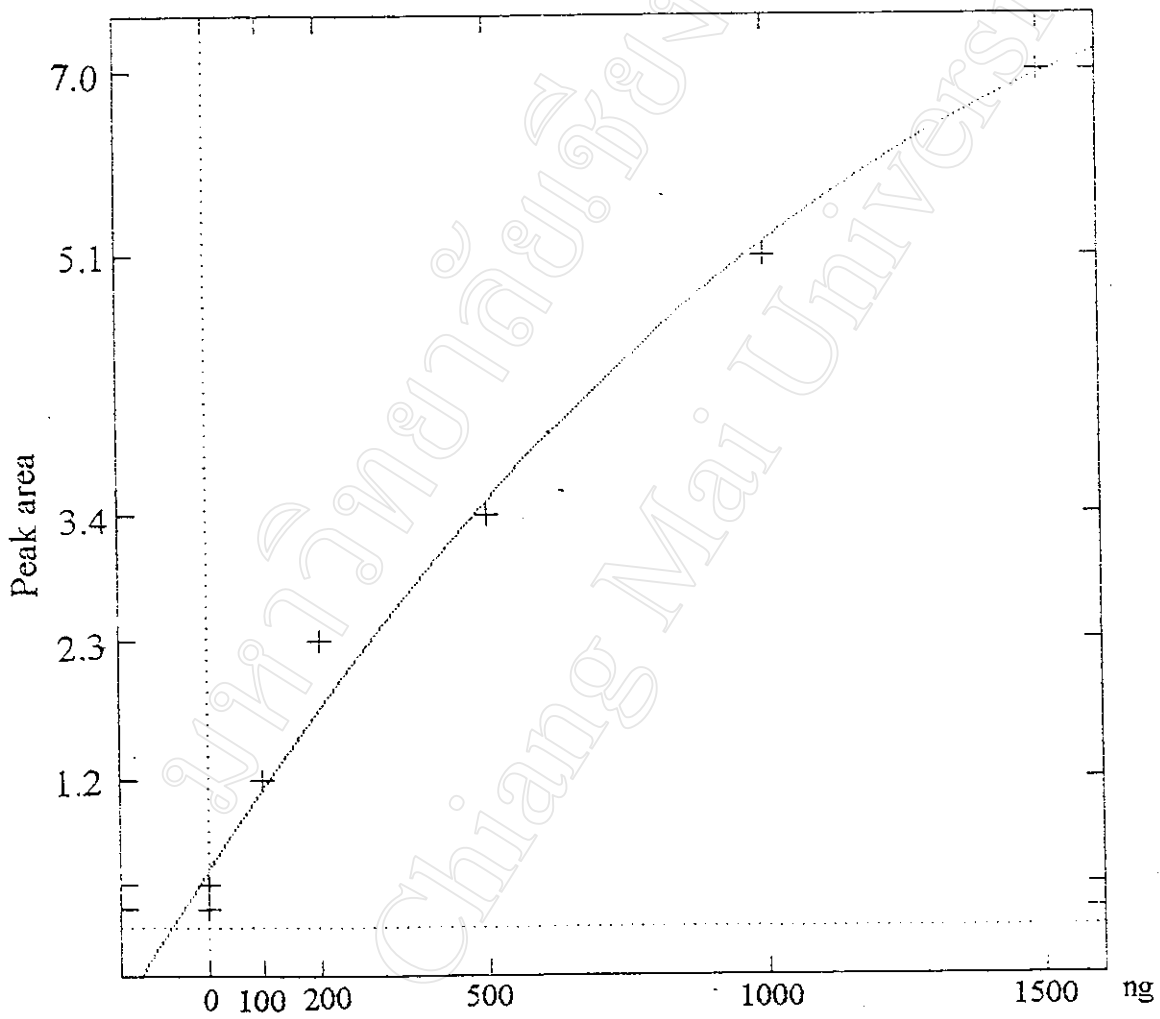


Figure 4.1 Relationship between peak area and mass of lead