

Lampiran 1. Hasil Penentuan Tekstur Tanah

Kode Sampel	Berat (gram)		
	Pasir	Debu	Liat
A _{1.1}	3,878	1,022	5,100
A _{1.2}	2,955	1,174	5,640
A _{1.3}	2,613	1,120	5,186
A _{2.1}	3,670	0,935	5,174
A _{2.2}	3,108	1,228	5,552
A _{2.3}	2,891	1,191	5,547
A _{3.1}	3,835	0,954	5,039
A _{3.2}	3,132	1,167	5,619
A _{3.3}	2,510	1,065	4,954

Kadar pasir, debu dan liat dihitung dengan cara sebagai berikut :

$$\% \text{ Fraksi Pasir} = \frac{A}{A + X + Y} \times 100 \%$$

$$\% \text{ Fraksi Debu} = \frac{X}{A + X + Y} \times 100 \%$$

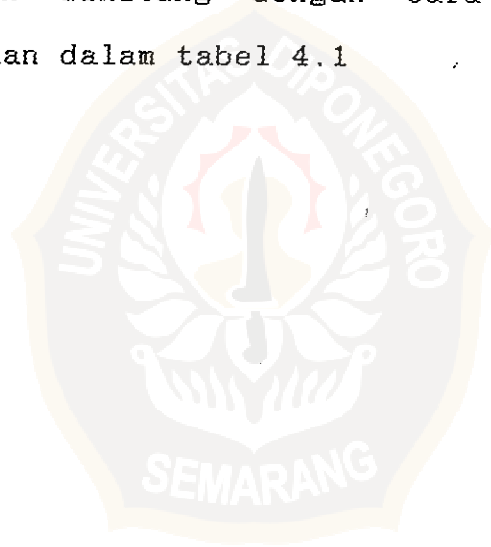
$$\% \text{ Fraksi Liat} = \frac{Y}{A + X + Y} \times 100 \%$$

dimana :

- A = Berat fraksi pasir
- X = Berat fraksi Debu
- Y = Berat fraksi liat

$$\begin{aligned} \% \text{ Fraksi Pasir } A_{1.1} &= \frac{3,878}{3,878 + 1,022 + 5,100} \times 100 \% \\ &= 38,78 \% \end{aligned}$$

Fraksi yang lain dihitung dengan cara yang sama dan hasilnya disajikan dalam tabel 4.1



Lampiran 2. Hasil Penentuan Kadar Air

Kode Sampel	Berat (gram)		
	Basah + Cawan	Kering + Cawan	Basah
A _{1.1}	27,9406	25,3200	20
A _{1.2}	27,9406	24,8928	20
A _{1.3}	27,9406	24,7360	20
A _{2.1}	27,9406	26,6985	20
A _{2.2}	27,9406	25,2724	20
A _{2.3}	27,9406	25,0781	20
A _{3.1}	27,9406	25,3403	20
A _{3.2}	27,9406	24,9544	20
A _{3.3}	27,9406	24,9402	20

Kadar air dihiung dengan cara sebagai berikut :

$$\text{Kadar Air} = \frac{A - B}{C} \times 100 \%$$

dimana :

- A = Berat cawan + sampel basah
- B = Berat cawan + sampel kering
- C = Berat sampel basah

$$\begin{aligned} \text{Kadar Air } A_{1.1} &= \frac{27.9406 - 25,3200}{20} \times 100 \% \\ &= 13,1029 \end{aligned}$$

Sampel-sampel yang lain dihitung dengan cara yang sama dan hasilnya disajikan pada tabel 4.2



Lampiran 3. Hasil Penentuan Kadar Organik

Kode Sampel	Berat (gram)		
	Kering + Cawan	Abu + Cawan	Kering
A _{1.1}	12,9406	9,0253	5
A _{1.2}	12,9406	9,3691	5
A _{1.3}	12,9406	9,5006	5
A _{2.1}	12,9406	8,9196	5
A _{2.2}	12,9406	9,1601	5
A _{2.3}	12,9406	9,2681	5
A _{3.1}	12,9406	9,5626	5
A _{3.2}	12,9406	9,8931	5
A _{3.3}	12,9406	9,9251	5

Kadar Organik dihitung dengan cara sebagai berikut :

$$\text{Kadar Organik} = \frac{P - Q}{R} \times 100 \%$$

dimana :

P = Berat cawan + sampel kering

Q = Berat cawan + abu

R = Berat sampel kering

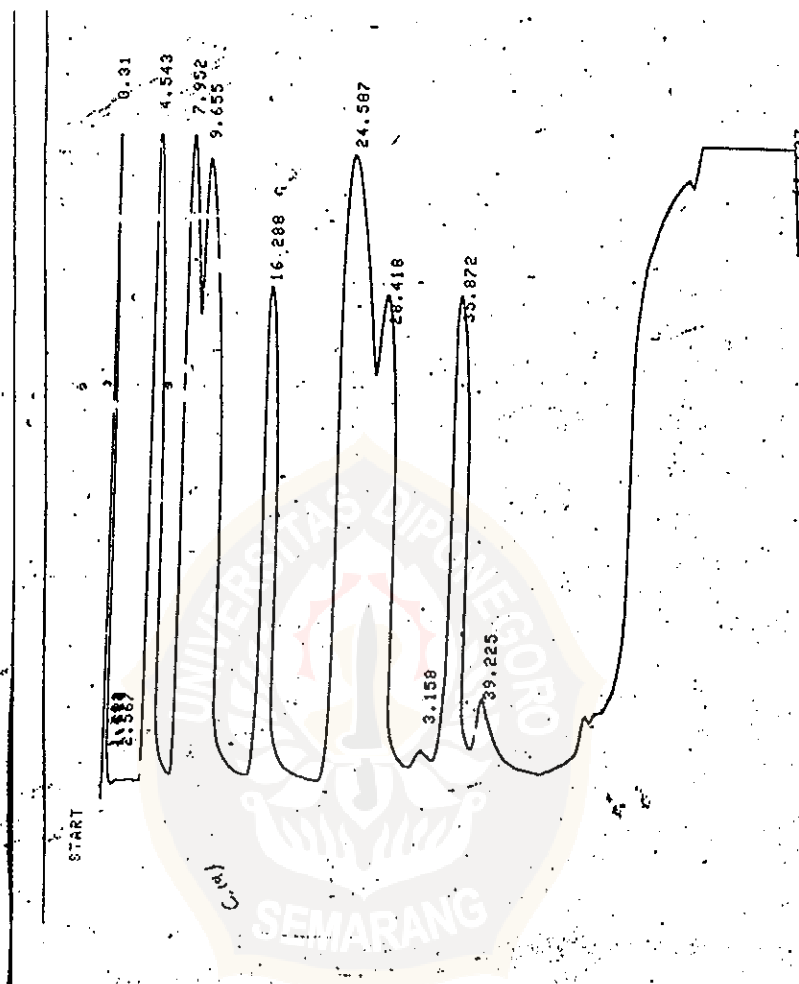
$$\% \text{ Kadar organik } A_{1.1} = \frac{12,9406 - 9,0251}{5} \times 100 \%$$

= 78,31 %

Sampel-sampel yang lain dihitung dengan cara yang sama dan hasilnya disajikan pada tabel 4.2



Lampiran 4. Gambar Kromatogram Standar Campuran Beberapa Pestisida Organoklorin

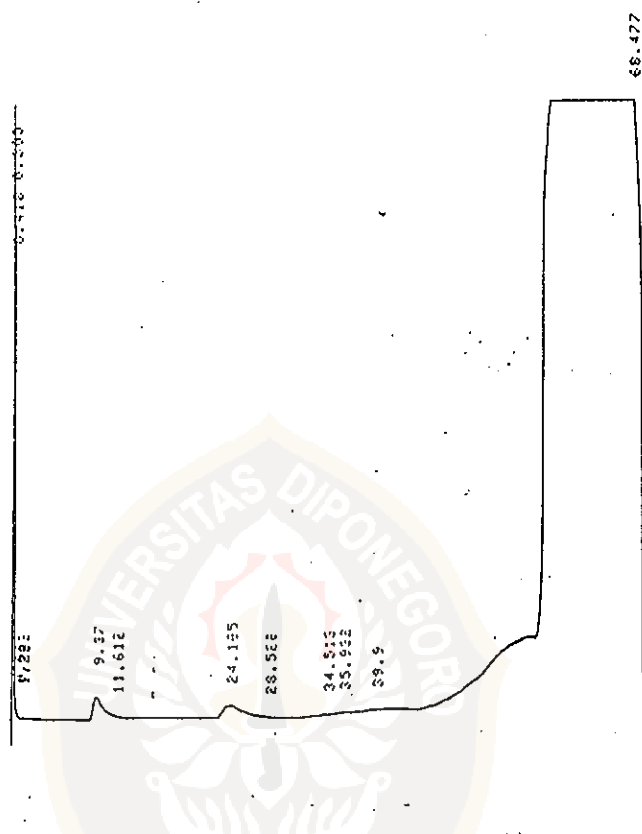


CHROMATOPAC C-R3A
 SAMPLE NO 0
 REPORT NO 3015
 FILE 0
 METHOD 41

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.31	1301157	S		2.3128	
2	4.543	4295273			7.6347	- α-GHC
3	7.952	5113699	V		9.0894	- β-GHC
4	9.655	8185309	V		14.5491	- Aldrin
5	16.288	4385618	V		7.7953	- Dieldrin
6	24.587	12205418			21.6947	- PP-DDE
7	28.418	6379160	SV		11.3908	- Endrin
8	33.158	69565	T		0.1592	- OP-DDT
9	35.872	4798267	V		8.5288	- PP-DDP
10	39.225	1001921	V		1.7809	- PP-DDT
11	68.427	8504396			15.1163	
ZERO	TOTAL	56259768			100	

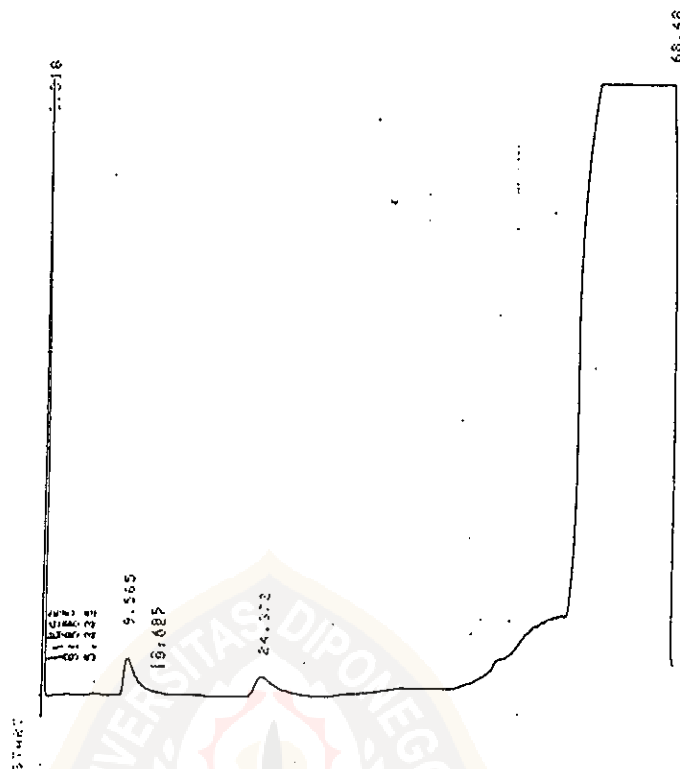
Standar
Campuran

Lampiran 5. Kromatogram Standar p,p-DDE



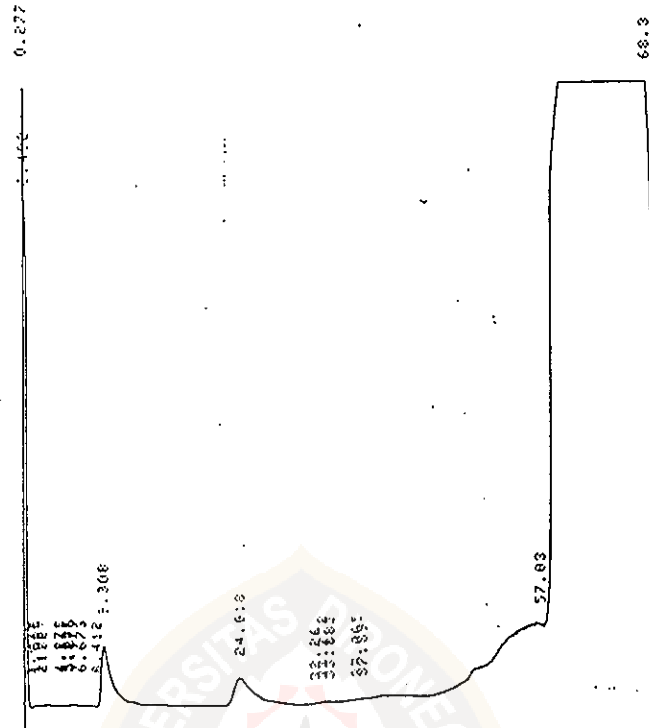
CHROMATOPAC	C-R3A	FILE	0	68		
SAMPLE NO	0	METHOD	41			
REPORT NO	3028					
PKNO	TIME	AREA	HK	IDNO	CONC	NAME
1	0.305	390825			9.2825	
2	0.418	381655	SV		9.0647	
3	9.37	176957			4.2029	
4	24.105	191397	S		4.5459	
5	68.477	3069514			72.904	p,p-DDE 23.36 ppb
TOTAL		4210348			100	
PCRO						

Kromatogram Standar p,p-DDE (23,36 ppb)



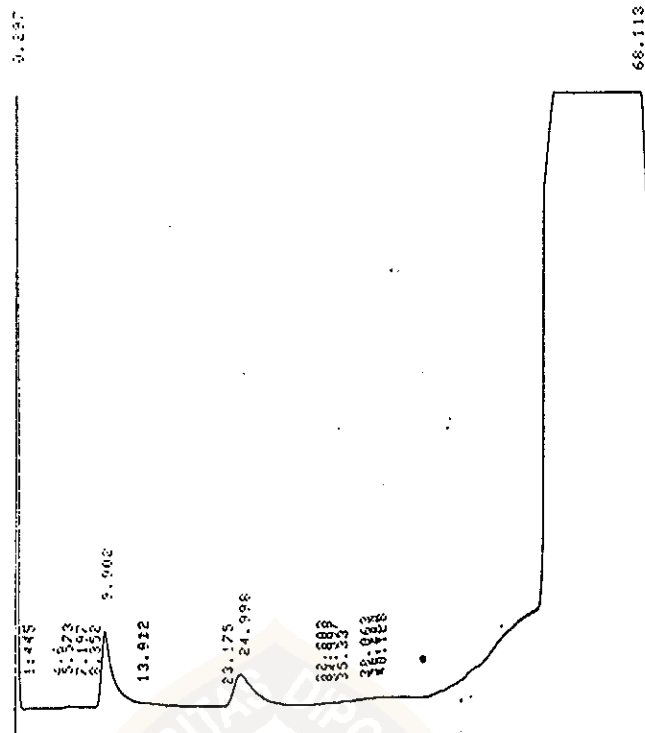
PEAK	TIME	AREA	PK	IDNO	CONC	NAME
1	0.318	994950			17.6621	
2	9.565	332880	\$		0.5274	
3	24.372	304307			6.0128	
4	68.48	3528832			69.7264	→ Std. PP-DDE 35.04 ppb
TOTAL		5060969			100	

Kromatogram Standar p,p-DDE (35,04 ppb)



PKNO	TIME	AREA	HR	IDHO	CONC	NAME
1	0.277	644212			2.5924	
2	0.492	695350	SV		2.796	
3	9.308	480396	Y		1.9317	
4	24.018	404678			1.6272	→ std. p,p-DDE 46.72 ppb
5	68.3	32644256			31.0527	
TOTAL		24969390			100	

Kromatogram Standar p,p-DDE (46,72 ppb)

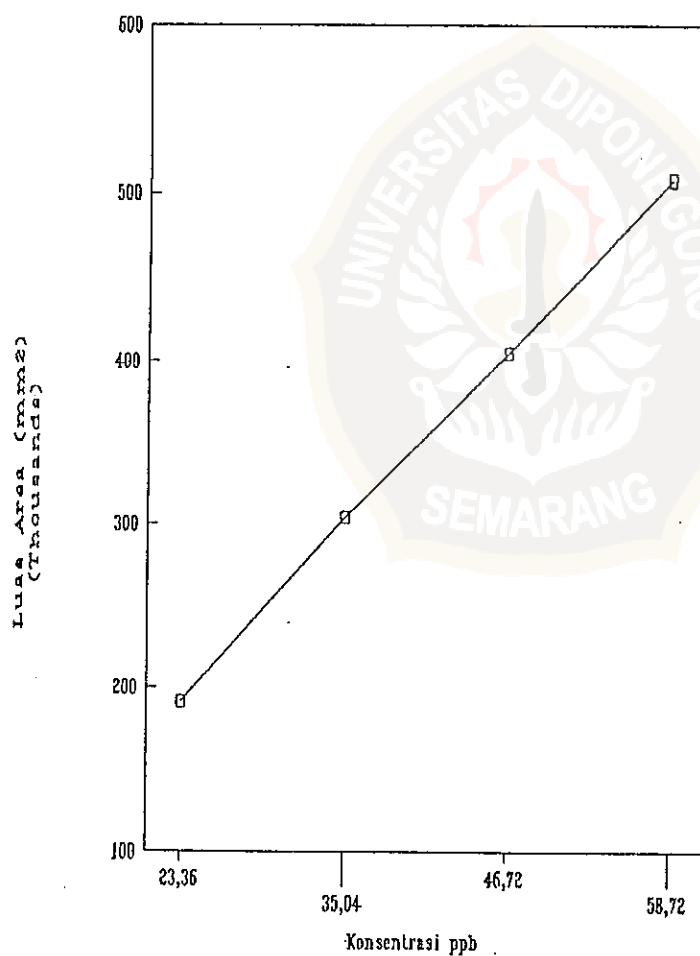


PKNO	TIME	AREA	MC	IDNO	CONC	NAME
1	0.297	1228031	S		17.8035	
2	9.902	688038	S		9.9749	
3	24.998	507837	V		7.3631	→ std. p,p-DDE 58.40 ppb
4	68.113	4473734			64.8584	
TOTAL		6897690			100	

Kromatogram Standar p,p-DDE (58,40 ppb)

Lampiran 6. Perhitungan Kurva Kalibrasi Standar p,p-DDE

Konsentrasi (ppb)	Area
23,36	191397
35,04	304307
46,72	404678
58,72	507887



Grafik 1. Standar p,p-DDE

Dari hasil kurva standar p,p-DDE didapatkan hasil perhitungan, regresi linier:

$$y = A + BX$$

dimana :

$$B = \frac{n \sum X.Y - \sum X \cdot \sum Y}{n \sum X^2 - (\sum X)^2}$$

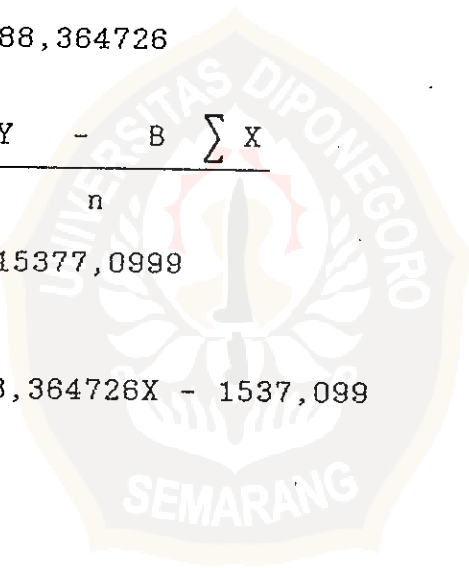
$$= 8988,364726$$

$$A = \frac{\sum Y - B \sum X}{n}$$

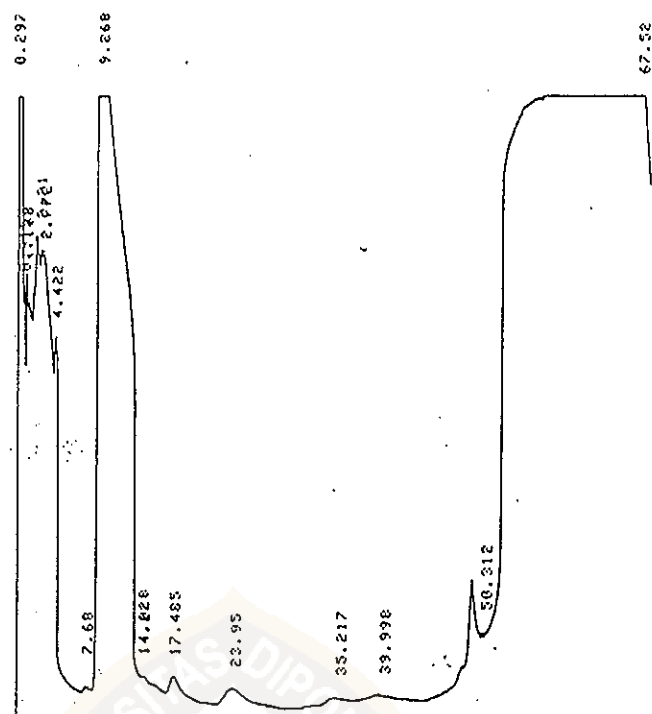
$$= -15377,0999$$

Jadi :

$$Y = 8988,364726X - 1537,099$$

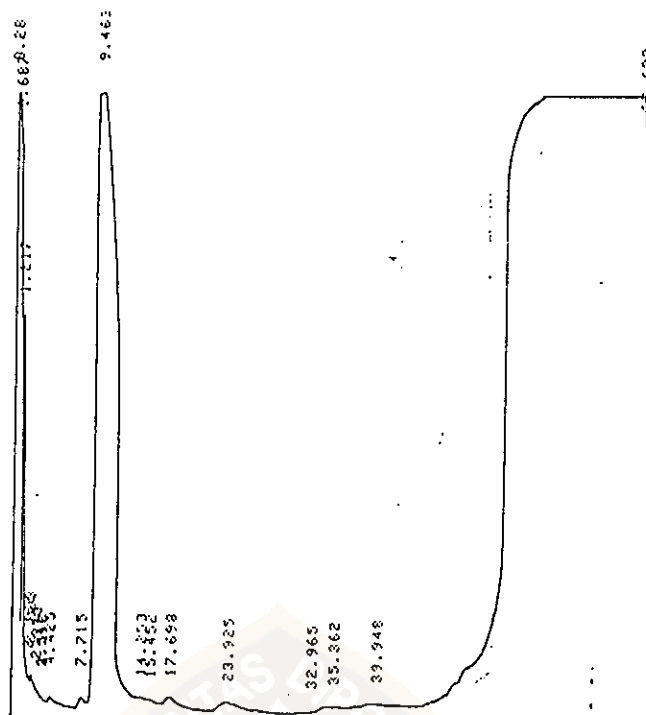


Lampiran 7. Kromatogram Hasil Analisa Sampel



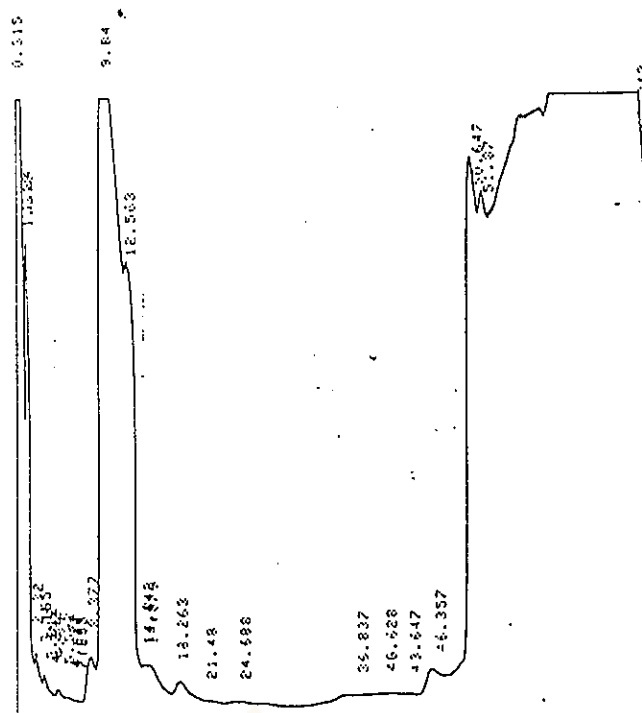
PKNO	TIME	AREA	HK	IDHO	CONC	NAME
1	0.297	2847492			6.8958	
2	0.315	286009	V		0.6926	
3	1.138	144749	V		0.3505	
4	2.21	302310			0.7333	
5	2.772	525501	V		1.2726	
6	4.422	305997			0.0063	- α -BHC
7	7.68	24932			0.0604	- β -BHC
8	9.248	14240227	SV		34.5344	- Alarim (inlcand)
9	17.485	133191	T		0.3226	- Diethylin
10	23.95	291733			0.7065	- PP-DDE
11	35.217	158996			0.385	- PP-DDO
12	39.998	213973	V		0.5102	- PP-DDT
13	67.52	21737260			52.6417	
TOTAL		41292864			100	

Kromatogram Sampel A_{1.1}



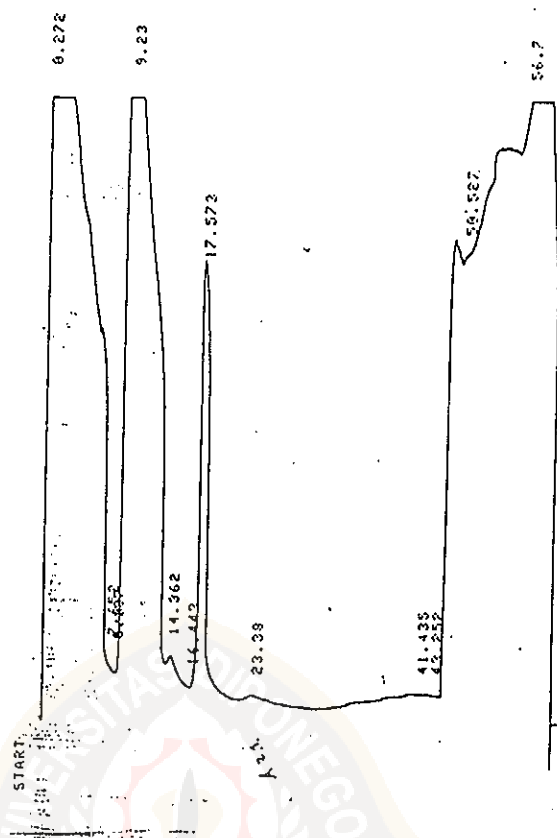
PKNO	TIME	AREA	NK	IBNO	COHC	NAME
1	0.23	1809019			7.438	
2	0.667	1228141	V		5.0524	
3	1.217	783101	SV		3.2216	
4	2.223	124093	V		0.5158	
5	3.992	27979	V		0.1151	
6	4.425	16677			0.0666	- α -BHC
7	7.215	49079			0.2919	- β -BHC
8	9.463	957397	SV		37.3039	-aldarin (Intermed)
9	17.958	69125	I		0.2844	-di'aldarin
10	23.925	162909			0.6702	-pp-ppE
11	35.362	76481	V		0.3146	-pp-ppP
12	39.948	146841	V		0.6041	-pp-ppT
13	67.633	10241248			42.1314	
TOTAL		24307882			100	

Kromatogram Sampel A_{1,2}



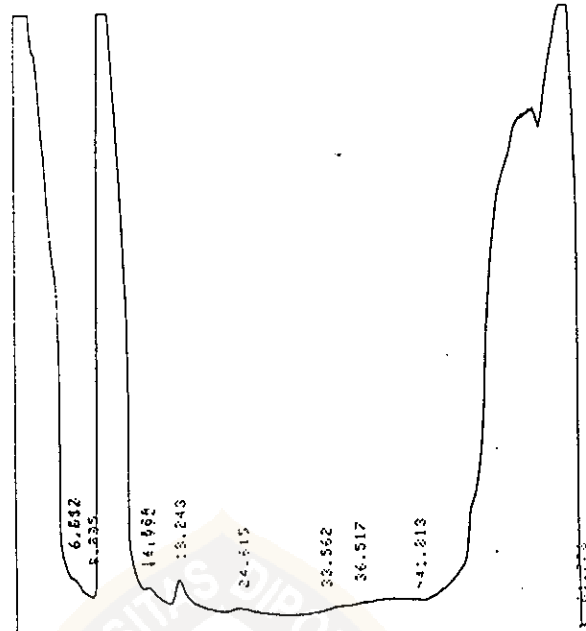
NO	TIME	AREA	RF	AREA	CONC	NAME
1	0.315	4236663			9.3756	
2	1.24	253634	V		0.5614	
3	1.318	1242071	V		2.7487	
4	2.32	250061	V		0.5334	
5	3.165	170709	V		0.3778	
6	3.812	61354	V		0.1358	
7	4.66	146351	V		0.3233	- BHC
8	5.592	100544	V		0.2225	
9	6.427	35928	V		0.053	
10	6.788	13391	V		0.0296	
11	7.037	24228	V		0.0536	- BHC
12	7.205	16575	V		0.0367	
13	8.377	350144	V		0.7749	
14	9.84	16475161	V		23.1812	- Aldrin (Internal)
15	12.563	3368950	V		7.4554	
16	14.3	97252	V		0.2152	
17	14.442	70939	V		0.157	
18	14.873	452372	V		1.0011	- dieldrin
19	18.263	292733	V		0.6479	
20	24.688	17461			0.0386	- pp-PPE
21	36.837	102600			0.227	- pp-PPO
22	40.628	128031	V		0.2833	- pp-DOT
23	46.357	123931			0.2743	
24	50.647	2635294			5.8318	
25	51.037	2101960	V		4.8284	
26	68.243	18351768	V		40.6122	
	TOTAL	45188268			100	

Kromatogram Sampel A_{1.3}



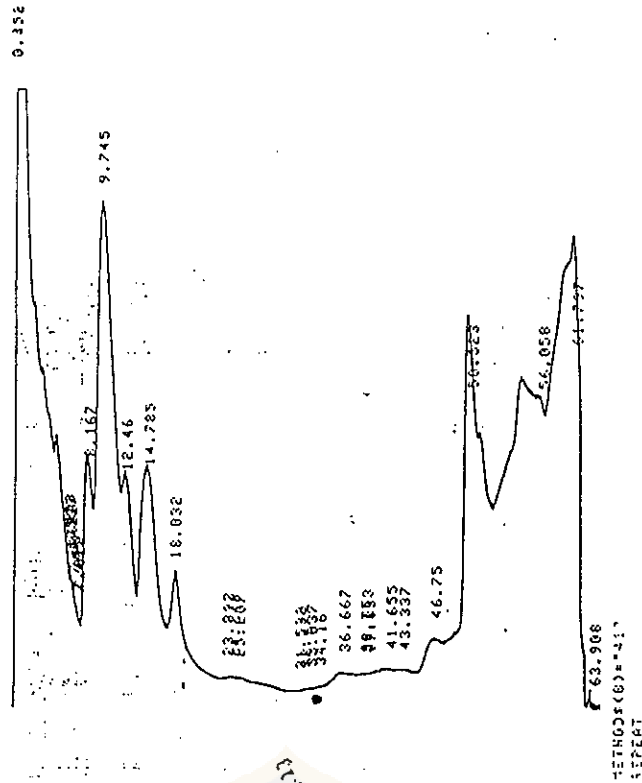
PKNO	TIME	AREA	HEIGHT	W	AREA%	CONC	NAME
1	7.652	955688	254		12.9847		
2	8.187	443			0.0003		
3	8.3	254			0.0006		
4	9.23	1465752		V	0.0004		
5	14.362	79353		SV	19.9177		
6	16.443	665		T	0.1078		
7	17.573	2510780		V	0.0097		Dieldrin
8	23.38	87232			3.4114		
9	41.435	806591			0.1193		p,p'-DDE
10	43.252	310780		V	1.0959		
11	50.527	5236726		V	0.4223		
12	56.7	23802850		V	7.1151		
13	61.615	16517202		V	32.3406		
14	TOTAL	73606448			100.0000		

Kromatogram Sampel A_{2.1}



PKNO	TIME	AREA	HK	IDNO	CONC	NAME	
1	0.415	3557135			19.191		
2	6.642	193			0.0002		
3	6.835	268	V		0.0006		
4	6.668	221			0.0003		
5	6.732	142			0.0001		
6	6.675	54			0.0004		
7	6.79	201			0.0008		
8	14.532	357			0.0004		
9	14.668	1532	V		0.0499		
10	14.992	22258	V		0.4825	Dieldrin	
11	18.243	215127			0.0094	Pp-DPE	
12	24.615	403327			0.0193		
13	32.562	158393	V		0.3552	Pp-000	
14	36.517	691157	V		1.5501		
15	41.813	34992916	V		78.2538		
TOTAL					44599260	100	

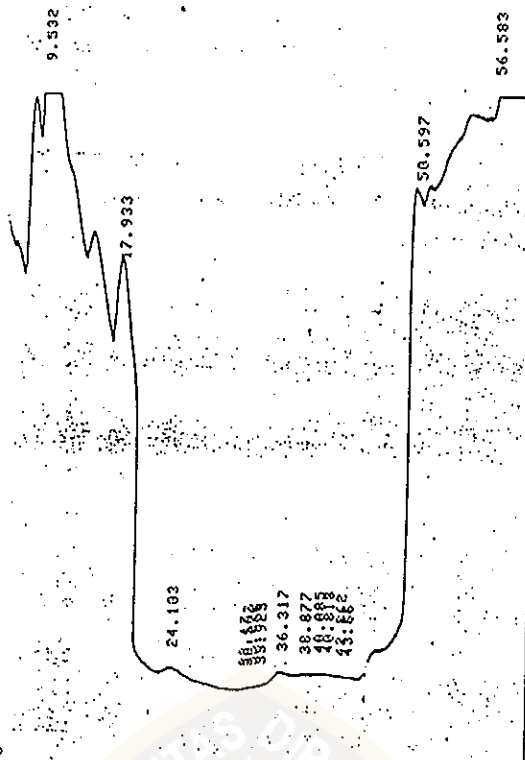
Kromatogram Sampel A_{2.2}



CHROMATOPAC C-R3A FILE 0
 SAMPLE NO 0 METHOD 41
 REPORT NO 2990

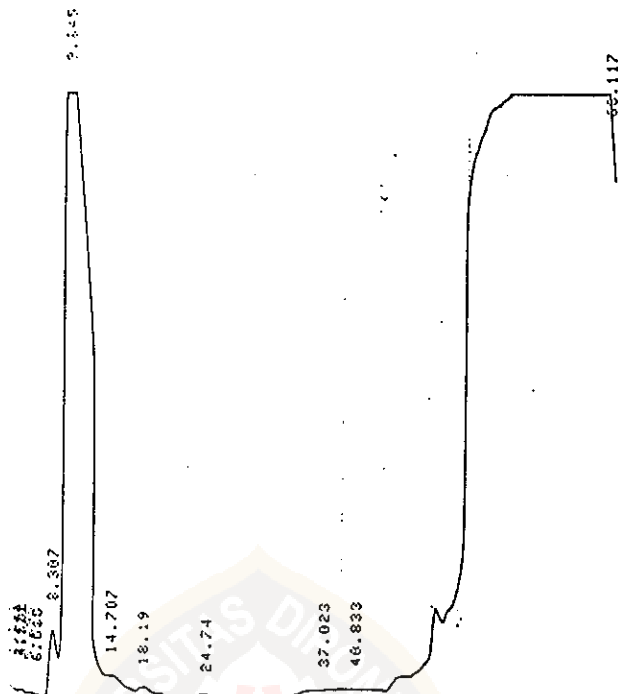
PKNO	TIME	AREA	HK	IDNO	CONC	NAME
1	0.292	943931			1.971	
2	0.393	701054	V		1.4639	
3	0.472	9146723	V		17.0113	
4	6.433	582			0.0012	
5	6.473	675			0.0014	
6	6.588	2155			0.0045	
7	6.667	198			0.0004	
8	6.713	146			0.0003	
9	7.01	291			0.0006	
10	7.398	287			0.0006	
11	7.43	606			0.0013	
12	7.495	192			0.0004	
13	7.522	287			0.0006	
14	8.167	968852			2.0664	
15	9.745	9449551	V		11.3795	
16	12.46	1175612	V		2.4548	
17	14.785	1701386	V		3.678	
18	18.032	379104			0.7916	- Dieldrin
19	23.313	3459			0.0072	
20	23.992	673	V		0.0014	
21	24.245	13409	V		0.0322	- p,p'-DDE
22	25.207	5696	V		0.0119	
23	31.532	3017			0.0063	
24	32.477	5257	V		0.012	
25	33.037	12901	V		0.0257	
26	34.16	27000	V		0.0564	
27	36.667	358332	V		0.7402	- p,p'-DDD
28	38.75	135112	V		0.2821	
29	39.143	17533	V		0.0366	
30	39.33	35662	V		0.0745	
31	41.655	491690	V		1.0267	
32	43.337	339022	V		0.7079	
33	46.75	982113	V		1.842	
34	50.323	6319210	V		12.1952	
35	50.323	9864931	V		20.5322	
36	61.757	9832912	V		20.5322	
37	63.908	16509			0.0345	
TOTAL		47000112			100	

Kromatogram Sampel A_{2.3}



PKNO	TIME	AREA	HK	IDNO	CONC	NAME
1	0.273	840575			1.1749	
2	0.367	14651524	V		20.4287	
3	9.532	2450085			3.4245	
4	17.933	2815406			3.9351	
5	24.103	87926			0.1229	- p.p - ppe
6	32.17	2913			0.0041	
7	32.597	5074	V		0.0071	
8	33.872	10144	V		0.0142	
9	33.555	11447	V		0.016	
10	33.925	16347	V		0.0288	
11	36.317	301053	V		0.5326	- p.p - p.p
12	38.877	166933	V		0.2333	
13	40.085	158267	V		0.2212	- p.p - p.p
14	40.818	319555	V		0.4466	
15	42.862	118252	V		0.1633	
16	43.66	205516	V		0.2873	
17	50.597	6114588	V		8.5465	
18	56.583	23760516	V		33.2105	
19	61.65	19429134	V		27.1564	
	TOTAL	71545256			100	

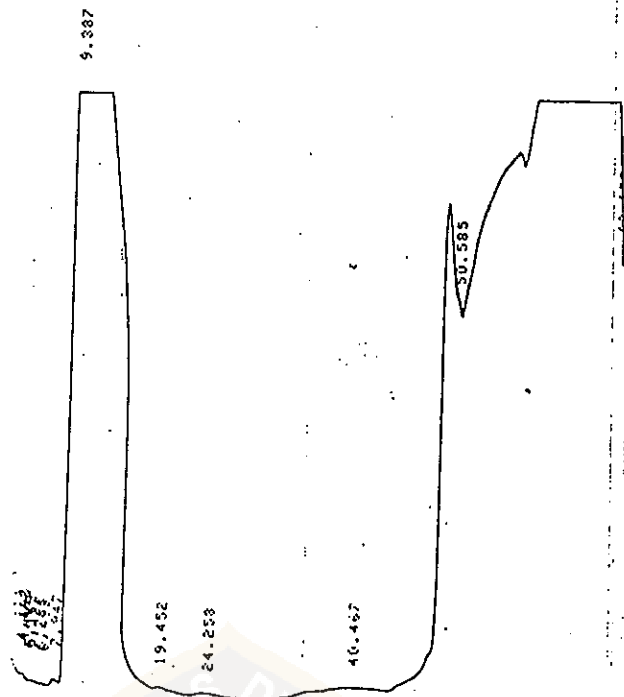
Kromatogram Sampel A_{3.1}



PKNO	TIME	AREA	NK	IDNO	CONC	NAME
1	0.343	5657104			17.5875	
2	1.327	1485128	V		4.6171	
3	2.303	83165	V		0.2586	
4	2.617	39454	V		0.1227	
5	2.885	23807	V		0.0734	
6	3.088	40394	V		0.1256	<i>α-BHC</i>
7	3.307	354174			1.1011	<i>β-BHC</i>
8	7.045	12040401	SV		37.4327	<i>Aladin (Intermed)</i>
9	14.707	24750	T		0.077	
10	18.19	39966	T		0.1243	<i>Di-aldin</i>
11	24.74	54965			0.1709	<i>pp-PPP</i>
12	37.023	104757			0.3257	<i>pp-PPP</i>
13	40.833	154745	V		0.4811	<i>pp-PPP</i>
14	68.117	12062854			37.5025	
TOTAL		32165464			100	

ZERO

Kromatogram Sampel A_{3.2}



CHROMATOPAC C-R3A
 SAMPLE NO 0
 REPORT NO 3021

FILE METHOD 0 41

PKNO	TIME	AREA	HK	LOBO	CONC	NAME
1	0.323	2358840			3.3785	
2	0.933	351500	V		0.8015	
3	1.205	407468	V		0.9291	
4	2.043	10561	V		0.0379	
5	2.09	10989	V		0.0251	
6	2.14	115658	V		2.7637	
7	2.533	13134	V		0.0299	
8	2.597	21682	V		0.0494	
9	2.73	12980	V		0.0296	
10	2.845	34897	V		0.0796	
11	2.902	26251	V		0.0599	
12	2.997	106830	V		0.426	
13	4.263	19302	V		0.044	
14	4.518	20417	V		0.0466 - d-BHC	
15	7.947	34350			0.0783 - B-BHC	
16	9.387	26041904	SV		59.3795 - Aldrin (Inkand)	
17	19.452	17747	T		0.0485 - dieldrin	
18	24.258	54711			0.1248 - pp-DDE	
19	40.467	314393			0.719 - pp-DDT	
20	50.585	1050892			2.3962	
21	68.275	12745721	V		29.0622	
TOTAL		43856720			100	

2CRV

Kromatogram Sampel A_{3.3}

Lampiran 8. Perhitungan Kadar p,p-DDE pada Sampel

Kode Sampel	Area (Y)	Banyaknya Pengenceran
A _{1.1}	291733	3
A _{1.2}	162909	3
A _{1.3}	17461	10
A _{2.1}	27835	10
A _{2.2}	40325	10
A _{2.3}	15409	10
A _{3.1}	87926	10
A _{3.2}	54965	10
A _{3.3}	54711	10

$$\text{Kadar p,p-DDE (X)} = \frac{Y + 15377,0999}{8988,364726} \text{ ppb}$$

$$\text{Kadar } A_{1.1} = \frac{291733 + 15377,0999}{8988,364726}$$

$$= 32,629 \text{ ppb}$$

$$\text{Kadar } A_{1.2} = \frac{162909 + 15377,0999}{8988,364726}$$

$$= 19,835 \text{ ppb}$$

$$\begin{aligned} \text{Kadar } A_{1.3} &= \frac{17461 + 15377,0999}{8988,364726} \\ &= 3,653 \text{ ppb} \end{aligned}$$

$$\begin{aligned} \text{Kadar } A_{2.1} &= \frac{87832 + 15377,0999}{8988,364726} \\ &= 9,943 \text{ ppb} \end{aligned}$$

$$\begin{aligned} \text{Kadar } A_{2.2} &= \frac{40325 + 15377,0999}{8988,364726} \\ &= 4,657 \text{ ppb} \end{aligned}$$

$$\begin{aligned} \text{Kadar } A_{2.3} &= \frac{15409 + 15377,0999}{8988,364726} \\ &= 3,425 \text{ ppb} \end{aligned}$$

$$\begin{aligned} \text{Kadar } A_{3.1} &= \frac{87926 + 15377,0999}{8988,364726} \\ &= 9,953 \text{ ppb} \end{aligned}$$

$$\begin{aligned} \text{Kadar } A_{3.2} &= \frac{54965 + 15377,0999}{8988,364726} \\ &= 6,286 \text{ ppb} \end{aligned}$$

$$\text{Kadar } A_{3.3} = \frac{54711 + 15377,0998}{8988,364726}$$

Jadi kandungan p,p-DDE dalam sampel sebenarnya :

$$\frac{\text{Kadar} \times \text{Pengenceran} \times \text{Volume akhir larutan}}{\text{Berat Sampel}} \quad \text{ppb}$$

$$A_{1.1} = \frac{32,628 \times 3 \times 5}{25}$$

$$= 19,577 \text{ ppb}$$

Sampel-sampel lain dihitung dengan cara yang sama dan hasilnya disajikan dalam tabel 4.5

