LAMPIRAN

Lampiran 1. Perhitungan Preparasi Sampel

a. Pembuatan Larutan Stok 1000 ppm Timbal

Mr $Pb(NO_3)_2$ = 331,2 g/mol

Ar Pb = 207,19 g/mol

$$= \frac{\text{Mr } Pb(NO_3)_2}{\text{Ar Pb}} \times 1000 \text{ mg}$$

$$= \frac{331{,}29 \text{ g/mol}}{207{,}19 \text{ g/mol}} \times 1000 \text{ mg}$$

= 1598,97 mg

= 1,59897 gram

Jadi 1,59897 gram Pb $(NO_3)_2$ dilarutkan dalam 1000 ml larutan aquades dan menjadi larutan baku Pb 1000 mg/L

b. Pembuatan Larutan Stok 1000 ppm Kadmium

Mr Cd $(NO_3)_2$ = 236,4 g/mol

Ar Cd = 112,40 g/mol

$$= \frac{\text{Mr Cd } (NO_3)_2}{\text{Ar Cd}} \times 1000 \text{ mg}$$

$$= \frac{236{,}4 \text{ g/mol}}{112{,}40 \text{ g/mol}} \times 1000 \text{ mg}$$

= 2103,20 mg (2,10320 gram)

Jadi 2,10320 gram Cd $(NO_3)_2$ dilakukan dalam 1000 ml larutan aquadest dan menjadi larutan baku Cd 1000 mg/L.

Lampiran 2. Pembuatan Kurva Standar Timbal

a. Pembuatan Larutan Timbal 10 ppm dari 1000 ppm

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 1000$ mg/L = 10 mg/L x 100 mL

V_1 = $\frac{10 \text{ mg/L} \times 100 \text{ mL}}{1000 \text{ mg/L}}$

V_1 = 1 mL

Jadi larutan standar 10 mg/L dibuat dengan 1 mL larutan stok 1000 mg/L yang diencerkan dalam labu takar 100 mL dengan HNO_3 0,5 M.

b. Pembuatan Larutan Kadmium 10 ppm dari 1000 ppm

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 1000 \text{ mg/L} = 10 \text{ mg/L} \times 100 \text{ mL}$

$V_1 = \frac{10 \text{ mg/L} \times 100 \text{ mL}}{1000 \text{ mg/L}}$

V_1 = 1 mL

Jadi larutan standar 10 mg/L dibuat dengan 1 mL larutan stok 1000 mg/L yang diencerkan dalam labu takar 100 mL dengan HNO_3 0,5 M.

Lampiran 3. Pembuatan Larutan Standar Logam Timbal

a. Pembuatan Larutan Standar 0,1 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 0{,}1 \text{ mg/L} \times 50 \text{ mL}$

$V_1 = \frac{0{,}1 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$

V1 = 0,5 mL

Jadi larutan standar 0,1 mg/L dibuat dengan 0,5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

b. Pembuatan Larutan Standar 0,5 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 0{,}5 \text{ mg/L} \times 50 \text{ mL}$

V_1 = $\frac{0,5 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$

V_1 = 2,5 mL

Jadi larutan standar 0,5 mg/L dibuat dengan 2,5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

c. Pembuatan Larutan Standar 1,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 1,0 \text{ mg/L} \times 50 \text{ mL}$

$V_1 = \frac{1,0 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$

V_1 = 5 mL

Jadi larutan standar 1,0 mg/L dibuat dengan 5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

d. Pembuatan Larutan Standar 3,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 3,0 \text{ mg/L} \times 50 \text{ mL}$

$V_1 = \frac{3,0 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$

V_1 = 15 mL

Jadi larutan standar 3,0 mg/L dibuat dengan 15 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

e. Pembuatan Larutan Standar 4,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 4,0 \text{ mg/L} \times 50 \text{ mL}$

$V_1 = \frac{4,0 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$

V_1 = 20 mL

Jadi larutan standar 4,0 mg/L dibuat dengan 20 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

f. Pembuatan Larutan Standar 5,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 5{,}0 \text{ mg/L} \times 50 \text{ mL}$

$$V_1 = \frac{5{,}0 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$$

$V_1 = 25$ mL

Jadi larutan standar 5,0 mg/L dibuat dengan 25 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

Lampiran 4. Pembuatan Larutan Standar Logam Kadmium

a. Pembuatan Larutan Standar 0,1 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 0{,}1 \text{ mg/L} \times 50 \text{ mL}$

$$V_1 = \frac{0{,}1 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$$

$V_1 = 0{,}5$ mL

Jadi larutan standar 0,1 mg/L dibuat dengan 0,5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

b. Pembuatan Larutan Standar 0,5 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10 \text{ mg/L} = 0{,}5 \text{ mg/L} \times 50 \text{ mL}$

$$V_1 = \frac{0{,}5 \text{ mg/L} \times 50 \text{ mL}}{10 \text{ mg/L}}$$

$V_1 = 2{,}5$ mL

Jadi larutan standar 0,1 mg/L dibuat dengan 2,5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

c. Pembuatan Larutan Standar 1 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10\ mg/L = 1\ mg/L \times 50\ mL$

$V_1 = \frac{1\ mg/L \times 50\ mL}{10\ mg/L}$

$V_1 = 5\ mL$

Jadi larutan standar 0,1 mg/L dibuat dengan 5 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

d. Pembuatan Larutan Standar 2,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10\ mg/L = 2{,}0\ mg/L \times 50\ mL$

$V_1 = \frac{2{,}0\ mg/L \times 50\ mL}{10\ mg/L}$

$V_1 = 10\ mL$

Jadi larutan standar 0,1 mg/L dibuat dengan 10 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

e. Pembuatan larutan standar 5,0 mg/L

$V_1 \times M_1 = V_2 \times M_2$

$V_1 \times 10\ mg/L = 5{,}0\ mg/L \times 50\ mL$

$V_1 = \frac{5{,}0\ mg/L \times 50\ mL}{10\ mg/L}$

$V_1 = 25\ mL$

Jadi larutan standar 0,1 mg/L dibuat dengan 25 mL larutan 10 mg/L yang diencerkan dalam labu takar 50 mL dengan HNO_3 0,5 M.

Lampiran 5. Pembuatan Larutan HNO_3 0,5 M

$$M = \frac{\% \; X \; 10 \; X \; \rho}{Mr}$$

$$M = \frac{65 \text{ x } 10 \text{ x } 1{,}4 \text{ g/L}}{63 \text{ g/mol}}$$

$$= 14{,}4 \text{ M}$$

$$M_1 \text{ x } V_1 = M_2 \text{ x } V_2$$

$$14{,}4 \text{ M x } V_1 = 0{,}5 \text{ M x } 250 \text{ mL}$$

$$V_1 = \frac{0{,}5 \text{ M x } 250 \text{ mL}}{14{,}4 \text{ M}}$$

$$V_1 = 8{,}7 \text{ mL}$$

Lampiran 6. Hasil Uji LOD dan LOQ

a. Hasil Uji LOD dan LOQ Logam Timbal

Sampel	**Konsentrasi (mg/L)**	**y**	**ŷ**	**y-ŷ**	**$(y-\hat{y})^2$**
Blanko	0,00	-0,0002	0,0005	-0,0007	0,00000049
Standar 1	0,1	0.0012	0,0008	0,0004	0,00000016
Standar 2	0,5	0,0016	0,0021	-0,0005	0,00000025
Standar 3	1,0	0,0050	0,0037	0,0013	0,00000169
Standar 4	3,0	0,0100	0,0101	-0,0001	0,00000001
Standar 5	4,0	0,0126	0,0133	-0,0007	0,00000049
Standar 6	5,0	0,0169	0,0165	0,0004	0,00000016
				Jumlah	0,00000325

$$SD\,{}^{x}/_{y} = \sqrt{\Sigma\{(y-\hat{y})^2 : (n-1)\}}$$

$$= \sqrt{0{,}00000325 : (7-1)}$$

$$= 0{,}00073$$

LOD $= \frac{3\ X\ SD\ {}^{x}/_{y}}{slope}$

$= \frac{3\ X\ 0{,}00073}{0{,}00317}$

= 0,69085

LOQ $= \frac{10\ X\ SD\ {}^{x}/_{y}}{slope}$

$= \frac{10\ X\ 0{,}00073}{0{,}00317}$

= 0,00413

b. Hasil Uji LOD dan LOQ Logam Kadmium

Sampel	**Konsentrasi (mg/L)**	**Y**	**Ŷ**	**y-ŷ**	**$(y-\hat{y})^2$**
Blanko	0,00	0,0023	0,0042	-0,0019	0,00000361
Standar 1	0,1	0.0059	0,0092	-0,0033	0,00001089
Standar 2	0,5	0,0284	0,0293	-0,0009	0,00000081
Standar 3	1,0	0,0574	0,0543	0,0031	0,00000961
Standar 4	2,0	0,1103	0,1044	0,0059	0,00003481
Standar 5	5,0	0,2518	0,2546	-0,0028	0,00000784
				Jumlah	0,00006757

SD ${}^{x}/_{y}$ $= \sqrt{\Sigma\{(y-\hat{y})^2 : (n-1)\}}$

$= \sqrt{0{,}00006757 : (6-1)}$

= 0,21961

LOD $= \frac{3\ X\ SD\ {}^{x}/_{y}}{slope}$

$$= \frac{3\ X\ 0{,}00368}{0{,}05027}$$

= 0,21961

LOQ $$= \frac{10\ X\ SD\ {}^{x}/_{y}}{slope}$$

$$= \frac{10\ X\ 0{,}00368}{0{,}05027}$$

= 0,73205

Lampiran 7. Uji Akurasi Logam Timbal

a. Larutan Standar Timbal 0,1 ppm

Y	= 0,00317x + 0,00060
0,0012	= 0,00317x + 0,00060
0,0012 – 0,00060	= 0,00317x
0,0004	= 0,00317x
x	= 0,189
% recovery	$= \frac{0{,}189}{0{,}1} \times 100$
	= 189%

b. Larutan Standar Timbal 0,5 ppm

Y	= 0,00317x + 0,00060
0,0016	= 0,00317x + 0,00060
0,0016 – 0,00060	= 0,00317x
0,0013	= 0,00317x
x	= 0,315
% recovery	$= \frac{0{,}315}{0{,}5} \times 100$
	= 63%

c. Larutan Standar Timbal 1,0 ppm

Y	= 0,00317x + 0,00060

0,0050	= 0,00317x + 0,00060
0,0050 – 0,00060	= 0,00317x
0,0044	= 0,00317x
x	= 1,388
% recovery	$= \frac{1,388}{1,0} \times 100$
	= 138,8%

d. Larutan Standar Timbal 3,0 ppm

Y	= 0,00317x + 0,00060
0,0100	= 0,00317x + 0,00060
0,0100 – 0,00060	= 0,00317x
0,0094	= 0,00317x
x	= 2,965
% recovery	$= \frac{2,965}{3,0} \times 100$
	= 98,83%

e. Larutan Standar Timbal 4,0 ppm

Y	= 0,00317x + 0,00060
0,0126	= 0,00317x + 0,00060
0,0126 – 0,00060	= 0,00317x
0,012	= 0,00317x
x	= 3,789
% recovery	$= \frac{3,785}{4,0} \times 100$
	= 94,625%

f. Larutan Standar Timbal 5,0 ppm

Y	= 0,00317x + 0,00060
0,0169	= 0,00317x + 0,00060
0,0169 – 0,00060	= 0,00317x
0,0163	= 0,00317x
x	= 5,14

% recovery $= \frac{5,142}{5,0} \times 100$

= 102.84%

Lampiran 8. Uji Akurasi Logam Kadmium

a. Larutan Standar Kadmium 0,1 ppm

Y = 0,05027x + 0,00359

0,0059 = 0,05027x + 0,00359

0,0059 – 0,00359 = 0,05027x

0,00231 = 0,05027x

x = 0,046

% recovery $= \frac{0,046}{0,1} \times 100$

= 46%

b. Larutan Standar Kadmium 0,5 ppm

Y = 0,05027x + 0,00359

0,0284 = 0,05027x + 0,00359

0,0284 – 0,00359 = 0,05027x

0,02481 = 0,05027x

x = 0,493

% recovery $= \frac{0,493}{0,5} \times 100$

= 98,6%

c. Larutan Standar Kadmium 1,0 ppm

Y = 0,05027x + 0,00359

0,0574 = 0,05027x + 0,00359

0,0574 – 0,00359 = 0,05027x

0,05381 = 0,05027x

x = 1,070

% recovery $= \frac{1,070}{1,0} \times 100$

= 107%

d. Larutan Standar Kadmium 2,0 ppm

Y = 0,05027x + 0,00359

0,1103 = 0,05027x + 0,00359

0,1103 – 0,00359 = 0,05027x

0,10671 = 0,05027x

x = 2,123

% recovery $= \frac{2,123}{2,0} \times 100$

= 106,15%

e. Larutan Standar Kadmium 5,0 ppm

Y = 0,05027x + 0,00359

0,2518 = 0,05027x + 0,00359

0,2518 – 0,00359 = 0,05027x

0,24821 = 0,05027x

x = 4,937

% recovery $= \frac{4,937}{5,0} \times 100$

=98,74%

Lampiran 9. Perhitungan Kadar Logam Timbal pada Bawang Merah dan Bawang Putih

a. Perhitungan Kadar Timbal pada Bawang Merah

Diketahui: y = bx + a

y = 0,00317x + 0,00060

1. Y = 0,00317x + 0,00060

   0,0002 = 0,00317x + 0,00060

   0,0002 – 0,00060 = 0,00317x

   -0,0004 = 0,00317x

   x = -0,126 mg/L

2. Y = 0,00317x + 0,00060

   0,0001 = 0,00317x + 0,00060

   0,0001 – 0,00060 = 0,00317x

   -0,0005 = 0,00317x

   x = -0,158 mg/L

3. Y = 0,00317x + 0,00060

   -0,0001 = 0,00317x + 0,00060

   -0,0001 – 0,00060 = 0,00317x

   -0,0007 = 0,00317x

   x = -0,221 mg/L

4. Y = 0,00317x + 0,00060

   -0,0002 = 0,00317x + 0,00060

   -0,0002 – 0,00060 = 0,00317x

-0,0008 = 0,00317x

x = -0,252 mg/L

b. Perhitungan Kadar Timbal pada Bawang Putih

Diketahui: Y = bx + a

Y = 0,00317x + 0,00060

1. Y = 0,00317x + 0,00060

0,0001 = 0,00317x + 0,00060

0,0001 – 0,00060 = 0,00317x

-0,0005 = 0,00317x

x = -0,158 mg/L

2. Y = 0,00317x + 0,00060

0,0004 = 0,00317x + 0,00060

0,0004 – 0,00060 = 0,00317x

-0,0002 = 0,00317x

x = -0,063 mg/L

3. Y = 0,00317x + 0,00060

-0,0006 = 0,00317x + 0,00060

-0,0006 – 0,00060 = 0,00317x

x = -0,189 mg/L

4. Y = 0,00317x + 0,00060

0,0002 = 0,00317x + 0,00060

0,0002 – 0,00060 = 0,00317x

-0,0004 = 0,00317x

x = -0,126 mg/L

Lampiran 10. Perhitungan Kadar Logam Kadmium pada Bawang Merah dan Bawang Putih

a) Perhitungan Kadar Kadmium pada Bawang Putih

Diketahui: Y = bx + a

Y = 0,05027x + 0,00359

(1) Y = 0,05027x + 0,00359

0,0010 = 0,05027x + 0,00359

0,0010 – 0,00359 = 0,05027x

-0,00259 = 0,05027x

x = -0,05027 mg/L

(2) Y = 0,05027x + 0,00359

-0,0006 = 0,05027x + 0,00359

-0,0006 – 0,00359 = 0,05027x

-0,00419 = 0,05027x

x = -0,083 mg/L

(3) Y = 0,05027x + 0,00359

0,0009 = 0,05027x + 0,00359

0,0009 – 0,00359 = 0,05027x

-0,00269 = 0,05027x

x = -0,053 mg/L

(4) Y = 0,05027x + 0,00359

0,0021 = 0,05027x + 0,00359

0,0021 – 0,00359 = 0,05027x

-0,00149 = 0,05027x

x = -0,029 mg/L

b) Perhitungan Kadar Kadmium pada Bawang Merah

Diketahui: Y = bx + a

Y = 0,05027x + 0,00359

(1) Y = 0,05027x + 0,00359

0,0034 = 0,05027x + 0,00359

0,0034 – 0,00359 = 0,05027x

-0,00019 = 0,05027x

x = 0,004 mg/L

(2) Y = 0,05027x + 0,00359

0,0030 = 0,05027x + 0,00359

0,0030 – 0,00359 = 0,05027x

-0,00059 = 0,05027x

x = -0,012 mg/L

(3) Y = 0,05027x + 0,00359

0,0004 = 0,05027x – 0,00359

0,0004 – 0,00359 = 0,05027x

-0,00319 = 0,05027x

x = -0,063 mg/L

(4) Y = 0,05027x + 0,00359

-0,0010 = 0,05027x + 0,00359

-0,0010 – 0,00359 = 0,05027x

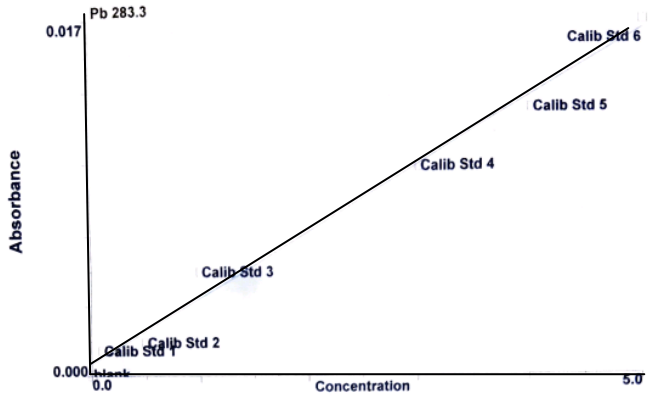
-0,00459 = 0,05027x

x = -0,091 mg/L

Lampiran 11. Kurva Larutan Standar Timbal

Edit Calibration

Result:



Calibration Curve Slope: 0.00317
Calibration Curve Intercept: 0.00060
Calibration Curve Correlation Coefficient: 0.994035
Calibration Curve Type: Linear, Calculated Intercept

Std #	Standard ID	Entered Conc.	Calculated Conc.	Action
Blank	blank	0	-0.191	Include
1	Calib Std 1	0.1	0.195	Include
2	Calib Std 2	0.5	0.318	Include
3	Calib Std 3	1.0	1.401	Include
4	Calib Std 4	3.0	2.952	Include
5	Calib Std 5	4.0	3.797	Include
6	Calib Std 6	5.0	5.127	Include

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Lampiran 12. Absorbansi Kalibrasi Larutan Standar Timbal

Seq. No.	87	AS Loc:	1		Date:	2018/07/11		
Sample ID:	blank							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	-0.0002	[0.00]		mg/L				11:30:15.00
Mean:	-0.0002	[0.00]		mg/L				

Seq. No.	88	AS Loc:	2		Date:	2018/07/11		
Sample ID:	Calib Std 1							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0012	[0.1]		mg/L				11:30:32.00
Mean:	0.0012	[0.1]		mg/L				

Seq. No.	89	AS Loc:	3		Date:	2018/07/11		
Sample ID:	Calib Std 2							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0016	[0.5]		mg/L				11:30:45.00
Mean:	0.0016	[0.5]		mg/L				

Seq. No.	90	AS Loc:	4		Date:	2018/07/11		
Sample ID:	Calib Std 3							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0050	[1.0]		mg/L				11:31:00.00
Mean:	0.0050	[1.0]		mg/L				

Seq. No.	91	AS Loc:	5	Date:	2018/07/11			
Sample ID:	Calib Std 4							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0100	[3.0]		mg/L				11:31:19.00
Mean:	0.0100	[3.0]		mg/L				

Seq. No.	92	AS Loc:	6	Date:	2018/07/11			
Sample ID:	Calib Std 5							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0126	[4.0]		mg/L				11:31:36.00
Mean:	0.0126	[4.0]		mg/L				

Seq. No.	94	AS Loc:	7	Date:	2018/07/11			
Sample ID:	Calib Std 6							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0169	[5.0]		mg/L				11:32:02.00
Mean:	0.0169	[5.0]		mg/L				

Seq. No.	99	AS Loc:		Date:	2018/07/11			
Sample ID:	AK1 669-1							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0000	-0.195		mg/L	-0.195	mg/L		11:33:47.00
Mean:	0.0000	-0.195		mg/L	-0.195	mg/L		

Lampiran 13. Hasil Absorbansi Timbal pada Bawang Merah

Seq. No.	118	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-1							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0002	-0.141		mg/L	-0.141	mg/L		11:37:29.00
Mean:	0.0002	-0.141		mg/L	-0.141	mg/L		

Seq. No.	119	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-2							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0001	-0.170		mg/L	-0.170	mg/L		11:37:35
Mean:	0.0001	-0.170		mg/L	-0.170	mg/L		

Seq. No.	120	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-3							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	-0.0001	-0.217		mg/L	-0.217	mg/L		11:37:42.00
Mean:	-0.0001	-0.217		mg/L	-0.217	mg/L		

Time	121	AS Loc:			Date: 2018/07/11			
e ID:	AK1 627-4							
alyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	-0.0002	-0.244		mg/L	-0.244	mg/L		11:37:49.00
Mean:	-0.0002	-0.244		mg/L	-0.244	mg/L		

Lampiran 14. Hasil Absorbansi Timbal pada Bawang Putih

Seq. No.	122	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 626-1							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0001	-0.159		mg/L	-0.159	mg/L		11:38:08.00
Mean:	0.0001	-0.159		mg/L	-0.159	mg/L		

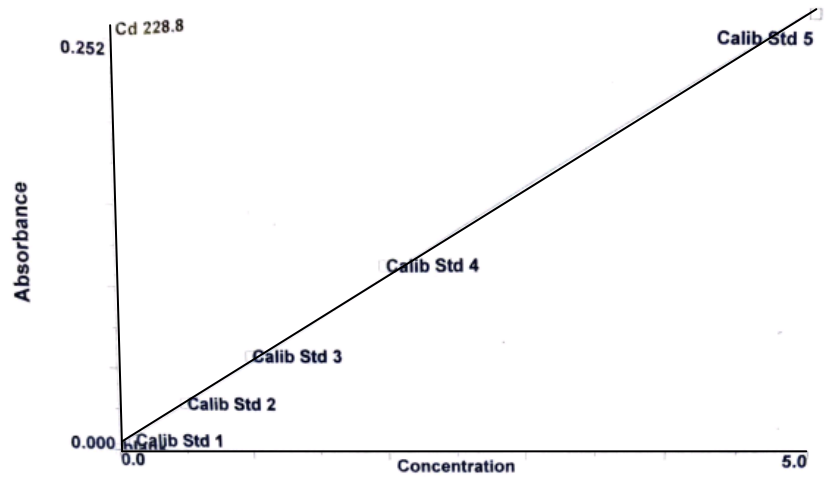
Seq. No.	123	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 626-2							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0004	-0.056		mg/L	-0.056	mg/L		11:38:15.00
Mean:	0.0004	-0.056		mg/L	-0.056	mg/L		

Seq. No.	124	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 626-3							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Pb 283.3								
	0.0000	-0.176		mg/L	-0.176	mg/L		11:38:22.00
Mean:	0.0000	-0.176		mg/L	-0.176	mg/L		

Seq. No.	125	AS Loc:			Conc (Sample)	Std. Dev.	%RSD:	Time
Sample ID:	AK1 626-4							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.					
Pb 283.3								
	0.0002	-0.138		mg/L	-0.138	mg/L		11:38:28.00
Mean:	0.0002	-0.138		mg/L	-0.138	mg/L		

Lampiran 15. Kurva Larutan Standar Kadmium

Result:



Calibration Curve Slope: 0.05027
Calibration Curve Intercept: 0.00359
Calibration Curve Correlation Coefficient: 0.999112
Calibration Curve Type: Linear, Calculated Intercept

Std #	Standard ID	Entered Conc.	Calculated Conc.	Action
Blank	blank	0	-0.071	Include
1	Calib Std 1	0.1	0.046	Include
2	Calib Std 2	0.5	0.493	Include
3	Calib Std 3	1.0	1.071	Include
4	Calib Std 4	2.0	2.123	Include
5	Calib Std 5	5.0	4.939	Include

18-Jul-18 1:54:29 PM

Lampiran 16. Absorbansi Kalibrasi Larutan Standar Kadmium

Seq. No.	2	AS Loc:	1	Date:	2018/07/11		
Sample ID:	blank						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8							
	0.0023	[0.00]	mg/L				10:43:02.00
Mean:	0.0023	[0.00]	mg/L				

Seq. No.	3	AS Loc:	2	Date:	2018/07/11		
Sample ID:	Calib Std 1						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8							
	0.0059	[0.1]	mg/L				10:43:24.00
Mean:	0.0059	[0.1]	mg/L				

Seq. No.	4	AS Loc:	3	Date:	2018/07/11		
Sample ID:	Calib Std 2						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8							
	0.0284	[0.5]	mg/L				10:43:35.00
Mean:	0.0284	[0.5]	mg/L				

Seq. No.	5	AS Loc:	4	Date:	2018/07/11		
Sample ID:	Calib Std 3						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8							
	0.0574	[1.0]	mg/L				10:43:50.00
Mean:	0.0574	[1.0]	mg/L				

Seq. No.	6	AS Loc:	5		Date:	2018/07/11			
Sample ID:	Calib Std 4								
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.		%RSD:	Time
Cd 228.8									
	0.1103	[2.0]		mg/L					10:44:02.00
Mean:	0.1103	[2.0]		mg/L					

Seq. No.	7	AS Loc:	6		Date:	2018/07/11			
Sample ID:	Calib Std 5								
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.		%RSD:	Time
Cd 228.8									
	0.2518	[5.0]		mg/L					10:44:14.00
Mean:	0.2518	[5.0]		mg/L					

Seq. No.	9	AS Loc:			Date:	2018/07/11			
Sample ID:	AK1 669-1								
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.		%RSD:	Time
Cd 228.8									
	0.0003	-0.065		mg/L	-0.065		mg/L		10:44:57.00
Mean:	0.0003	-0.065		mg/L	-0.065		mg/L		

Seq. No.	10	AS Loc:			Date:	2018/07/11			
Sample ID:	AK1 669-2								
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.		%RSD:	Time
Cd 228.8									
	0.0016	-0.039		mg/L	-0.039		mg/L		10:45:04.00
Mean:	0.0016	-0.039		mg/L	-0.039		mg/L		

Lampiran 17. Hasil Absorbansi Kadmium pada Bawang Merah

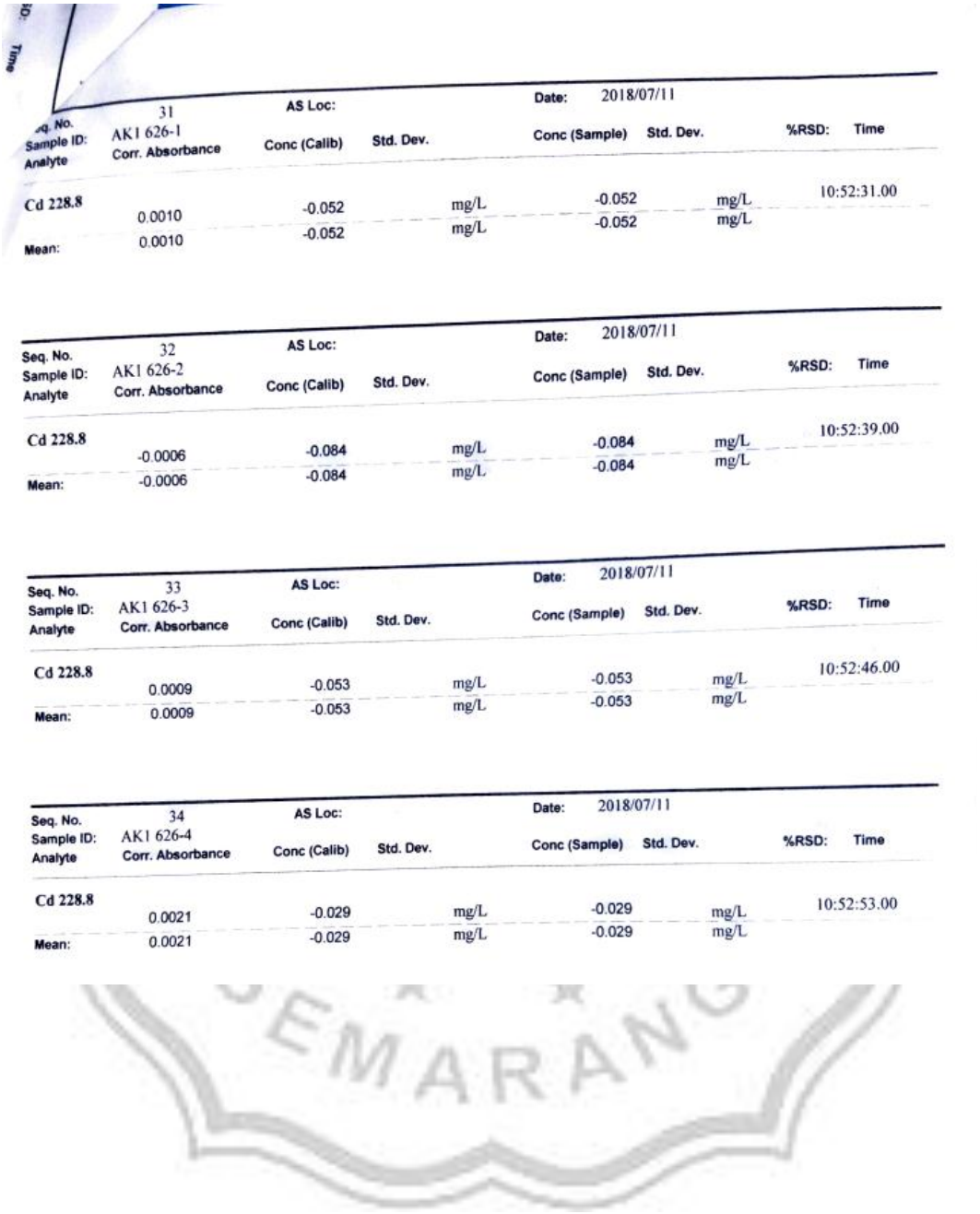
Seq. No.	24	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-1							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8								
	0.0034	-0.003		mg/L	-0.003	mg/L		10:48:26.00
Mean:	0.0034	-0.003		mg/L	-0.003	mg/L		

Seq. No.	25	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-2							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8								
	0.0030	-0.012		mg/L	-0.012	mg/L		10:48:37.00
Mean:	0.0030	-0.012		mg/L	-0.012	mg/L		

Seq. No.	29	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-3							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8								
	0.0004	-0.063		mg/L	-0.063	mg/L		10:50:36.00
Mean:	0.0004	-0.063		mg/L	-0.063	mg/L		

Seq. No.	30	AS Loc:			Date: 2018/07/11			
Sample ID:	AK1 627-4							
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.		Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8								
	-0.0010	-0.092		mg/L	-0.092	mg/L		10:50:42.00
Mean:	-0.0010	-0.092		mg/L	-0.092	mg/L		

Lampiran 18. Hasil Absorbansi Kadmium pada Bawang Putih



Seq. No.	31	AS Loc:		Date: 2018/07/11			
Sample ID:	AK1 626-1						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8	0.0010	-0.052	mg/L	-0.052	mg/L		10:52:31.00
Mean:	0.0010	-0.052	mg/L	-0.052	mg/L		

Seq. No.	32	AS Loc:		Date: 2018/07/11			
Sample ID:	AK1 626-2						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8	-0.0006	-0.084	mg/L	-0.084	mg/L		10:52:39.00
Mean:	-0.0006	-0.084	mg/L	-0.084	mg/L		

Seq. No.	33	AS Loc:		Date: 2018/07/11			
Sample ID:	AK1 626-3						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8	0.0009	-0.053	mg/L	-0.053	mg/L		10:52:46.00
Mean:	0.0009	-0.053	mg/L	-0.053	mg/L		

Seq. No.	34	AS Loc:		Date: 2018/07/11			
Sample ID:	AK1 626-4						
Analyte	Corr. Absorbance	Conc (Calib)	Std. Dev.	Conc (Sample)	Std. Dev.	%RSD:	Time
Cd 228.8	0.0021	-0.029	mg/L	-0.029	mg/L		10:52:53.00
Mean:	0.0021	-0.029	mg/L	-0.029	mg/L		

Lampiran 19. Uji Statistik *One Way Anova*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Kadar Cd	.169	8	.200*	.951	8	.724

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	JenisBawang	Statistic	Df	Sig.	Statistic	Df	Sig.
Kadar Cd	Kadar Cd Bawangmerah	.265	4	.	.905	4	.456
	Kadar Cd BawangPutih	.276	4	.	.943	4	.671

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Kadar Cd

Levene Statistic	df1	df2	Sig.
4.395	1	6	.081

ANOVA

Kadar Cd

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.000	1	.000	.251	.634
Within Groups	.007	6	.001		
Total	.007	7			

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Kadar Pb	.206	8	.200*	.951	8	.717

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Tests of Normality

Jenis Bawang1		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Kadar Pb	Kadar Pbbawangmerah	.198	4	.	.964	4	.804
	Kadar Pbbawangputih	.293	4	.	.872	4	.305

a. Lilliefors Significance Correction

Test of Homogeneity of Variances

Kadar Pb

Levene Statistic	df1	df2	Sig.
.001	1	6	.972

ANOVA

Kadar Pb

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.007	1	.007	2.975	.135
Within Groups	.015	6	.002		
Total	.022	7			

Lampiran 20. Surat Keterangan Hasil Pengujian pada Bawang Putih

Kementerian Perindustrian
Republik Indonesia

BADAN PENELITIAN DAN PENGEMBANGAN INDUSTRI
BALAI BESAR TEKNOLOGI PENCEGAHAN PENCEMARAN INDUSTRI
CENTER OF INDUSTRIAL POLLUTION PREVENTION TECHNOLOGY
LABORATORIUM PENGUJIAN DAN KALIBRASI BBTPPI
BBTPPI TESTING AND CALIBRATION LABORATORY
Jl. Ki Mangunsarkoro No. 6 Telp. (024) 8316315, 8314312, 8310216 Fax. (024) 8414811
E-mail : BBTPPIsmg@yahoo.com Tromol Pos. 829
SEMARANG - 50136

Nomor Seri / *Serial Number* : 002712

F.5.10/0/1/1

Halaman / *Page* : 1 dari 1

LAPORAN PENGUJIAN
REPORT OF ANALYSIS

Nomor Contoh / *Sample Number* : **4658. 2018 / AK1. 0626**

Jenis Contoh / *Material* : Bawang Putih

Cap / Kode / *Merk / Code* : -

Parameter / *Parameters* : -

Asal Contoh / *Sample's Origin* : Eka Nurmawati Cahyana
Universitas Wahid Hasyim Fakultas Farmasi Semarang

Dibuat Untuk / *Executed* : Eka Nurmawati Cahyana
Universitas Wahid Hasyim Fakultas Farmasi Semarang

Tgl. Pengambilan Contoh / *Sample Taken on* : -

Tgl. Penerimaan Contoh / *Sample Received on* : 04 Juli 2018

Kemasan / *Packing* : Plastik

HASIL PENGUJIAN
TEST RESULT

No.	Parameter	Satuan	Hasil Analisa		Metode Uji
			Hasil 1	Hasil 2	
1.	Cadmium (Cd)	mg/kg	< 0,05	< 0,05	SSA
2.	Timbal (Pb)	mg/kg	< 0,200	< 0,200	SSA

Semarang, 13 Juli 2018
Kepala Seksi Pengujian dan Kalibrasi

Cholid Syahroni, S.Si, M.Si
NIP. 19730909 200212 1 002

Lampiran 21. Surat Keterangan Hasil Pengujian pada Bawang Merah

Kementerian Perindustrian
Republik Indonesia

BADAN PENELITIAN DAN PENGEMBANGAN INDUSTRI
BALAI BESAR TEKNOLOGI PENCEGAHAN PENCEMARAN INDUSTRI
CENTER OF INDUSTRIAL POLLUTION PREVENTION TECHNOLOGY
LABORATORIUM PENGUJIAN DAN KALIBRASI BBTPPI
BBTPPI TESTING AND CALIBRATION LABORATORY
Jl. Ki Mangunsarkoro No. 6 Telp. (024) 8316315, 8314312, 8310216 Fax. (024) 8414811
E-mail : BBTPPIsmg@yahoo.com Tromol Pos. 829
SEMARANG - 50136

Nomor Seri / *Serial Number* : 002713

F.5.10/0/1/1

Halaman / *Page* : 1 dari 1

LAPORAN PENGUJIAN
REPORT OF ANALYSIS

Nomor Contoh / *Sample Number*	:	4659. 2018 / AK1. 0627
Jenis Contoh / *Material*	:	Bawang Merah
Cap / Kode / *Merk / Code*	:	-
Parameter / *Parameters*	:	-
Asal Contoh / *Sample's Origin*	:	Eka Nurmawati Cahyana Universitas Wahid Hasyim Fakultas Farmasi Semarang
Dibuat Untuk / *Executed*	:	Eka Nurmawati Cahyana Universitas Wahid Hasyim Fakultas Farmasi Semarang
Tgl. Pengambilan Contoh / *Sample Taken on*	:	-
Tgl. Penerimaan Contoh / *Sample Received on*	:	04 Juli 2018
Kemasan / *Packing*	:	Plastik

HASIL PENGUJIAN
TEST RESULT

No.	Parameter	Satuan	Hasil Analisa		Metode Uji
			Hasil 1	Hasil 2	
1.	Cadmium (Cd)	mg/kg	< 0,05	< 0,05	SSA
2.	Timbal (Pb)	mg/kg	< 0,200	< 0,200	SSA

Semarang, 13 Juli 2018
Kepala Seksi Pengujian dan Kalibrasi

Cholid Syahroni, S.Si, M.Si
NIP. 19730909 200212 1 002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SEMARANG