



*Office of the Board Secretary*

LEYTE STATE UNIVERSITY

Visca, Baybay, Leyte 6521 A

Philippines

EXCERPTS OF APPROVED MINUTES OF THE

11<sup>th</sup> LSU Board of Regents Meeting

18 June 2003 \* NEDA RO8


Government Center, Palo, Leyte

New Laboratory Service Fees of the  
Central Analytical Laboratory

**BOR Resolution No. 45, s. 2003**

Approving the New Laboratory Service Fee of the Central  
Analytical Laboratory, as presented and effective upon Board  
Approval.

Certified True and Correct

  
**DANIEL M. TUDTUD JR.**  
*Board Secretary*

Board Action: **APPROVED**

Date: 18 June 2003

Attachment: F

Cc: PhilRootcrops

OVPRE

OVPAF - *ed 5/21*

OVPAA - *Fr 5-21*



# LEYTE STATE UNIVERSITY

Visca, Baybay, Leyte 6521  
Philippines

*Office of the President*

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18 June 2003

**The Honorable Chairman and  
Members of the LSU Board of Regents**

*Ladies/Gentlemen:*

I am hereby endorsing the "New Laboratory Service Fees and Flyer of the Central Analytical Service Laboratory (CASL)" which has been deliberated and approved by the University Administrative Council during its meeting on May 22, 2003.

I am therefore, recommending the same **FOR APPROVAL** by the Board of Regents.

Very truly yours,

**PACIENCIA P. MILAN**  
President

BOARD ACTION: \_\_\_\_\_  
DATE : 18 June 2003



**CENTRAL ANALYTICAL SERVICE LABORATORY**  
**Philippine Root Crop Research and Training Center**  
**Leyte State University**  
**Visca, Baybay, Leyte**

**LABORATORIES SERVICE FEES**

Amount (P) /sample	Amount (P) / sample	Amount (P) / sample
<b>1. Soil Analyses</b>	<b>2. Water Analyses</b>	<b>D. Minerals</b>
<b>A. Chemical Analyses</b>	pH 50	Total Potassium 200
	Dissolved oxygen 50	Total Calcium 200
pH in H <sub>2</sub> O 50	Total hardness 100	Total Magnesium 200
pH in CaCl <sub>2</sub> 60	Nitrate N 200	Total Phosphorus 200
Moisture content 75	Nitrite N 100	
Available Phosphorus 150	Phosphate 150	<b>4.. Fertilizer Analyses</b>
Total Nitrogen 150	Trace elements	
Organic matter/carbon 150	Cu, Zn, Pb, Ni, Cd (AAS) 200	Moisture 75
Ammoniacal N 100	Turbidity 50	Total P <sub>2</sub> O <sub>5</sub> 200
Nitrate N 100	Alkalinity 100	Total K <sub>2</sub> O 200
Cation exchange capacity 200		Total CaO 200
Extractable aluminum 150		Total MgO 200
Exchangeable bases	<b>3. Plant Tissue Analyses</b>	Total N 150
Sodium (AAS) 100		
Potassium (AAS) 100	<b>A. Proximate</b>	
Calcium (AAS) 100	Total N 150	<b>5. Gas Chrom Analyses</b>
Magnesium (AAS) 100	Moisture 75	
Trace elements	Ash 75	Sample preparation*
Cu, Zn, Pb, Ni, Mn	Crude fiber 150	Optimization 3,000
Fe, Cd (AAS) 200	Crude fat 100	Instrumentation 1,500
Instrumentation only 100	<b>B. Carbohydrates</b>	
	Total sugars 100	* - case to case basis
<b>B. Physical Analyses</b>	Total starch 150	
	Total carbohydrates 200	
Soil texture 100		Note: prices are subject to change
(hydrometer method)	<b>C. Trace elements (AAS)</b>	Without prior notice
Water holding capacity 100	Cu, Zn, Pb, Ni, Mn	
Bulk and particle density 100	Fe, Cd (AAS) 200	Student's and farmer rate is
	Instrumentation only 100	20% less than the standard
		rate



# Economic Cost for each Chemical Analysis

## A. Soil

Factor	pH (H <sub>2</sub> O)	pH (CaCl <sub>2</sub> )	Avail P	Total N	O. Matter	CEC	Moisture
Chemicals	0.50	4.19	53.18	26.27	83.45	84.20	0.00
Electricity	1.00	2.00	5.21	17.98	2.00	26.37	67.00
Labor	10.32	15.63	31.25	43.25	62.50	62.60	2.50
Depreciation	38.18	38.18	60.36	62.50	2.05	26.83	5.50
<b>Total</b>	<b>50.00</b>	<b>60.00</b>	<b>150.00</b>	<b>150.00</b>	<b>150.00</b>	<b>200.00</b>	<b>75.00</b>

Factor	Exch. Al	NH <sub>4</sub> -N	NO <sub>3</sub> -N	Exch. Bases	Trace elements
Chemicals	47.49	37.70	19.68	14.50	33.75
Electricity	4.71	11.15	13.55	9.59	27.31
Labor	31.25	46.88	62.50	22.15	46.88
Depreciation	16.55	4.27	4.27	53.76	92.06
<b>Total</b>	<b>150.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>200.00</b>

Factor	Texture	WHC	B. density
Chemicals	16.15	18.00	2.38
Electricity	1.00	60.27	60.27
Labor	76.06	15.63	31.25
Depreciation	6.79	6.10	6.10
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Labor - Based on the rate of Php250.00/day

Note: Electricity = power consumption of equipt. X no. of hours x cost (Php) of electricity

Depreciation =  $\frac{\text{acquisition cost of equipt.} - \text{scrap value}}{\text{No. of years of service} \times 12\text{mo/yr} \times 23\text{ days/month}}$



Economic Cost for each Chemical Analysis

B. Plant Tissue

Factor	C. Fiber	C. Fat	Total N	Chlorophyll	Sugar	Starch	Ash
Chemicals	12.81	21.02	26.27	25.78	21.67	32.19	0
Electricity	31.62	38.00	17.98	2.40	9.58	11.57	45.48
Labor	93.75	32.28	43.25	31.25	30.54	39.07	6.25
Depreciation	11.82	8.70	62.50	90.57	38.21	67.17	23.27
<b>Total</b>	<b>150.00</b>	<b>100.00</b>	<b>150.00</b>	<b>150.00</b>	<b>100.00</b>	<b>150.00</b>	<b>75.00</b>

Factor	Trace Elements	Total K	Total Calcium	Total Magnesium	Total P
Chemicals	33.75	14.81	19.01	17.58	20.35
Electricity	27.31	45.48	45.48	45.48	28.56
Labor	46.88	31.25	27.05	28.48	62.50
Depreciation	92.06	108.46	108.46	108.46	88.59
<b>Total</b>	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>	<b>200.00</b>

C. Water

Factor	Dissolved Oxygen	NO2-N	Turbidity	NO3-N	Phosphate	Total Hardness	Alkalinity
Chemicals	0.50	40.00	0.00	140.00	90.00	46.82	35.85
Electricity	1.00	2.38	2.38	2.38	2.38	5.03	4.50
Labor	10.32	9.23	9.23	9.23	9.23	32.00	43.50
Depreciation	38.18	48.39	37.39	48.39	48.39	16.15	16.15
<b>Total</b>	<b>50.00</b>	<b>100.00</b>	<b>50.00</b>	<b>200.00</b>	<b>150.00</b>	<b>100.00</b>	<b>100.00</b>



# SCHEDULE OF FEES FROM VARIOUS ANALYTICAL SERVICE LABORATORIES

	SRTPAL	IC-UPLB	IPB-UPLB	BSWM	SU-CHEM	Proposed-CASL		BFAR
						Students	Res. Cntr.	
<b>Soil Analysis</b>								
pH in Water	20.00	55.00	5.00	50.00	150.00	40.00	50.00	50.00
pH in calcium chloride		65.00				50.00	60.00	
Moisture content		160.00	62.50			60.00	75.00	85.00
Avail P	45.00	260.00	150.00	150.00		120.00	150.00	
Total N	60.00	360.00	100.00	150.00	450.00	120.00	150.00	100.00
Organic matter/carbon	60.00	300.00		150.00		120.00	150.00	
Ammoniacal N				100.00		80.00	100.00	
Nitrate N				250.00		80.00	100.00	
Exchangeable Sodium		670.00		100.00		80.00	100.00	
Magnesium		670.00		100.00		80.00	100.00	
Calcium		670.00		100.00		80.00	100.00	
Potassium		670.00		100.00		80.00	100.00	
Cation exchange capacity				200.00		150.00	200.00	
Exchangeable Aluminum				150.00		120.00	150.00	
Trace elements (Cu,Zn,Cr,Pb,Ni,Fe,Cd)		670.00		100.00		150.00	200.00	1200.00
Soil texture (hydrometer method)				200.00		80.00	100.00	
Water holding capacity				150.00		80.00	100.00	
Bulk & particle density				150.00		80.00	100.00	
<b>Water Analysis</b>								
pH		55.00		50.00	150.00	40.00	50.00	50.00
Dissolved oxygen		55.00			300.00	40.00	50.00	
Nitrate N		355.00		200.00	400.00	150.00	200.00	
Nitrite N		400.00		150.00	300.00	80.00	100.00	
Phosphate		355.00			300.00	120.00	150.00	
Turbidity		55.00				40.00	50.00	
Trace elements (Cu,Zn,Cr, Pb,Ni, Fe, Cd)		695.00		100.00		150.00	200.00	1200.00
Total Hardness		310.00		150.00		80.00	100.00	
Alkalinity		200.00		150.00		80.00	100.00	50.00



# SCHEDULE OF FEES FROM VARIOUS ANALYTICAL SERVICE LABORATORIES

	SRTPAL	IC-UPLB	IPB-UPLB	BSWM	SU-CHEM	Proposed-CASL		BFAR
						Students	Res. Cntr.	
<b>Plant Tissue</b>								
<b>A. Proximate</b>								
Total N	60.00	320.00	100.00	150.00	450.00	120.00	150.00	100.00
Moisture		160.00	62.50	50.00		60.00	75.00	85.00
Ash		195.00	68.75			60.00	75.00	200.00
Crude fiber		420.00	100.00			120.00	150.00	
Crude fat		310.00	100.00			80.00	100.00	200.00
<b>B. Carbohydrates</b>								
Total sugars		400.00	125.00			80.00	100.00	
Total starch		600.00	125.00			120.00	150.00	
<b>C. Micronutrients</b> (Cu, Zn, Ni, Cd, Cr, Pb)				100.00		150.00	200.00	
<b>D. Minerals</b>								
Calcium/Magnesium			150.00	100.00		150.00	200.00	
Potassium				150.00		150.00	200.00	
Phosphorus	45.00	260.00	150.00	200.00		150.00	200.00	
Total chlorophyll		450.00	150.00			120.00	150.00	
<b>E. Fertilizer</b>								
Moisture				50.00		60.00	75.00	
Total N				150.00	450.00	120.00	150.00	
Total P as P2O5				200.00	450.00	150.00	200.00	
Total K as K2O				150.00	450.00	150.00	200.00	
Total CaO				150.00	450.00	150.00	200.00	
Total MgO				150.00	450.00	150.00	200.00	
<b>F. Gas Chrom anal.</b>		5930.00				(case to	case basis)	



Amount (P) / sample		Amount (P) / sample		Amount (P) / sample	
<b>1. Soil Analyses</b>		<b>2. Water Analyses</b>		<b>D. Minerals</b>	
<i>A. Chemical Analyses</i>		pH		Potassium	
pH in H <sub>2</sub> O	50	Dissolved oxygen		Calcium	200
pH in CaCl <sub>2</sub>	60	Total hardness		Magnesium	200
Moisture content	75	Nitrate N		Total Phosphorus	200
Available Phosphorus	150	Nitrite N			
Total Nitrogen	150	Phosphate			
Organic matter/carbon	150	Trace elements (Cu, Zn			
Ammoniacal N	100	Pb, Ni, Cd) AAS			
Nitrate N	100	Turbidity			
Cation exchange capacity	200	Alkalinity			
Extractable aluminum	150	<b>3. Plant Tissue Analyses</b>		<b>4. Fertilizer Analyses</b>	
Exchangeable bases		<i>A. Proximate</i>		A. Moisture	
Sodium (AAS)	100	Total N		Total P <sub>2</sub> O <sub>5</sub>	75
Potassium (AAS)	100	Moisture		Total K <sub>2</sub> O	200
Calcium (AAS)	100	Ash		Total CaO	200
Magnesium (AAS)	100	Crude fiber		Total MgO	200
Trace elements		Crude fat		Total N	150
(Cu, Zn, Pb, Ni, Mn		<i>B. Carbohydrates</i>			
Fe, Cd) AAS	200	Total sugars			
Instrumentation only	100	Total starch			
		Total carbohydrates			
		<i>C. Trace elements (AAS)</i>			
<i>B. Physical Analyses</i>		(Cu, Zn, Pb, Ni, Mn			
Soil texture	150	Cr, Cd) AAS			
(hydrometer method)		Instrumentation only			
Water holding capacity	100				
Bulk and particle density	100				

#### D. Minerals

Potassium	200
Calcium	200
Magnesium	200
Total Phosphorus	200

#### 4. Fertilizer Analyses

A. Moisture	75
Total P <sub>2</sub> O <sub>5</sub>	200
Total K <sub>2</sub> O	200
Total CaO	200
Total MgO	200
Total N	150

#### 5. Gas Chrom Analyses

Sample preparation*	
optimization	3,000
instrumentation	1,500

\* - case to case basis

*Note: prices are subject to  
change without  
prior notice*

*Student and farmer's  
rate is 20% less than  
the standard rate*

## CENTRAL ANALYTICAL SERVICES LABORATORY



**Leyte State University**  
Visca, Baybay, Leyte  
6521-A Philippines



## The Central Analytical Services Laboratory (CASL)

This laboratory modestly started as the Analytical Services Laboratory occupying a small room at the ground floor in the west wing of PhilRootcrops. With its limited facilities, it provided very basic and simple analyses of plant and soil samples for researches conducted primarily by PhilRootcrops staff. In the year 2000, the Department of Agriculture-Bureau of Agricultural Research (DA-BAR) realized the importance of improving the poor state of the said laboratory thus released an Institutional Development Grant (IDG) in the amount of P400,000. The money released was used to procure the following :

- 1 unit pH meter
- 1 unit fumehood
- 1 unit shaker
- 1 unit electrode for dissolved oxygen
- 1 unit pH ion electrode
- 1 unit B-pure water deionizer

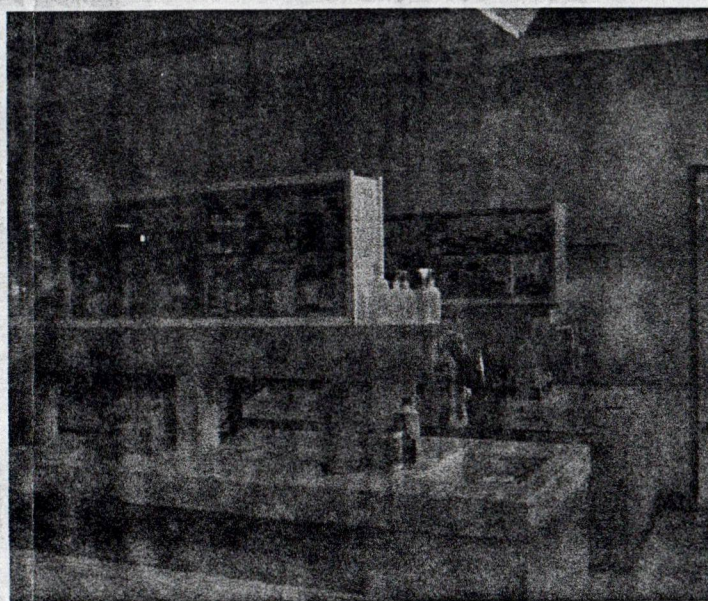
In 2001 when the DA-BAR called for proposals for possible funding, PhilRootcrops in collaboration with NCRC-Visayas and NARC submitted a P5M proposal to create the Central Analytical Services Laboratory for the three research centers and the whole university. CASL is envisioned to provide reliable analytical services to researchers, technicians, entrepreneurs, farmers and other interested individuals. In the same year, DA-BAR approved the proposal and the grant was used to purchase the following sophisticated and state of the art equipment:

- 1 unit Protein Digestion System
- 1 unit Atomic Absorption Spectrophotometer (AAS)
- 1 unit Gas Chromatograph
- 1 unit Vapor generation accessory
- 1 unit Water Analyzer
- 1 set Rapid test kit

At present, CASL occupies the entire second level of the west wing of PhilRootcrops Complex with a floor area of 250 sq. m. It will have a storage stockroom with divisions / compartments for hazardous and non-hazardous chemicals. Moreover, a room each for instruments, sample preparation and weighing scales will soon be components of the laboratory.

### Functions

1. To serve as service laboratory for testing and analyses of food, feeds, fertilizer products, soil and plant and other chemical analyses needs of the general public.
2. To provide for the chemical analyses needs of various research projects undertaken by LSU and other research institutions/ agencies in the Visayas and CARAGA.



3. To serve as hands-on training facility for staff recruited to work in laboratories.

### Other Existing Equipment of CASL

- Analytical balance
- Top loading balance
- Centrifuge
- Distilling apparatus
- Oven
- Furnace
- UV-Vis spectrophotometer
- Spectronic 20
- Wiley mill
- Hot plate
- Shaker
- Soil stirring apparatus
- Magnetic stirrer
- pH meter
- Fume hood
- Vacuum pump
- Fat extractor
- Crude fiber apparatus
- Water bath
- Scale, semi-counter
- Specific gravity balance
- Solution balance
- Kjeldahl distillation apparatus

*For more information, please contact:*

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