



Republic of the Philippines  
**CAVITE STATE UNIVERSITY**  
 Don Severino de las Alas Campus  
 Indang, Cavite  
 (046) 415-0010  
 cvsu.edu.ph

**NATIONAL COFFEE RESEARCH, DEVELOPMENT AND EXTENSION CENTER**

**SUPPLY, FABRICATION, DELIVERY, AND TESTING OF TEMPORARY IMMERSION BIOREACTOR SYSTEM**

**ABC: Php 1,595,000.00**

**Funding Source: TRUST (PCAARRD Bioreactor Project)**

Item No.	Qty./ Unit	Item Description	Function	Unit Price (Php)	Total Price (Php)
1	1 unit	*Fabricated Temporary Immersion Bioreactor System including labor	For micropropagation of coffee planting materials.	1,595,000.00	1,595,000.00
	<i>Cost Breakdown:</i>				
	1 lot	<i>Materials</i>		1,200,000.00	1,200,000.00
	1 lot	<i>Labor</i>		395,000.00	395,000.00
				<b>GRAND TOTAL</b>	<b>1,595,000.00</b>

\*With on-site presentation/ demonstration before acceptance, and user training prior to final acceptance of the product. Must have at least one (1) year of calibration and preventive maintenance services and at least a two-year warranty on parts and services.

**List of Materials**

Unit	Item Description	Quantity
roll	ID/OD = 6mm/9mm autoclavable silicone tube	1
set	Oil-free compressor and accessories	1
pc	0.1 microns PTFE hydrophobic membrane filters	50
pc	Powerline inlet	1
pc	6' polyurethane rubber wheel with swivel lock and heavy-duty steel plate holder	4
pc	Solenoid valve	24
set	3.2 L autoclavable polycarbonate vessel and accessories	24
set	2.3 L autoclavable polycarbonate vessel and accessories	24
pc	polypropylene small screw cap	36
pc	polypropylene large screw cap	36
set	120.0 microns stainless steel wire mesh with autoclavable silicone support for plant materials	24
pc	acrylic transparent sheet	2
pc	5.0 mm perforated BI sheet	3
set	3.0 m royal chord	1
set	aluminum air pipes	1
set	magnetic type door lock system	1
pc	small silicone gasket	48
pc	large silicone gasket	48

set	control system	1
set	Liquid Crystal Display for controls	1
set	Complete cooling system with motor R143A refrigerant/ equivalent, temperature from 0 to 30 degrees Celsius	1
set	microcontroller for temperature, humidity and light control	1
set	SUS hinges	8
set	polyurethane rigid foam for machine frame insulation	1
set	LED lighting system	9
set	air pressure regulator	1

## Specifications

Major Component	Particular	Specification
Growth chamber (Machine frame)	Length x width x height (m)	0.53 x 1.25 x 1.70
	No. of layer	3
	Volume (m <sup>3</sup> )	0.48
	Material	SUS304
	Insulation	PUF insulation
	Power source	Electricity
Culture vessel	Quantity (set)	12
	Dimension (m)	0.18 x 0.16 x 0.11
	Volume (m <sup>3</sup> )	0.0032
	Neck opening (mm)	60.0
	Base measurement (cm <sup>3</sup> )	324.0
	Angle of inclination (°)	3.0
	Material	Polycarbonate
Cap	Polypropylene w/ silicone gasket	
Media vessel	Quantity (set)	12
	Dimension (m)	0.18 x 0.16 x 0.08
	Volume (m <sup>3</sup> )	0.0023
	Neck opening (mm)	40.0
	Material	Polycarbonate
	Cap	Polypropylene w/ silicone gasket
Cooling system	Size of fan (cm)	20.0
	Temperature range (° Celsius)	0 – 30.0
	Refrigerant	Refrigerant-143A
Light system	Material	Full spectrum LED Grow lights
	Quantity per layer	3
Holding rack	Material	5 mm perforated GI sheet
	Quantity	6
	Length x width (cm <sup>2</sup> )	30.0 x 55.0
HEPA filter	Size (µm)	0.30
Door	Material	SUS 304
	Lock System	Magnetic door lock