

EQUIPMENT FOR MICROBIOLOGICAL QUALITY CONTROL

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Federal and state health regulatory agencies have been placing increased responsibilities on seafood processors to insure the safety and quality of the products they produce. In order to determine the degree of compliance to the various regulations and guidelines, many companies have found it necessary to establish quality control or quality assurance programs. These programs can either be directed by the company or contracted to a testing laboratory that provides the necessary service. Because of relating high costs that sometimes must be charged by consulting laboratories, many processors have decided to establish their own quality control laboratories.

This publication contains a list of the various supplies and apparatus that would be necessary to establish a small laboratory having the capability to conduct the following tests:

- 1) Total Plate Count
- 2) Total Coliform
- 3) Fecal Coliform

Other tests as mold and yeast count and E. coli could be added at minimum cost to the list through the purchase of additional materials.

If you have any questions concerning the material contained in the list, please contact your Sea Grant advisor or local extension agent.

EQUIPMENT OR SUPPLIES

I. General Equipment

<u>Equipment per test-10 tests</u>	<u>VPI&SU Ref. No.</u>	<u>Approx. Cost*</u>
Balance (triple beam)	A	37.50
Brush (test tube)	B	12/ 6.60
Brush (cylinder)	C	12/ 3.24
Flask (1 liter-Erlenmeyer)	D	6/ 9.06
Flask (2 liter-Erlenmeyer)	E	1/ 2.51
Flask (1 liter-Volumetric)	F	4/36.96
Electric heating unit (magnetic)	G	106.50
Magnetic bars for stirring (about 3)	H	2.20 ea.
Bunsen burner	I	9.00
Blender base	J	37.95
Blender jars (1 per sample)	K	3.74
Blades for jars	L	3.50 ea.
Scapels	M	12/13.20
Forceps	N	10/ 8.75
Test tube racks (72 hole)		
Test tubes (screw cap tops)		
Durham tubes		
Inoculating needle (holders)	O	12/ 8.80
Inoculating needle (wire)	P	12/ 2.75
Petri plates (Disposable-4/sample)	Q	500/19.75
Pipets (Disposable, 1 or 2 ml 2-3 sample)	R	400/33.63
Dilution bottles w/caps (4/sample)		
Cylinders, graduated (100 ml)	S	4.77 ea.
Cylinders, graduated (250 ml)	T	6.40 ea.
Cylinders, graduated (500 ml)	U	8.75 ea.
Cylinders, graduated (1 liter)	V	12.27 ea.
Thermometer (C° and F°)	W	3.80 ea.
Medicine droppers	X	Grs/ 6.00
Glass rods (hockey sticks)	Y	25 1b/43.75
Cotton (long fiber)	Z	1 1b/ 3.50
Marking pencils	AA	Box of 12/ 3.60
Detergent for cleaning glassware		
Sparkleen (3 1/4 lb/box)	AB	2.35 box
Interval Timer	AC	17.25

II. Media and chemicals

Plate Count Agar	AD	1 1b/10.90
Peptone		
Phosphate buffer solution	AE	1 1b/ 8.00
Lactose broth	AF	1 1b/ 9.35
Lauryl tryptose broth		
Brilliant green lactose bile broth	AG	1 1b/10.90
Ethanol	AH	1 gal/11.75

* Based on 1974 Prices

Approximate Cost	TOTAL
I. General Equipment	\$537.00
II. Media and Chemicals	50.00
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	\$587.00

III. <u>Optional Equipment</u>	<u>VPI&SU</u> <u>Ref. No.</u>	<u>Approx.</u> <u>Cost</u>
Water bath	AI	180.00
Incubator	AJ	495.00
Autoclave	AK	8,250.00
	AL	975.00
	AM	129.00
Colony Counter	AN	161.00
Still (non-automatic)	AO	699.50
Torsion balance	AP	650.00
Automatic pipetter	AQ	278.20
pH meter	AR	245.00
Oven	AS	77.00
Refrigerator	AT	495.00
Microscope	AU	1,050.00
Distilled water storage bottle	AV	71.50

IV. Publications containing information on quality control techniques

1. "Recommended Procedures for the Examination of Sea Water and Shellfish." Fourth Edition, American Public Health Association, 1970. Price \$4.00

"Recommended Procedures for the Microbiological Examination of Foods." Second Edition. J. M. Sharf, Editor. American Public Health Association, 1966. Price \$6.00

Obtain from:
American Public Health Association
1015 18th Street, N.W.
Washington, D. C. 20036

2. "Bacteriological Analytical Manual for Foods." Joseph C. Olson. Food and Drug Administration, Washington, D.C. Stock No. 1712-00162. Price \$2.00

Obtain from:
Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

3. "AOAC Methods." 11th Edition. William Horwitz, Editor. Association of Official Analytical Chemists. 1970. Price not available.

Obtain from:
Association of Official Analytical Chemists
P. O. Box 540
Benjamin Franklin Station
Washington, D. C. 20044

4. "Laboratory Methods in Microbiology." W. F. Harrigan and Margaret E. McCance. Academic Press, Inc. 1966. Price not available.

Obtain from:
Academic Press, Inc.
111 Fifth Avenue
New York, New York 10003