

**DAFTAR ALAT 2012**  
**LABORATORIUM MIKROBIOLOGI PANGAN DAN HASIL PERTANIAN**  
**JURUSAN TEKNOLOGI HASIL PERTANIAN**

No.	Nama Alat	Merk/Tipe	Spesifikasi	Jumlah	Kondisi
1.	Autoclave manual	YXQ. SG 280	Tekanan 0,14 Mpa ; kapasitas 17 liter ; bahan paduan aluminium ; Berat 12 kg	3	<b>Kurang Baik (Katub tidak rapat)</b>
2.	Colony Counter	BA 37863		1	<b>Rusak (Lampu mati)</b>
3.	Incubator	BD 53 Binder	220 V ; 50/60 Hz ; 0,40 kW ; 099 – 00 <sup>0</sup> C ; 1,7 A	3	Baik
4.	Neraca Analitik	Metter Toledo	6 – 14,5 V ; 50/60 Hz ; max 210 gr min 0,01 gr	1	Baik
5.	Kompur listrik	Maspion		7	Baik ( 5 ) ; <b>Rusak ( 2 )</b>
6.	Laminar Air Flow	LAF 01 V Magnehelic	max pressure 100 kPa Cat No. 2000-1,5kPaC	2	Baik (1) ; <b>Kurang Baik (1) karena blower mati</b>
7.	Micropipette 200 –1000 µL	Dragon Onemed	Volume 200-1000 µl ; 20 <sup>0</sup> -25 <sup>0</sup> C	1	Kurang Baik ( sering macet )
8.	Microscope Camera	Novex		1	Baik
9.	Video camera for microscope	VC 3011 Euromex		1	Baik
10.	TV 21'	Polytron		1	Baik
11.	Microscope	Olympus CH 20	220/230 – 240 V ; 0.2 A ; 50 Hz	3	Baik
12.	Vortex mixer	VM-2000 Taiwan		1	Baik

13.	Freezer	UCHIDA URG 058	220 V ; 50/60 Hz ; 75 watt ; kapasitas 47 liter	1	Baik
14.	Autoclave listrik	Hirayama HL 36 AE	220 V ; 50/60 Hz ; 0,188 MPa ; 20 kW ; 61 Liter ; net weight 45/47 kg ; outer dimensions 610x1200x440 mm ; chamber size 360x600 mm	1	Baik
15.	Sentrifuse dingin	Hettich Zentrifugen Mikro 22R	220 – 240 V ; 60 Hz ; 750 watt/900 VA ; kapasitas 6 x 50 mL ; 18000 RPM ; 5 <sup>0</sup> – 40 <sup>0</sup> C	1	Baik
16.	Micropipette 0.5 – 10 µL	Finnpipette		1	<b>Rusak (Ujungnya patah)</b>
17.	Micropipette 40-200ul	Finnpipette		1	Baik
18.	Micropipette 1000 ul	Socorex Acura 815		1	Baik
19.	Micropipette 1000 µL	Ependorf		1	Baik
20.	Shaker Waterbath	JULABO SW 22	230 / 50 – 60 Hz ; 2200 watt	1	<b>Kurang Baik (shaker macet)</b>
21.	Stomacher	Seward 80	220 V ; 50/60 Hz ; T800 mA ; 50 watt	1	Baik
22.	Kompor gas	Covina CP 352 XX		1	<b>Rusak</b>
23.	Lemari es 2 pintu	Sharp		1	Baik
24.	Lemari es	LG		1	<b>Rusak</b>
25.	Lemari es BESAR	Sharp	220 V ; 50/60 Hz ; 90 watt ; kapasitas 180 liter	1	<b>Rusak</b>
26.	DNA elektroforesis	BIORAD		1	Baik
27.	Protein elektroforesis	BIORAD		1	Baik
28.	UV transluminator	UNITEX	sxt-35.L 6x15W-365 nm tube 100 W	1	Baik

29.	Gel documentation	Alpha Pro		1	Baik
30.	Waterbath shaker	Memmert WNB 14 L407	1938 1800w, 7.8a. 50/60 Hz	1	<b>Kurang Baik (shaker macet)</b>
31.	Mini Incubator	BARNSTEAD model 101	serial 1459080451343, vol 240 watt 100 50/60Hz	2	Baik
32.	Micropipette 100µl – 1000µl	SOCOREX		2	Baik
33.	Micropipette 1-10ml	SOCOREX		1	Baik
34.	Micropipette 0,5µl – 10µl	SOCOREX		1	Baik
35.	Micropipette 10µl – 100µl	SOCOREX		2	Baik
36.	Lab. Bottle 250 ml	SCHOOT DURAN	CODE 00934801	10	Baik
37.	Lab. Bottle 500 ml	SCHOOT DURAN	CODE 00413615	10	Baik
38.	Lab. Bottle 1000 ml	SCHOOT DURAN	CODE 00589665	10	Baik
39.	Vortex	lab. Dancer vario	01,658247 IP40	1	Baik

40.	pH meter	CYBERSCAN 510	pH Range 0.00 to 14.00 pH Resolution & Accuracy 0.01 & $\pm 0.01$ pH Ion Concentration Range Not Available 0.01 to 1999 ppm Resolution & Accuracy - 0.01 ppm (0.01 to 0.99 ppm); 0.1 ppm (1.0 to 199.9 ppm); 1 ppm (200 to 1999 ppm) & $\pm 1\%$ Full Scale mV Range $\pm 199.9$ mV; $\pm 1999$ mV $\pm 500$ mV Resolution & Accuracy 0.1 mV & $\pm 0.2$ mV (within $\pm 199.9$ mV); 1 mV & $\pm 2$ mV (beyond $\pm 200$ mV) Temperature Range 0.0 to 100.0 °C Resolution & Accuracy 0.1 °C & $\pm 0.3$ °C No. of Calibration Points Up to 3 points Up to 3 points (pH & Ion) pH Buffer Options USA (pH 4.01, 7.00, 10.01); NIST (pH 4.01, 6.86, 9.18) Temperature Compensation Automatic / Manual (0 to 100 °C) Memory 50 Data Sets Recorder Output Yes Special Functions Stability Indicator; Self-diagnostic; Hold & pH Slope/Offset Display Power 9VDC, using AC adapters 110VAC or 220VAC, 50/60 Hz	1	Baik
41.	Spektrofotometer	Jenway 6305	230/115 V ; 50/60 Hz ; 50 VA ; berat 6 kg	1	Baik
42.	Power suply	BIORAD	model no. powerpac. Serial 041BR51272, MAX POWER 150va, FREQUENCY 50/60 Hz, fuse 2,5A, AC voltage 100-120/220-240V	2	Baik
43.	Plate	IKA	100-240 V, 50/60 Hz 4 W, 0-1500 1/min	1	Baik
44.	Hotplate stirer	IKA RH B2	07,116100, 220-240v, 50/60 Hz, 415 W	1	Baik
45.	Camera	Canon	10 mega pixel no. PC. 1200 482620150	1	Baik
46.	Lemari es 2 pintu	Toshiba Glacio		1	Baik
47.	Lemari es kecil	Toshiba GR H 131 BC	220 V ; 50/60 Hz ; 50 watt ; kapasitas 75 liter	1	Baik
48.	Waterbath shaker	Local		3	<b>Rusak</b>

49.	Fermentor	Heidolph MR Hei – Mix D		1	Baik
50.	Timbangan	OHAUS AV142	4W, kapasitas 410 gram, Serial number 8329300121,	1	Baik
51.	Mikroskop	MICROS MC 50	AC 100 – 240 V ; 50-60 Hz	1	Baik
52.	pH meter	HANNA HI 8424	Range pH -2.00 to 16.00 pH Range mV $\pm 699.9$ mV; $\pm 1999$ mV Range Temperature -20.0 to 120.0°C / -4.0 to 248.0°F Resolution pH 0.01 pH Resolution mV 0.1 mV; 1 mV Resolution Temperature 0.1°C / 0.1°F Accuracy pH $\pm 0.01$ pH Accuracy mV $\pm 0.2$ mV; $\pm 1$ mV Accuracy Temperature $\pm 0.4$ °C / $\pm 0.8$ °F pH Calibration automatic, 1 or 2 point with 3 memorized buffer values (4.01, 7.01, 10.01) pH Calibration Offset Calibration $\pm 1$ pH pH Calibration Slope Calibration 75 to 110% Input Impedance $10^{12}$ Ohm Temperature Compensation Automatic, -20 to 120°C (-4 to 248°F) or manual without temperature probe pH Electrode HI 1230B, double junction, gel filled PEI (PolyEther-Imide) body, BNC connector, 1 m (3.3') cable (included) Temperature Probe HI 7669AW with 1 m (3.3') cable (included) Battery Type / Life 1 x 9V / approx. 150 hours of continuous use; auto-off after 20 minutes of non- use or disabled (user-selectable) Environment 0 to 50°C (32 to 122°F); RH max 100% Dimensions 164 x 76 x 45 mm (6.5 x 3.0 x 1.8") Weight 180 g (6.3 oz.)	2	Baik
53.	Micropipette 200 $\mu$ l	NICHIRYO 500 F&V	Volume 200 $\mu$ l ; Accuracy(%) $\pm 0.7 \sim \pm 0.5$ ; Precision(%) $< 0.4 \sim < 0.3$	1	Baik
54.	Micropipette 10 $\mu$ l	NICHIRYO 500 F&V	Volume 10 $\mu$ l ; Accuracy(%) $\pm 1.2 \sim \pm 0.7$ ; Precision(%) $< 0.6 \sim < 0.3$	1	Baik
55.	Micropipette 1000 $\mu$ l	NICHIRYO 500 F&V	Volume 1000 $\mu$ l ; Accuracy(%) $\pm 0.7 \sim \pm 0.5$ ; Precision(%) $< 0.3 \sim < 0.2$	1	Baik

56.	Mikroskop	MICROS MC 300	AC 100 – 240 V ; 50-60 Hz	1	<b>Kurang Baik (Meja preparat macet)</b>
57.	Camera	Canon Power Shot G10	Sensor 1/1.7" Type CCD 14.7 million effective pixels Image sizes 4416x 3312 pixels,3648 x 2736 pixels,3072 x 2304 pixels,2560 x 1920 pixels,2048 x 1536 pixels, 1600 x 1200 pixels,640 x 480 pixels,4416x 2480 pixels Movie clips 640 x 480 @ 30fps,320 x 240 @ 30fps,160 x 120 @ 15fps Maximum clip length 640 x 480, 320 x 240: 4GB or 1 hour 160 x 120: 3 mins File formats JPEG (Exif v2.2) RAW AVI (Motion JPEG + WAVE) Lens 28-140mm (35mm equiv) 5x optical zoom USB 2.0 Hi-Speed AV out (PAL / NTSC switchable) Print compliance PictBridge Storage • SD, SDHC, MMC, MMC <i>plus</i> , HC MMC <i>plus</i> compatible Power Rechargeable Li-ion Battery NB-7L Weight (no batt) 350 g Dimensions 109 x 78 x 46 mm	1	Baik
58.	Inkubator	Local		1	<b>Kurang Baik (suhu tidak stabil)</b>
59.	Hot plate stirrer	Local		1	Baik
60.	Micropipete 1000 ml	Socorex	Volume 1000 ml	3	Baik
61.	Micropipete 200 ml	Socorex	Volume 200 ml	3	Baik
62.	Micropipete 10 ml	Socorex	Volume 10 ml	3	Baik
63.	Vortex	MX-S ZM 30520		1	Baik

64.	Hot Plate Magnetic Stirrer	Dragon Lab MS-H-Pro ZR 30546	Voltage [VAC] 85~265 Frequency [Hz] 50/60 Power [W] 230(220Vsupply) Stirring point position quantity 1 Max. stirring quantity (H <sub>2</sub> O) [l] 20 Max. magnetic bar [mm] 80 Motor type Exterior rotor brushless motor Motor rating input [W] 19.2 Motor rating output [W] 10 Speed range [rpm] 0 – 1500 Speed display LCD Speed display accuracy [rpm] 1 Plate Material Stainless steel Dimension of heating plate [mm] φ135 Heat output [W] 200(220Vsupply) Heating rate (1L water) [K/min] 6 Temperature range [°C] RT - 300 Temperature display LCD Temperature display accuracy [°C] 0.1 Control accuracy of heating temperature [°C] 1 Adjustable safety circuit (heating plate) [°C] 50 - 350 Adjustable safety circuit (reaction liquid) [°C] 50 - 350 Temperature sensor of extraposition PT100/PT1000 Control accuracy of heating temperature with temperature sensor [°C] 0.2 Dimension (D×W×H ) [mm] 280×160×85 Weight [kg] 2.8 Permissible ambient temperature [°C] 5 - 40 Permissible relative humidity 80	1	Baik
65.	Mikroskop	Optika B-20	Head monocular 360 <sup>0</sup> rotating, 45 <sup>0</sup> inclined, eyepieces WF 10X/16 mm, nosepiece triple reversed, objectives achromatic 4x 10x 40x , rotating round stage diameter 90 mm moving range 5 mm slide clips , white LED, non-rechargeable with brightness control, Mains power 220 V / 50 Hz , fuse 2 A	4	Baik

66.	Spektrofotometer	Spectro 20D plus	Wavelength Range: 330-1000nm. Spectral bandwidth: 6nm. Data Processing: Microprocessor Wavelength Accuracy +/- 1nm. Wavelength Repeatability: +/- 1nm. Optical System Grating, 1200 lines/mm. Stray Light : <-0.5%T at 340 nm & 400nm. Display 3.5 LCD Photometric Range : 0 to 2.5 ABS 0 to 100& T 0 to 1999C (0 to 1999F) Zero & Blank set Automatic Photometric Accuracy: +/- 1%T Drift: -<0.003 A/hour after warming up Detector Silicon Photodiode Light Source: Tungsten Halogen lamp, 6V 10W Sample Volume: 0.4ml (minimum) Sample Container: Round and Square cuvette Data Output: Analog output, RS 232C interface, Printer (SEIKO dpu-414) Power Requirements: 110-240V. AC, 50/60Hz., Selected automatically Dimensions 330 (W)x130 (H)x270 (D) mm.Net Weight 5.2 kg.	1	Baik
67.	Kompur Gas	Quantum QGC-101 SR	Dimensi 300x405x122 mm ; Berat 2,3 kg ; Burner stainless steel ; Body mild steel sheel ; control knop plastic 52 x 25 mm	1	<b>Rusak</b>
68.	Lemari es	Sharp SJ-F240G	Daya 220 V ; Frekuensi 50 Hz ; Konsumsi tenaga 95 W ; dimensi 535x560x1635 mm ; berat 51 Kg ; volume 221 L	1	Baik
69.	pH meter	Oaklon pHTestr 10	Range pH -1.0 to 15.0 ; Resolution pH 0.1 ; Accuracy pH $\pm 0.1$ ; Calibration pH Up to 3 ; Display Four-digit LCD ; Power Four 1.5 V button cell batteries (included) ; Battery life More than 100 hours ; Dimensions 6-1/2"L x 1-1/2"dia ; Low battery indicator three-segment ; Operating temperature 32 to 122°F (0 to 50°C) ; Temp compensation 32 to 122°F (0 to 50°C) ; Buffer recognition 4.0, 7.0, 10.0 USA and 4.0, 6.9, 9.2 NIST	1	Baik



70.	Waterbath shaker	Memmert WNB 14	Volume 14 liter ; Usable bath Length A 350 mm ; Usable bath width B 390 mm ; Usable bath depth C 140 mm ; Housing length D 578 mm ; Housing Legth E 436mm ; Housing height (with flat cover) F 238 mm ; Housing height (with gable cover) G 347 mm ; Weight 16kg ; Power 1800 W ; Ambient conditions, Ambient temperature 50°C – 40°C. rh max. 80% (no condensation). Overvoltage Category: II. Contamination degree:2 ; Setting temperature range, 10°C to 95°C. With activation of the boiling mode up to 100°C, see section 4.3.1 ; Setting accuracy 0,1°C ; Indication accuracy 0,1°C ; Working temperature range 5°C above ambient temperature to nominal temperature = maximum temperature (see rating plate)	1	Baik
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71.	Cooling incubator	MMM group Friocell 222	Inner dimensions Chamber, stainless steel. Volume 222 l, width 540 mm, depth 520 mm, height 760 mm ; volume of the steam space 299 cca l ; Trays, stainless steel Min. distance between trays number 10/2 max./usua, 7cm ; Number of outer metal doors 1 .number of inner glass doors 1.Admissible weight of trays together inside the oven 70 kg .per 1 tray 30 kg ; Electricity data, max.power consumption*) : 1130W, 230V .Protective system, mains 50/60 Hz : IP 20 ; Temperature data, Working temperature from 0.0 °C : 99,9 to °C . Temperature accuracy Variation at 10oC : <0,5 ± °C, at 37°C : <0,5 ± °C .Deviation, Heating/up time to 37°C from the ambient temperature : 25min. Cooling/down time from 22 °C to 10 °C : <21min. Recovery time after 1 min, at 37 °C : 4min. door open, at 50 °C : 4min ; Heat mission, at 37 °C : 97 W ; Outer dimensions (incl. door and handle, feet or rollers), width : 760 max.mm, depth : 790 max.mm, height : 1230H max.mm ; Weight, net : 132 cca kg, gross : 169 cca kg.	1	Baik
72.	Freezer	GEA / AB-375 LT	Tegangan 220 V ; Frekuensi 50 Hz ; Daya 350 W ; Temperatur hingga -40°C ; Volume 375 L	1	Baik
73.	Mikropipet 100-1000 µL	Finnpipette		1	Baik
74.	Oven	Binder / FD 115	Tegangan 230 V ; Frekuensi 50/60 Hz ; Daya 1,60 kW ; Temperatur 300°C – 572°C ; Volume 115 L	1	Baik
75.	Incubator CO <sub>2</sub>	Thermo Scientific / Midi 3404	Tegangan 230 V ; Frekuensi 50/60 Hz ; Daya 1.0/15 Amps/breaker ; Temperatur 5°C – 60°C ; Volume 39,6 L	1	Baik
76.	Orbital Shaker	Cole Parmer/ OS-200	Tegangan 100 - 240 V ; Frekuensi 50 Hz ; Daya 50 W ; Kecepatan 50 – 250 rpm ; Berat 7,5 kg ; Kapasitas max 2,5 kg	1	Baik

77.	Mikropipet 100-1000 $\mu$ L	Soccorex		1	Baik
78.	Pipette Aid			1	Baik