Lampiran 5. Pengukuran Aktivitas Enzim Ligninase

Tabel 7. Hasil absorbansi aktivitas enzim liginase

		Absorbansi			Absorbansi (sampel-kontrol)	
	pH	Kontrol	AcP 7	AcP 1	AcP 7	AcP 1
Hari ke 3	pH 6,5	2,8781	3,2189	3,0913	0,3408	0,2132
	pH 7,0	2,9857	3,6548	3,3576	0,6691	0,3719
	pH 7,5	3,0391	3,7702	3,4490	0,7311	0,4099
	pH 8,0	2,6379	3,3033	2,9977	0,6654	0,3598
	pH 8,5	2,5972	3,0460	2,9049	0,4488	0,3077
Hari ke 6	pH 6,5	2,8781	3,2192	3,0927	0,3411	0,2146
	pH 7,0	2,9857	3,6617	3,3581	0,6760	0,3724
	pH 7,5	3,0391	3,7805	3,4495	0,7414	0,4104
	pH 8,0	2,6379	3,3140	2,9984	0,6761	0,3605
	pH 8,5	2,5972	3,0466	2,9052	0,4494	0,3080
Hari ke 9	pH 6,5	2,8781	3,2205	3,0931	0,3424	0,2150
	pH 7,0	2,9857	3,6621	3,3785	0,6764	0,3928
	pH 7,5	3,0391	3,7957	3,4797	0,7566	0,4406
	pH 8,0	2,6379	3,3149	2,9988	0,6770	0,3609
	pH 8,5	2,5972	3,0469	2,9107	0,4497	0,3135
Hari ke 12	pH 6,5	2,8781	3,2905	3,0994	0,4124	0,2213
	pH 7,0	2,9857	3,6581	3,3950	0,6724	0,4093
	pH 7,5	3,0391	3,8050	3,5097	0,7659	0,4706
	pH 8,0	2,6379	3,3197	3,0268	0,6818	0,3889
	pH 8,5	2,5972	3,0769	2,9157	0,4797	0,3185
Hari ke 15	pH 6,5	2,8781	3,3821	3,1753	0,5040	0,2972
	pH 7,0	2,9857	3,9191	3,4395	0,9334	0,4538
	pH 7,5	3,0391	4,0237	3,7002	0,9846	0,6611
	pH 8,0	2,6379	3,5464	3,1317	0,9085	0,4938
	pH 8,5	2,5972	3,2891	3,0725	0,6919	0,4753
Hari ke 18	pH 6,5	2,8781	3,2404	3,1000	0,3623	0,2219
	pH 7,0	2,9857	3,9075	3,3505	0,9218	0,3648
	pH 7,5	3,0391	3,9067	3,6049	0,8676	0,5658
	pH 8,0	2,6379	3,5021	2,9907	0,8642	0,3528
	pH 8,5	2,5972	3,1403	2,9085	0,5431	0,3113
Hari ke 21	pH 6,5	2,8781	3,2058	3,1001	0,3277	0,2220
	pH 7,0	2,9857	3,7012	3,3408	0,7155	0,3551
	pH 7,5	3,0391	3,8577	3,5577	0,8186	0,5186
	pH	2,6379	3,4070	2,9799	0,7691	0,3420

	8,0					
	pH 8,5	2,5972	3,0149	2,9076	0,4177	0,3104

Contoh Perhitungan

$$\boldsymbol{A = \varepsilon\, b\, c}$$

Keterangan:

A = Absorbansi

ε = Ekstensi molar veratraldehid (9300 M^{-1} cm^{-1})

b = Tebal kuvet (1 cm)

c = Konsentrasi (M)

(Yadav and Yadav, 2005)

$0{,}3408 = 9300/M.cm\ x1\ cmx\ c$

$0{,}3408 = 9300/Mx\ c$

$c\ = 0{,}3408/9300M$

c = 0,00003665M c = 0,03665mM

Untuk menentukan aktivitas unit enzim digunakan persamaan berikut:

$$Aktivitas\ Unit\ (U/mL\ ) = \frac{c\ (\mu mol/mL)\ \times v(mL) \times FP}{waktu\ inkubasi\ (menit) \times v\ enzim\ (mL)}$$

Keterangan:

c = konsentrasi (μmol / mL)

v = volume sampel

FP = faktor pengenceran

$$Aktivitas\ Unit\ (U/mL\ ) = \frac{0{,}03665\ (\mu mol/mL)\ \times 10(mL) \times 25}{10\ (menit) \times 0{,}4\ (mL)}$$

$$Aktivitas\ Unit\ \left(\frac{U}{mL}\right) = \frac{9{,}161(\mu mol)}{10\ (menit)\ x\ 0{,}4(mL)}$$

$$Aktivitas\ Unit\ \left(\frac{U}{mL}\right) = 0{,}366$$