

(2010 / 7 / 13 2010 / 1 / 24)

Alternaria

/ 60/

5.26

.³ / 0.315

alternata

³

Legumenous Seed Born Fungi Producing Cellulase

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ABSTRACT

This study was conducted for the purpose of finding local isolates which produce the cellulase enzyme. Specific test was conducted to determined the ability of these isolates to produce cellulase on solid and liquid media, also to find out the best isolates producing this enzyme. A quantitative test was carried out find the best cellulose producing isolate, which was *Alternaria alternata* isolated from cowpea, as it produced 5.26mg glucose/60min /cm³ and 0.315 mg/cm³ glucose.

(1993)
Hydrolyases enzymes

. (2008)

(1980) Friend Mankarious

4-1 β

.

.C1 : (1956) Reese
4-1 β
Cellobiose
(2008) (1993) (Cx)

()

(El-Refai *et al.*, 1984)

(Yeoh *et al.*, 1985)

(HCl - I)

.(/ KI % 2 + / % 1) ³ 500 + (HCl 0.1) ³ 100

.....

³ 50 ³ 250

. 25 120 ² / 1

1 ± 28

³ / 10×5

(8) /100

1.4 (/)

0.5

0.3

0.3

3

2.0

15

0.2

0.14

0.16

³ 2 Tween 80

1

6

0.5

³ 50

³ 250

.(Strenbery and Mandels, 1976)

Filter

(Strenbery and Mandels 1976)

Paper Assay

(Whatman No. 1)

Bauchner Funel

³ 0.5

. 24

60

Na-Citrate pH

³ 1

(³ 18)

()

250

25

) 4.8

50

(6×1)

(Whatman No. 1)

(³

(Vortex)

5.5

(DNS) Dinitrosalicylic Acid

³ 3

50

³ 500

150

(2) DNS

() 5
 Blank
 ()
 (Pye Unicam) SP 8000 Ultra Violet / Visible Spectrophotometer

.(Dubois *et al.*, 1956)

0.06 0.05 0.04 0.03 0.02 0.01 : 1
 3 5 % 5 3 1 .3 / 1000
 30 30-25 488
 0.07

3 / 5 4 3 2 1 : 1000
 (DNS) 3 Na -Citrate pH 4.8 3 1
 550 5

3 / 5 10 × 5

.....

23

22

(1)

Uloclidium botrytis

(50) (++++) *Alternaria alternata* (21)

CMC

.(+++)
Stemphylium botryosum

. (1)

.(Campbell,1952)

(Modified Cellulose)

Merchant and .(Fergus and Trigiano, 1979)

Sporotrichum thermophile

(Margaritis, 1983)

Alternaria

(2)

alternata

$3 / 60 / 5.26$
Cladosporium Rhizoctonia solani Stemphylium botryosum
Ulocladium botrytis Fusarium graminearum cladosporioides
 $3 / 60 / 0.4$
 $3 / 0.315$ *A. alternata*

4.0 *Stemphylium botryosum* (50)

0.252 $3 / 60 /$
Ulocladium $3 / 60 /$
botrytis (16)

.(El-Refai *et al.*, 1984)

(Yeoh *et al.*, 1985)

Ulocladium botrytis

$3 / 60 / 0.4$

Alternaria alternata

$3 / 0.069$

(Mandels, 1975)

(1990)

.(Kristiansen and Sinclair, 1979)

.(Yoshigi *et al.*, 1988 ; Kurosaw *et al.*, 1989)

A. alternata

.....

(El-Refai *et al.*, 1984) . 0.854

A. alternata (21)

(1982)

25

(10^{-6})

1

Cellulase

:1

| * | | | |
|------|------|-------------------------------------|------------------------------------|
| *** | ** | | |
| ++ | ++ | <i>Alternaria alternata</i> | Chickpea <i>Cicer arietinum</i> |
| + | + | <i>Fusarium graminearum</i> | |
| ++ | ++ | <i>Fusarium sp.</i> | |
| + | + | <i>Aspergillus niger</i> | Lentil |
| ++ | ++ | <i>Rhizoctonia solani</i> | <i>Lens esculenta</i> |
| ++ | ++ | <i>Cladosporium cladosporioides</i> | Bean <i>Phaseolus vulgaris</i> |
| +++ | +++ | <i>Stemphylium botryosum</i> | Soybean <i>Glycine max</i> |
| ++ | ++ | <i>A. alternata</i> | Cowpea <i>Vigna unguiculata</i> |
| ++++ | ++++ | <i>A. alternata</i> | |
| + | + | <i>A. niger</i> | |
| ++ | ++ | <i>A. niger</i> | |
| - | - | <i>Ulocladium botrytis</i> | |

- *

.³ (3-1)

+

.³ (7-4)

++

.³ (11-8)

+++

.³ (12)

++++

. (El-Refai *et al.*, 1984)

*** . (Yeoh *et al.*, 1985)

**

Cellulase

:2

| (° /) | / / 60 3 | | | |
|--------|-------------|--------|------|-------------------------------------|
| | | (° /) | | |
| 0.315 | 5.26 | * 2.63 | ++++ | <i>Alternaria alternata</i> |
| 0.202 | 1.66 | 0.83 | ++ | <i>Aspergillus niger</i> |
| 0.221 | 2.30 | 1.15 | ++ | <i>Cladosporium cladosporioides</i> |
| 0.103 | 0.82 | 0.41 | + | <i>Fusarium graminearum</i> |
| 0.207 | 3.0 | 1.50 | ++ | <i>Rhizoctonia solani</i> |
| 0.252 | 4.0 | 2.0 | +++ | <i>Stemphylium botryosum</i> |
| 0.069 | 0.4 | 0.2 | - | <i>Ulocladium botrytis</i> |

(0.854)

0.05

*

8
2.8 6.0 / 10
3 0.5 60

" (1982)

" (2008)

.2008 **83**

.(1993)

.(1990)

.544 .

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