

**UNDERGRADUATE THESIS**

**BIOCONVERSION OF AGRICULTURAL WASTE TO VALUE-ADDED  
PRODUCTS OF XYLANASE AND XYLOOLIGOSACCHARIDES BY  
*Bacillus subtilis* J12 UNDER SUBMERGED FERMENTATION**



**Arranged by:**

**YESINTA FITRIA DEWI**

**19/439878/TP/12416**

**DEPARTMENT OF FOOD AND AGRICULTURAL PRODUCT TECHNOLOGY  
FACULTY OF AGRICULTURAL TECHNOLOGY  
UNIVERSITAS GADJAH MADA  
YOGYAKARTA  
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**Undergraduate Thesis**

**Department of Food and Agricultural Product Technology**

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**As a fulfillment of the requirement of Bachelor's degree (S-1) to obtain a degree  
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**Department of Food and Agricultural Product Technology**

**Arranged by:**

**Yesinta Fitria Dewi**

**19/439878/TP/12416**

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By:  
**YESINTA FITRIA DEWI**  
19/439878/TP/12416

Has been approved by the examiner team at the  
Department of Food and Agricultural Product Technology  
Faculty of Agricultural Technology Universitas Gadjah Mada


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Advisor I

Advisor II

  
Dr. Ir. Muhammad Nur Cahyanto, M.Sc.      
NIP. 196107051986031004    Assoc. Prof. Dr. Jirawan Apiraksakorn

Examiner

  
Prof. Dr. Ir. Tyas Utami, M.Sc.  
NIP. 196204181986032001

Endorsed by,  
Dean of Faculty of Agricultural Technology  
Universitas Gadjah Mada



  
Prof. Dr. Ir. Eni Harmavani, M.Sc.  
NIP. 196306091987102001