



Universitas Gadjah Mada  
 Faculty of Agriculture  
 Agricultural Microbiology Study Program

Course Syllabus

| Course Code        | Course Name  | Credits   | Semester | Course Status | Requirement |
|--------------------|--|---|----------|---------------|-------------|
| PNM20193122        | Traditional Fermented Food of Indonesia  | 2   | 1        | Optional      | -           |
| Learning Outcome   | 1  | Understanding the diversity of traditional fermented food in Indonesia                              |          |               |             |
|                    | 2  | Understanding the history and purpose of the production of traditional fermented food               |          |               |             |
|                    | 3  | Understanding the microbiology and biotechnology of various traditional fermented food in Indonesia |          |               |             |
| Course Description | <p>This course will discuss the microbiology and biotechnology of various traditional fermented food in Indonesia. Food fermentation methods arose historically from the need for processing and preservation food. More than anything else, man has been employing microbes for the preparation of fermented food products for thousands of years. Foods and beverages constitute a significant component of human nutrition, dietary supply and calories intake in different parts of Indonesia. Fermentation of diverse plant and animal substrates by microorganisms and their enzymes provides desirable features, such as post-harvest preservation of perishable food materials, nutritional enrichment, bio-preservative effects and specific health-promoting benefits. Nowadays, fermented foods and beverages are consumed not only for nutritional values, wholesomeness or palatability, but importantly for their health beneficial functions.</p> |   |          |               |             |
| Course Content     | <ol style="list-style-type: none"> <li>1. Introduction to traditional fermented food of Indonesia</li> <li>2. Diversity of traditional fermented food of Indonesia</li> <li>3. Microbiology of traditional fermented food of Indonesia</li> <li>4. Quality and safety of traditional fermented food</li> <li>5. Health-related issues of traditional fermented product</li> <li>6. Cereal-based traditional fermented food of Indonesia</li> <li>7. Fruit and vegetable based fermented food of Indonesia</li> <li>8. Roots and tuber based fermented food of Indonesia</li> <li>9. Traditional fermented food involving acid fermentation</li> </ol>  |   |          |               |             |

|           |   |
|-----------|---|
|           | <p>10. Acetic acid fermented food product</p> <p>11. Health promoting lactic acid bacteria in traditional fermented food of Indonesia</p> <p>12. Indigenous Fermented Foods: Fermented Meat Products, Fish and Fish Products, Alkaline Fermented Foods, Tea, and Other Related Products</p> <p>13. Biotechnology and traditional fermented food</p> <p>14. Metabolomic based study of tempe</p> |
| Reference | <p>1. <i>Indigenous Fermented Foods of South Asia</i>, V.K. Joshi (2015), CRC Press, USA.</p> <p>2. <i>Ethnic Fermented Foods and Alcoholic Beverages of Asia</i>, J.P. Tamang (2016), Springer, India.</p> <p>3. <i>Handbook of Indigenous Fermented Foods, Revised and Expanded</i>, Keith Steinkraus (2018), CRC Press, USA.</p>   |
| Lecturer  | <p>Nur Akbar Arofatullah, M. Biotech., Ph.D</p> <p>Ahmad Suparmin, S.P., M. AgrSc., Ph.D</p> <p>Susanti Mugi Lestari, S.P. M.Si., Ph.D.</p>   |