

320221995 Packaging and storage

Module Name	Packaging and storage
Module Level, if applicable	Advanced
Code if Applicable	
Subtitle, if applicable	-
Courses, if applicable	320221995 Packaging and storage
Semester(s) in which the module is taught	7 th
Person responsible for the module	Dr. Ir. Warkoyo, MP.
Lecturer	Dr. Ir. Warkoyo, MP.
Language	Indonesian
Relation to curriculum	Compulsory Courses for undergraduate program in Departement of Food Technology, Faculty of Agriculture and Animal Science
Type of teaching	Lecture, project
Workload	<ul style="list-style-type: none"> ● Lecture: 2 sks X 50 minutes X 16 weeks ● Project: 2 sks X 60 minutes X 16 weeks ● Independent learning: 2 sks X 60 minutes X 16 week
Credit points	2 SKS X 1.5 = 3 ECTS
Requirements according to the examination regulations	<ol style="list-style-type: none"> 1. Registered in this course 2. Minimum 80% attendance in this course
Recommended prerequisites	Food Ingredients Knowledge, Post-Harvest Physiology and Storage Technology
Module Objectives (Intended learning outcomes)	<p>Food Packaging is one of the most important processes in food industry which helps in maintaining the quality of food products during storage. It is primarily done in order to protect the food products from external influences like biological, chemical or mechanical damage; to contain the food, preserve it in its state as packed by preventing quality deterioration, and to attract consumers and provide product and nutritional information. As the nomadic culture evolved, the need for containers to store food has also emerged. It took over 300 years for food packaging to finally evolve into the current form. Each type of packaging material has a different role to play in packaging. Also packaging material like biodegradable packaging or edible packaging may ensure the world's need for environment friendly and natural foods which is a major global concern now-a-day. The food packaging industry has revolutionized to a great extent in the recent years with advancement of novel food packaging technologies, such as active packaging, aseptic packaging, smart packaging, bioactive packaging, edible packaging which are research trends.</p>
Module Content	This course offers about the function of packaging, the nature of some packaging materials, edible films and coatings, several types of packaging (smart aseptic packaging, MAP), labels and packaging design, canning, product shelf life and estimation of expiration.

Study and examination requirements and forms of examination	Cognitive: Midterm exam, Final exam, Quizzes, Assignments Affective: Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.
Media employed	Classical teaching tools with white board and power point presentation
Recommended Literature	For Class A. Compulsory 1. Bureau, G. & J.L. Multon, 1996. Food Packaging Technology . VCH Publishers, Inc. Amerika Serikat. 2. Coles, R., D. McDowell, M.J. Kirwan, 2003. Food packaging technology . Blackwell Publishing. 3. Warkoyo, B. Rahardjo, D.W. Marseno, & J.N.P. Karyadi, 2015. Kinetika pertumbuhan mikrobia dan kemunduran mutu bakso berpelapis edible aktif berbasis pati kimpul pada berbagai ketebalan . <i>Jurnal AGRITech</i> Vol. 35 (4): 456-463. https://jurnal.ugm.ac.id/agritech/article/view/9330 4. Warkoyo, B. Rahardjo, D.W. Marseno, & J.N.P. Karyadi, 2015. Kinetika pertumbuhan mikrobia dan kemunduran mutu bakso daging terlapisi pati umbi kimpul yang diinkorporasi kalium sorbat . <i>Jurnal AGRITech</i> Vol. 35 (1): 61-68. https://jurnal.ugm.ac.id/agritech/article/view/9420 5. Warkoyo, B. Rahardjo, D.W. Marseno, & J.N.P. Karyadi, 2014. Sifat fisik, mekanik dan barrier edible film berbasis pati umbi kimpul yang diinkorporasi dengan kalium sorbat . <i>Jurnal AGRITech</i> Vol. 34 (1): 72-81. https://jurnal.ugm.ac.id/agritech/article/view/9525 6. Brody, A.L., E.R. Strupinsky, & L.R. Kline, 2001. Aseptic Packaging for Food Applications . Technomic Publishing Co., Inc. Lancaster-Basel. 7. UU RI no 18 tahun 2012 tentang Pangan 8. PP RI no 28 tahun 2004 tentang Keamanan, Mutu dan Gizi Pangan 9. Peraturan BPOM RI tahun 2007 tentang Bahan kemasan pangan 10. Muchtadi, D., 1995. Teknologi dan Mutu Makanan Kaleng . Pustaka Sinar Harapan. Jakarta. 11. Kilcast, D. & P. Subramaniam, 2000. The Stability & Shelf-life of Food . CRC Press. New York B. Option 1. Characterization of Edible Film from Starch of Taro (<i>Colocasia esculenta</i> (L.) Schott) with Addition of

	<p>Chitosan on Dodol Substituted Seaweed (Eucheuma cottonii L.). FTHS Journal Vol. 1(1) Tahun 2018. https://doi.org/10.22219/fths.v1i1.7544</p> <p>2. Karakteristik Fisik, Mekanik Dan Zona Hambat Edible Film Dari Pati singkong Karet (Manihot glaziovii) Dengan Penambahan Gliserol Dan Ekstrak Jahe Merah (Zingiber officinale Var Rubrum) Sebagai Penghambat Bakteri Salmonella. FTHS Journal Vol. 2(1) Tahun 2019. https://doi.org/10.22219/fths.v2i1.12967</p> <p>3. Kajian Konsentrasi Pati Singkong Karet (Manihot glaziovii) dan Penambahan Fraksi Oleat dan Asam Oleat pada Karakteristik Fisik dan Barrier Edible Film. FTHS Journal Vol. 2(1) Tahun 2019. https://doi.org/10.22219/fths.v2i1.12965</p> <p>4. Study of Physical Characteristic, Water Vapor Transmission Rate and Inhibition Zones of Edible Films from Aloe vera (Aloe barbadensis) Incorporated with Yellow Sweet Potato Starch and Glycerol. FTHS Journal Vol. 2(2) Tahun 2019. https://doi.org/10.22219/fths.v2i2.12985</p> <p>5. The Effect of Aloe vera and Glycerol Addition on Edible Film of Lesser Yam Starch (Dioscorea esculenta L. Burkill. FTHS Journal Vol. 3(1) Tahun 2020. https://doi.org/10.22219/fths.v3i1.13057</p> <p>Kajian Karakteristik Fisik dan Mekanik Edible Film Berbasis Pati Umbi Suweg (Amorphophallus paeoniifolius) dengan Variasi Konsentrasi Lilin Lebah. FTHS Journal Vol. 3(1) Tahun 2020. https://doi.org/10.22219/fths.v3i1.13061</p>
Date of Last Amendment	23 rd Agustus 2022