



UNIVERSITI TEKNOLOGI MARA

AGA202: PERENNIAL HERBAL PLANT PRODUCTION

Course Name (English)	PERENNIAL HERBAL PLANT PRODUCTION APPROVED
Course Code	AGA202
MQF Credit	3
Course Description	This course will interactively engage students cognitively on major industrial perennial herbal crops in pharmaceutical industry. Students will identify, discuss and explain economic importance of the above crop as well as the agronomic practices. Topics such as crop protection and after harvest activities including processing of products of the above crops will also be part of the interactive learning Process.
Transferable Skills	Knowledge gained from lectures via discussions with lecturers. Practical experience in Field Work and Project.
Teaching Methodologies	Blended Learning, Discussion, Project-based Learning
CLO	CLO1 Explain the techniques of planting, maintenance and harvesting of the major varietal of perennial plants and be able to relate the biotic and abiotic factors. CLO2 Discuss in current issues in major perennial herbal plant production in Malaysia through oral presentation and written assignments. CLO3 Demonstrate the postharvest system and processing techniques of the crops discussed.
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction 1.1) Definition of perennial herbs Major perennial herbs in Malaysia 1.2) 1) Tongkat Ali : Eurycome longifolis 1.3) 2) Belalai gajah : Clinacanthus nutan 1.4) 3) Halia bara : Zingiber officinale var. rubrum 1.5) 4) Serai Wangi : Symbogon nardus	
2. Soil and Climatic Requirements 2.1) Types of soil 2.2) Physical and chemical properties of soil 2.3) Topography 2.4) Environmental factors 2.5) 1) Temperature 2.6) 2) Light interception 2.7) 3) Relative humidity 2.8) 4) Rainfall precipitation	
3. Propagation 3.1) Seed propagation 3.2) Vegetative propagation 3.3) a) Budding 3.4) b) Grafting 3.5) c) Cutting 3.6) Micropropagation 3.7) Nursery management	
4. Field planting 4.1) Land preparation 4.2) Planting density	

5. General maintenance

- 5.1) Fertilizer application
- 5.2) Irrigation
- 5.3) Integrated pest management (Insect, disease and weed)
- 5.4) Special requirement management
- 5.5) a) shading
- 5.6) b) pruning

6. Harvesting

- 6.1) Maturation
- 6.2) Technique of harvesting

7. Methods of processing and packaging

- 7.1) Post harvest handling
- 7.2) Processing (manual, milling etc)
- 7.3) Final herbal production

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Written assignment	10%	CLO2
	Individual Project	Post harvest plant project	20%	CLO3
	Test	Online test	30%	CLO1

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> • Herbal Medicinal Research Centre. 2002, <i>Compendium Of Medicinal Plants Used In Malaysia.</i>, Vol. 1 & 2 Ed., Institute For Medical Research Malaysia • Khadijah Hussin. 2006, <i>Anatomical Atlas Of Malaysian Medicinal Plants</i>, vol. 1 Ed., Penerbit UKM Universiti Kebangsaan Malaysia • Khadijah Hussin and Mohamad Ruzi Abdul Rahman. 2006, <i>Anatomical Atlas Of Malaysian Medicinal Plants</i>, Vol. 2 Ed., Penerbit UKM Universiti Kebangsaan Malaysia • Muhamad Zakaria and Mustafa Ali Mohamad 2010, <i>raditional Malay Medicinal Plants.</i>, Institut Terjemahan Negara Malaysia Berhad. Malaysia • Shukla, R.S. and Chandel, P. 2005, <i>Textbook of Plant Ecology: Ethnobotany and Soil Science</i>, 10th Ed., S Chand & Co Ltd • Swami, S.,Dutt, H.D. and Vasisht, R.K 2006, <i>Compendium of Medicinal and Aromatic Plant. Asia.</i>, Vol. 2 Ed. • Wong, J. 2009, <i>Grow Your Own Drugs: Easy Recipes for Natural Remedies and Beauty Treats Collins</i>, 1st Ed.

Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources