IDESCIPLINA: Tópicos Especiais: Advance in Horticultural Science in China.

CURSO: ( x ) Mestrado       ( x ) Doutorado
NÚMERO DE CRÉDITOS: 02       CARGA HORÁRIA: 30
NÚMERO MÁXIMO DE ALUNOS: 20   NÚMERO MÍNIMO DE ALUNOS: 3
PERÍODO DE OFERECIMENTO: 21 a 26 de fevereiro de 2019

DOCENTE(S) RESPONSÁVEL(EIS): Prof. Dr. Lin Chau Ming e Profa. Dra. Danfeng Huang
INSTITUIÇÃO/DEPARTAMENTO: Departamento de Horticultura

DISTRIBUIÇÃO DA CARGA HORÁRIA:

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<th>TEÓRICA: 23</th>
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<td>OUTRAS: 0</td>
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OBJETIVOS DA DISCIPLINA:

After completing this course student will be able to:

1) Have the basic information about species and varieties of vegetables in China;
2) Identify the applications of digital technology in horticulture in China;
3) Understand basic information about organic farming in China;
4) Understand vegetable, fruit and ornamental production in China.
METODOLOGIA DE ENSINO (Informar resumidamente, como será desenvolvida a aula, especificando os recursos didáticos a serem empregados)

Using theoretical classes on all informed topics and group seminars on special issues, proposed by professor. Most of classes will be done using data show. Some classes will be developed in reading scientific papers in English.

CRITÉRIOS DE AVALIAÇÃO DA APRENDIZAGEM:
Course assessment consists of written assignments (PPT or word), the subjects will be given to groups in the first class. Written assignments must be printed and handed into the professor in the last class In addition, the same subjected treated in the written assignment must be presented by the groups of students (presentations 15–20 min/group, discussion 5-10 min, each time) in the class.

EMENTA PROGRAMÁTICA:
This course provides an overview of advance in horticulture in China including innovation and technology in protected horticulture, brief introduction of vegetable, fruit and flora production in China, overview of nitrogen dynamics in organic farming systems in China.

CONTEÚDO PROGRAMÁTICO:
(Descrever os assuntos a serem abordados, com as subdivisões necessárias).

Topics:
1 Overview of greenhouse production and new technology in China
2 Vegetable productions in China
3 Chinese vegetable species and varieties
4 Machinery for vegetable production in China
5 Ornamental horticulture in China
6 Fruit productions in China
7 Nitrogen dynamics in organic farming systems
8 Melon modeling in greenhouse production

Outlines and questions for discussion:
Chapter 1 Overview of greenhouse production and new technology in China
Topics:
• Overview of protected horticulture
• Challenges and issues of protected horticulture in China
• Application of digital technology in protected horticulture
• Protected horticulture for the future

Questions for discussion:
• Could our students here separate 3-4 groups for discussion?
• Shall we discuss one topic and find the best one and the group each time?
• Is it possible we use the PPT to discuss together?
• How about protected horticulture in Brazil?
• What kinds of crops are suitable in greenhouse production?
• Explain the issues of greenhouse horticulture development in Brazil.
• Give the examples of digital or smart agriculture in the world.

Chapter 2 Vegetable productions in China
Topics:
• Overview of vegetable production in the world
• Vegetable production chains—take Shanghai as the example
• Challenges and issues of vegetable production in China
• Innovation and new technology
• For the future
• Questions for discussion:
  • Introduction of vegetable production in Brazil.
  • Yield and quality, which one is more important? Why?
  • Vegetable products for export in Brazil.
  • New technology of vegetable cultivation in Brazil.

Chapter 3 Chinese traditional vegetable species and varieties
Topics:
• Chinese Traditional Vegetables
• Top Ten Vegetable Species
• Wild Vegetables in China
• Special Varieties from Europe and America
• Varieties Delivered to Restaurants and Households
• Ornamental Vegetables

Questions for discussion:
• What kinds of Chinese Traditional Vegetable species you are interested in?
Which Chinese vegetable species or varieties are suitable for Brazilian?
• Are there some special vegetable Species or varieties in Brazil suitable for
Chinese?
• New technology in assessment and breeding of vegetable geneplasm in Brazil.

Chapter 4 Machinery for vegetable production in China
Topics:
• Demands of vegetable production mechanization
• National strategy of agricultural mechanization
• Mechanical equipment of the main production links
• Research & Development directions
• Conclusions and prospects

Questions for discussion:
- The needs of mechanized farming in Brazil.
- The mechanical equipments are using for vegetable production in Brazil.
- Mechanization for the future.

Chapter 5 Ornamental horticulture in China

Topics:
- Overview of flower industry in China
- Flower species and varieties in China
- New technology in flower production in China
- Conclusions

Questions for discussion:
- Differences in flower production between Brazil and China?
- New technology of ornamental plant breeding in Brazil.
- As the reference from Brazil, suggestions in improving the ornamental production systems in China.

Chapter 6 Fruit productions in China

Topics:
- Overview of fruit industry in China
- Fruit species and varieties in China
- New technology in fruit production in China
- Conclusions

Questions for discussion:
- Differences and reasons in fruit production between Brazil and China?
- Introduction of fruit product exports in Brazil.
- As the reference from Brazil, suggestions in improving the fruit production systems in China.

Chapter 7 Nitrogen dynamics in organic farming systems

Topics
1 Organic nitrogen uptake plant
   - Plant uptake of organic nitrogen in organic farming system
   - Michenium of crop organic nitrogen
   - Competitions of organic nitrogen uptake between plant and microorganism

2 Nitrogen dynamics in organic farming systems soil
   - Nitrogen input and output in organic farming systems soils
   - Structures of Microbes and nitrogen dynamics in organic farming
   - Enzyme activities and nitrogen dynamic in organic soil

Questions for discussion:
- Organic farming and organic products in Brazil
- Nitrogen fertilizer application in Brazil.
- What is purpose of organic farming?
- Do you support the organic farming? Explain the reasons please.

Chapter 8 Melon modeling in greenhouse production

Topics:
- The importance of melon modeling in greenhouse production
- Crop growth modeling for optimum management of fertilization
- Crop growth modeling for optimum management of irrigation
- Simulation of melon morphology, physiology and quality
- Image acquisition equipment and technology used in melon modeling
Questions for discussion:
• Are there some special melon varieties in Brazil? Is it the important crop in Brazil?
• What is the purpose of crop modeling? Are there some examples in your study or from reading materials?
• Methodology of fertilization and irrigation determination.

BIBLIOGRAFIA BÁSICA:
✧ Ke Shunkui, Ding Ming, Li Lei, Niu Qinliang, Huang Danfeng. Grafting watermelon seedling production management system based on process control strategy(EL). Journal of Shanghai Jiaotong University (Science). 2012, 17(2): 129-134.
✧ Ding□ Ming, Lu□ Shenglian, Li□ Lei, Huang Danfeng. Analysis and Design of a Management System for the Seedling Production Based on ERP. Advanced Materials


Yangwu Deng, Danfeng Huang. Isolation and characterization of a GS2 gene in melon (Cucumis melo L.) and its expression patterns under the fertilization of different forms of N. Molecular Biotechnology. 2010, 44(1):51-60.


Assinatura:

Nome do Docente Responsável: Dr. Lin Chau Ming

Aprovação:

Reunião do Conselho do Programa
Data: 
Coordenador: