ENTOMOLOGY

(AGRICULTURE Specialization, 2nd Year of study, 2nd Semester)

Course category: Core discipline

Course holder: **Prof.dr. Mihai Tălmaciu**

Discipline objectives (course and practical works)

Creating the necessary fundamental knowledge and understanding specific to operation of with the concept of entomology, while discipline aims to identify the students with the main the morphological and anatomical characters of insects biology, ecology and combating the main agricultural plant pests.

- Acquaint students with the morphology and anatomy of insects, insect biology and ecology.
- Getting started forecasting and warning of the chemical treatments;
- Knowledge of the main methods for preventing and pest control;
- Knowledge the main pests in orchards, vineyards, vegetable crops, industrial crops and cereals.
- Knowing the types of agro-availability of pesticides, pesticide ownership of the main groups used in pest during the growing season and the main pest control schemes.

Contents (syllabus)

Course (chapters/subchapters)
Introduction : Object of agricultural entomology. Short history of development worldwide and in our country; Link to other sciences.
CAP.1. The general characteristics of insects: The morphology of the insect body; Anatomy and physiology of insects; Getter device.
CAP.2. The insects biology: The reproduction from insects; Developing the insects; Generations and evolutionary cycle; Diapause.
CAP.3. The insects ecology: Factors who influence of the development of insects; The spread of the insects;
CAP.4. Estimating the damage and pest damage: The phytosanitary control; Harm and damage caused by crop pests.
CAP.5. Prognosis and warning: Elaboration of forecasts; Warning applying the treatments
CAP.6. The general methods for combating the animal pests: Phytosanitary quarantine measures; Agrophytotechnical methods; Mechanical methods; Physical methods;
CAP. 7. Biological means.
CAP. 8. The classification of the animal pests.

Practical works
The insect morphology
The insect anatomy
The insect biology
The insect ecology
Key dichotomy to determine the main orders of insects
Develop graphic warning of the chemical treatments.
Methods of prevention and pest control

Bibliography

1. Filipescu C., Georgescu T., Tălmaciu M., 1989 - Practical Entomology. General Part. Internal use, Iaşi.
2. Georgescu T., Tălmaciu M., 1994 - Plant Protection vineyards and orchards. Course of Entomology. The special part and control technologies. Internal use, Iaşi.
3. Perju T., 1995 - Agricultural entomology, integrated agro-protection component. Publisher Ceres, Bucharest.
4. Tălmaciu M., Georgescu T., Badeanu Marinela, 1998 - Entomology. The special part. Internal use, Iaşi.
5. Talmaciu M.,2002 - Protectia plantelor - Entomology, ongoing internal use. U.S.A.M.V. Iasi.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Written examination	Knowledge and understanding of the concepts contained in progress	70%
Seminar / lab	Practicing the use of sources of information, preparation and presentation of reports	30%

Contact

Prof.dr. Mihai Tălmaciu
Faculty of Horticulture, IULS
3 Mihail Sadoveanu Alley, Iasi, 700490, Romania
telefon: 0040 232 407442
E-mail: mihai.talmaciu@iuls.ro

Entomology (YEAR III SEMESTER II)

Credit value (ECTS) 4

Course category
Domain (Imposed)

Course holder:
Prof.dr. Mihai Tălmaciu

Discipline objectives (course and practical works)

Theoretical and practical knowledge of the groups of pests affecting cultivated plants or spontaneous, warning, prevention and pest control.
The ability to identify, formulate, explain problems and propose specific entomology and interpret coherently solving them.
Professional development through activities supporting essays on various topics specific discipline, manifesting positive and responsible attitudes towards science, developing interest in the application of biological protection technologies to protect crop science.

Contents (syllabus)

Course (chapters/subchapters)
The main pests of grain crops: habitat, description, biology, ecology, plants attacked, pest manner, measures to prevent and combat nematodes wheat grains - Anguina tritici Steinb .; Wheat thrips - Haplotrips Kurdj tritici. ; Bugs cereals - Eurygaster sp. and Aelia spp. ; Humpbacked beetle - Zabrus tenebrioides Goeze; Cărăbuşeii cereals - Anisoplia sp. ; Corn leaf weevil - Tanymecus dilaticollis Gyll. ; Corn borer - Ostrinia nubilalis Hb. ; Cutworm - Scotia segetum Schiff; Swedish bite - Oscinella frit L.; Yellow cereal fly - Chlorops pumilionis Bjerk
The main pests in industrial crops: habitat, description, biology, ecology, plants attacked, pest manner, measures to prevent and combat; Beet nematode - Heterodera Schmidt schachtii. ; Beet black aphid - Aphis fabae Scop .; Beet flea dirt - Chaectocnema tibialis Ill. ; Beet weevil - Bothynoderes punctiventris Germ. ; Răţişoara beet - Tanymecus palliatus F .; Steppe caterpillar - Loxostege L. sticticalis; Colorado beetle - Leptinotarsa decemlineata Say .; Flax flea - Aphthonia euphorbiae Schrank .; Flea hemp - Psylliodes attenuator Koch .; Beetle earthy - Opatrum sabulosum L .; Sunflower moth - Homoeosoma nebulella H**b.**
The main pests to forage plants: habitat, description, biology, ecology, plants attacked, pest manner, measures to prevent and combat: red alfalfa beetle - Phytodecta Brügg fornicator; Ladybug alfalfa - Subcoccinella 24-dotted L .; Alfalfa root weevils - Otiorrhynchus L. ligustica; Flowers of clover weevil - apricans Apion Herbst; Wasp clover seeds - Bruchophagus gibbus Boh; Louse green peas - Pisum Acyrthosophon Harr; Pea weevil - Bruchus pisorum L., bean weevil - Acanthoscelides obsoletus L.

The main pests in vegetable crops in the field and shelter pests of plants cruciferous (cabbage, cauliflower) mole cricket - Gryllotalpa Gryllotalpa barking. ; Red cabbage bug - Eurydema adorned L .; Cabbage aphid gray - Brevicoryne brassicae L .; Black cabbage flea - Phyllotreta atra F .; Striped cabbage flea - Phyllotreta nemorum L .; Galicolă weevil cabbage - Ceuthorrhynchus pleurostigma Marsh; Cabbage white butterfly - Pieris brassicae L.; Buha cabbage - Mamestra brassicare L .; Moth - Plutella maculipenis Curt .; Cabbage fly - Delia brassicae BChE; Nematode bulbs - D. dipsaci Kühn. ; Musca onions - Delia antiqua Meigs.

Glasshouse crop pests: galicol the root nematode - Meloidogyne incognita Chitw .; Galicol flowers nematode - Meloidogyne arenaria Neal. ; Thrips plant emissions - Heliothrips haemorrhoidalis BChE .; Greenhouse whitefly - Trialeurodes vaporariorum Westw.

The main pests of tree plantations: the trees red mite - Panonychus ulmi Koch. ; San José Scale - Quadraspidiotus perniciosus Comst. ; Woolly aphid - Eriosoma lanigerum Hausm .; Green apple aphid - Aphis trees De Geer .; Hairy beetle - Epicometis hirta Poda; May beetle - Melolontha melolontha L .; Apple blossom weevil - Anthonomus pomorum L .; Bud weevil - Sciaphobus squalidus Gyll .; Careers crust - Ruguloscolytus rugulosus Ratz. ; Borer strains - Cosus L. cosus; Borer branches - Zeuzera L. pyrina; The worm apples - Laspeyresia pomonella L.; The worm plums - Grapholitha funebrana Tr.; Elbows green - frosted L. Operophtera; Bellied golden butterfly - Euproctis L. chrysorrhoea; Ring - Malacosoma L. neustria; Hairy caterpillar mulberry - Hyphantria cunea Drury; Musca cherries - Rhagoletis cerasi L.

The main pest of vine plantations: galicol mite vine **-** Eriophyes vitis Nal. Phylloxera - Phylloxera vastatrix Planch. ; Vine mealy - pulvinar Vitis L .; Shear - Lethrus apterus Laxmi .; Marbled beetle - Polyphylla Fullo L .; Green beetle vine - Anoma solid Er .; Ţigărarul - Byctiscus Betulae L .; Grape moth (eudemisul) - Lobesia botrana Den. et Schiff; Cochilisul vine - Eupoeccilia ambiguella Hb.

The main pests in storage areas: habitat, description, biology, ecology, plants attacked, pest manner, measures to prevent and combat: mite (spider) flour - Acarus siro L.; Meal worm or knurled - Tenebiro L. molitor; Gândăcelul flour - Tribolium confusum DUV. ; Beetle bread - Stegobium L. paniceum; Wheat weevil - Sitophilus granarius L.; Cereals gray moth - Sitotroga cerealella Oliv. ; Dried fruit moth - Fruits interpunctella Hb .; Grey flour moth - Anagasta kühniella Zell.

Practical works

Recognition of the main pests of grain crops :nematode wheat grains - Anguina tritici Steinb .; Wheat thrips - Haplotrips Kurdj tritici. ; Bugs cereals - Eurygaster sp. and Aelia spp. ; Humpbacked beetle - Zabrus tenebrioides Goeze; Cărăbuşeii cereals - Anisoplia sp. ; Corn leaf weevil - Tanymecus dilaticollis Gyll. ; Corn borer - Ostrinia nubilalis Hb. ; Cutworm - Scotia segetum Schiff; Swedish bite - Oscinella frit L.; Yellow cereal fly - Chlorops pumilionis Bjerk

Recognition of the main pests in industrial plants; Beet nematode - Heterodera Schmidt schachtii. ; Beet black aphid - Aphis fabae Scop .; Beet flea dirt - Chaectocnema tibialis Ill. ; Beet weevil - Bothynoderes punctiventris Germ. ; Răţişoara beet - Tanymecus palliatus F .; Steppe caterpillar - Loxostege L. sticticalis; Colorado beetle - Leptinotarsa decemlineata Say .; Flax flea - Aphthonia euphorbiae Schrank .; Flea hemp - Psylliodes attenuator Koch .; Beetle earthy - Opatrum sabulosum L .; Sunflower moth - Homoeosoma nebulella Hb.
Recognition of the main pests in forage plants: alfalfa beetle red - Phytodecta Brügg fornicator; Ladybug alfalfa - Subcoccinella 24-dotted L .; Alfalfa root weevils - Otiorrhynchus L. ligustica; Flowers of clover weevil - apricans Apion Herbst; Wasp clover seeds - Bruchophagus gibbus Boh; Louse green peas - Pisum Acyrthosophon Harr; Pea weevil - Bruchus pisorum L., bean weevil - Acanthoscelides obsoletus L.
Recognition of the main pests in vegetable crops in the field and shelter pests of plants cruciferous (cabbage, cauliflower) mole cricket **-** Gryllotalpa Gryllotalpa barking. ; Red cabbage bug - Eurydema adorned L .; Cabbage aphid gray - Brevicoryne brassicae L .; Black cabbage flea - Phyllotreta atra F .; Striped cabbage flea - Phyllotreta nemorum L .; Galicolă weevil cabbage - Ceuthorrhynchus pleurostigma Marsh; Cabbage white butterfly - Pieris brassicae L.; Buha cabbage - Mamestra brassicare L .; Moth - Plutella maculipenis Curt .; Cabbage fly - Delia brassicae BChE; Nematode bulbs - D. dipsaci Kühn. ; Musca onions - Delia antiqua Meigs. **Recognition crop pests in greenhouses:** galicol the root nematode - Meloidogyne incognita Chitw .; Galicol flowers nematode - Meloidogyne arenaria Neal. ; Thrips plant emissions - Heliothrips haemorrhoidalis BChE .; Greenhouse whitefly - Trialeurodes vaporariorum Westw.
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4. Georgescu T., 2004 – Pests of trees and shrubs. Prevention and control. Publisher "Ion Ionescu de la Brad" Iaşi.
5. Georgescu T., 2006 – Horticultural entomology. Publisher "Dosoftei" Iaşi.
6. Ghizdavu I. şi colab., 1997 – Agricultural Entomology. Didactic and Pedagogical R.A., Bucharest.
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8. Roşca I., Oltean I., Mitrea I., Tălmaciu M., Petanec D.I., Bunescu H.Şt., Istrate Rada, Tălmaciu Nela, Stan C., Micu Lavinia Mădălina, 2011 – General and Special entomology treaty, Publisher Alpha MDN, Buzau
9. Tălmaciu Mihai, 2003 – Plant protection - Entomology Publishing "Ion Ionescu de la Brad" Iaşi.
10. Tălmaciu M., 2005 - *Agricultural Entomology, Publisher Ion Ionescu de la Brad, Iaşi.*

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Written examination	Knowledge and understanding of the concepts contained in progress	70%
Seminar / lab	Practicing the use of sources of information, preparation and presentation of reports	30%

Contact

Prof.dr. Mihai Tălmaciu
Faculty of Horticulture - USAMV Iaşi
Aleea Mihail Sadoveanu nr. 3, Iaşi, 700490, România
telefon: 0040 232 407442
E-mail: mtalmaciu@yahoo.fr