

IS 01 International Course on Parasitic Plants: Problems and Solutions

Content

Course content and schedule

Several theoretical and practical sessions in English divided into various thematic blocks are scheduled. The course will take place over 5 days, with morning and afternoon schedules, and the thematic blocks will be divided into multiple sessions.

- **Part 1. Parasitic plants: species, characteristics, distribution.**
Session 1.1. Types, biology, main species (1 hour).
Session 1.2. Spreading and problems (1 hour).
Day 1, 2 theoretical sessions. Proposed schedule: 10.00-12.00h.

- **Part 2. Management of parasitic weeds: cultural, chemical, biological.**
Session 2.1. Breeding for resistant crop varieties, intercrops with allelopathic plants, trap crops, catch crops etc (1 hour).
Session 2.2. Biocontrol, natural products (1 hour).
Day 1, 2 theoretical sessions. Proposed schedule: 12.30-13.30h and 16.00-17.00h.

- **Part 3. Isolation and synthesis of compounds affecting the growth of parasitic weeds.**
Session 3.1. Strigolactones, strigolactone analogues and mimics (1 hour).
Session 3.2. Identification and isolation of compounds with activity on parasitic plants (1 hour).
Day 2, 2 theoretical sessions. Proposed schedule: 9.00-11.00h.
Session 3.3. Studying bioactivity and mechanisms of action (2 hours).
Session 3.4. Synthesis of compounds with bioactivity on parasitic weeds (1 hour).
Day 2, 2 theoretical sessions. Proposed schedule: 11.30-13.30h and 16.00-17.00h.

- **Part 4. Performing the isolation of natural products with bioactivity on parasitic weeds.**
Session 4.1. Isolating bioactive products from an extract of Saussurea costus (3 hours).
Day 3, practical session. Proposed schedule: 9.00-12.00h.
Session 4.2. Characterization of bioactive products (2 hours).
Day 4, practical session. Proposed schedule: 9.00 a 11.00h.

- **Part 5. Bioassays on parasitic weeds, germination and inhibition of growth. Data processing.**
Session 5.1. Characterization of bioactivity on parasitic plants. Performing bioassays (3 hours).
Day 4, practical session. Proposed schedule: 11.30-13.30h and 16.00-17.00h.
Session 5.2: Processing data, statistics (1 hour).
Día 4, practical session. Proposed schedule: 17.00-18.00h.

- **Evaluation.**
Day 5, 1 hour session. Proposed schedule: 9.00-10.00h.

- **Discussion and closing remarks, distribution of course certificates.**
Day 5, 1 hour session. Proposed schedule: 11.00-12.00h.

Course objectives

The main aim is to train the students in research of parasitic plants. To achieve this, the following objectives are proposed:

- Understand the main species of parasitic plants that affect crops and their characteristics.
- Learn about the methods used for parasitic plant control.
- Gain a general overview of the main compounds with activity against parasitic plants, of both natural and synthetic origin.
- Become familiar with techniques for the isolation of bioactive natural products.
- Learn to conduct bioassays on parasitic plants, including both germination stimulation and growth inhibition assays.

Course evaluation

To successfully complete the course, students must attend all the theoretical and practical sessions. Students who attend all sessions will receive a certificate of attendance. Students must meet the following criteria to pass the course:

-Submission of an evaluable activity with bioactivity results from the bioassays conducted during the practical session. Students must achieve a grade of at least 5 out of 10 on this activity.

-Passing a final test on the course's theoretical content. Students must achieve a grade of at least 5 out of 10 on this test.

If both evaluable activities are successfully completed, the student will pass the course and get the certificate of completion.