How to reach Crop Protection Technology Laboratory

International Airport "Sandro Pertini"

A5 - Aosta
T1 Monte Bianco

A4 - Milano

A32 - Susa
T4 Frejus

Rivoli

Torino

Beinasco

Grugliasco

Moncalieri

Venaria Reale

Collegno

Caselle

A55 - Pinerolo

A6 - Savona
A33 - Cuneo

A21 - Piacenza

A45° 03'58.7"N 7° 35'19.1"E

International Airport ‘Sandro Pertini’

Highway: exit C.so Allamano or Interporto SITO

Railway stations: Torino Porta Susa or Porta Nuova + tube line 1 and bus line 76; Grugliasco + bus line 76
Activities of Crop Protection Technology Research Group are carried out at the Crop Protection Technology Laboratory (over 600 m² surface) and, thanks to the instruments and devices the lab is equipped with, it is a reference test station in Europe. Also, an external wind tunnel (250 m² surface) and a field test area to assess potential drift from sprayers are available.

Activities of Crop Protection Technology Research Group mainly deal with pesticide application equipment, operator safety and environmental impact related to spray distribution.

Main activities of Crop Protection Technology Research Group includes:
1. extension services such as training for all interested parties entering or already within the industry;
2. national and international Standardization activities that ensure and encourage compliance with best practices;
3. independent appraisal, encouragement and development of enhanced spraying methods;
4. commercially sponsored applied research sharing these same objectives;
5. certification and inspection of commercial sprayers and components.

EXTENSION SERVICE
Training and dissemination of research results and of the activities carried by Crop Protection Technology Research Group is made through:
- training of advisers and farmers;
- training of advisers of PPP industries (e.g. Magis, Tergeo projects);
- refreshment and adjournment courses for technicians and sprayers/sprayer components manufacturers (e.g. Soft project);
- field demonstrations and fair exhibitions;
- specific training to prevent and reduce point and diffuse sources (e.g. TOPPS projects).

NATIONAL AND INTERNATIONAL STANDARDIZATION
In this ambit the activity of Crop Protection Technology Research Group is mainly addressed to develop and implement new standardised test methods and to design and set up the necessary test benches. In this view, the research group is involved in working groups ISO/TC 23/SC6 (Equipment for Crop Protection), CEN TC144/WG3 and in ENTAM (European Network for Testing of Agricultural Machines).

Among the International Standards developed with the contribution of the Crop Protection Technology Research Group there are:
- ISO 21278: induction hoppers;
- ISO 12809: sprayers pumps;
- ISO 22401: measurement of potential drift generated by field crop sprayers;
- ISO 22368: internal and external sprayer cleaning;
- ISO 10988 and ISO 28139: knapsack mistblowers;
- ISO 19932: knapsack sprayers.

DEVELOPMENT OF ENHANCED SPRAYING METHODS
Among the sprayer and system prototypes developed by Crop Protection Technology Research Group in recent years there are:
A. sprayer for runner bean application;
B. radio controlled sprayer for application on protected crops;
C. electronic system for PPP direct injection on field crop sprayers;
D. 'Crop Adapted Spray Application' system able to adapt the spray distribution profile, the spray volume and the spray quality to the size and shape of orchards and vineyards and to the environmental conditions (ISAFRUIT project);
E. vineyard sprayer able to adjust the spray profile on both sides according the transversal slope;
F. GPS controlled spraying system for field crop sprayers to optimize the application along the field headlands;
G. axial fan enabling to address the air flow evenly along the whole vegetation wall to apply;
H. dedicated sprayer for application of kiwi orchards trained at 'Pergola' system.

APPLIED RESEARCH
Public (Regional Administration, Ministries of Agriculture, of Environment and of University, European Union, etc.) and private (sprayer manufacturers, chemical companies, etc.) fundings concern in particular:
- improved techniques for spray application;
- solutions to prevent and reduce spray drift;
- operator and environmental safety.

TOPPS is the acronym for Train Operator to Promote Practice and Sustainability individuated by ECPA (European Crop Protection Association) to develop a set of European projects aimed at reducing water (both surface and ground water) contamination with pesticides.

Thanks to TOPPS Projects Best Management Practices (BMP) were defined and disseminated at European level in order to promote the correct use of plant protection products in the farm so to reduce risks of point and diffuse source water contamination.

The materials produced and the software realised in the ambit of TOPPS Projects with the contribution of Crop Protection Technology Research Group are freely downloadable at the following websites:
- www.topps.unito.it