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3. European Conservation Agriculture Federation (ECAAF). Rond Point Schumann 6 Box 5. Brussels (Belgium) www.ecaf.org

Introduction

TOPPS (Train the Operator to Promote best Practices and Sustainability) is the demonstration project initiated by the European Crop Protection Association (ECPA) and partners in 14 countries and which focuses on promoting Best Management Practices for the use and application of pesticides in a sustainable way in order to protect natural water resources.

The overall objective of this multi-partner EU-wide demonstration project is to reduce pesticide point and diffuse source contamination in water at a European scale. Within this project, project partners and stakeholders will develop further EU Best Management Practices (BMPs) to mitigate diffuse sources and which will complement the already developed and existing BMPs for point source contamination. These commonly agreed BMPs will be promoted through various information, training, demonstration and dissemination activities, including cooperation and exchange with stakeholders.



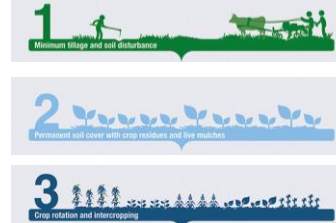
Best Management Practices

Table. Runoff and Erosion mitigation measures toolbox)

Soil management	<ul style="list-style-type: none"> • Reduce tillage intensity • Manage tramlines • Prepare rough seedbed • Establish in-field bunds 	<ul style="list-style-type: none"> • Manage surface soil compaction • Manage subsoil compaction • Do contour tilling/disking • Increase organic matter
Cropping practices	<ul style="list-style-type: none"> • Use Crop rotation • Do strip cropping • Enlarge headlands 	<ul style="list-style-type: none"> • Use annual cover crops • Use perennial cover crops • Double sowing
Vegetative buffers	<ul style="list-style-type: none"> • Use in-field buffers • Establish talveg buffers • Use riparian buffers • Use edge-of-field buffers 	<ul style="list-style-type: none"> • Manage field access areas • Establish hedges • Establish/maintain woodlands
Retention structures	<ul style="list-style-type: none"> • Use edge-of-field bunds • Establish veget. ditches 	<ul style="list-style-type: none"> • Establish artificial wetlands/ponds • Build fascines
Adapted use of pesticides & fertilizer	<ul style="list-style-type: none"> • Adapt application timing • Optimize seasonal timing 	<ul style="list-style-type: none"> • Adapt product and rate selection
Optimized irrigation	<ul style="list-style-type: none"> • Adapt irrigation technique 	<ul style="list-style-type: none"> • Optimize irrigation timing and rate

Focussing on

The Three Principles of Conservation Agriculture



Source: FAO

Establishment of Multifunctional Margins in field



Training Activities

The aim of the training days was to raise awareness about soil and water conservation, showing them the importance of knowing some soil characteristics and implementing Conservation Agriculture principles in farms to greatly increase soil health and water quality.



Evaluating soil characteristics, and comparing soil structure and Soil Organic Carbon between Conservation Agriculture and conventional agriculture.



Showing water and soil relationship and how soil management influence soil water holding capacity and water movement through agricultural soil.



Demonstrating through a runoff simulator how Conservation Agriculture reduces runoff and erosion, and how to avoid the movement of pollutants to surface water.

More than 4000 farmers and advisers trained!!

Results of a survey distributed after trainings

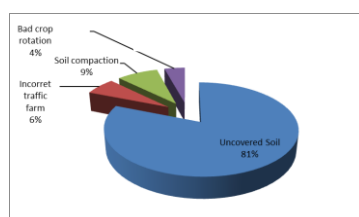


Figure. Perception of what is the main cause why runoff and erosion appear

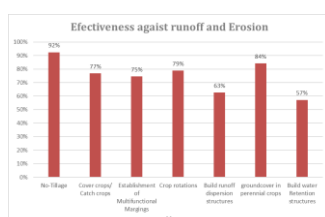


Figure. Perception of the effectiveness of the measures

- According to the results of the survey, 81% of the trainees think that runoff and erosion are caused because the coverage of soil is not enough.
- Introducing the three principles of Conservation Agriculture in fields is considered the most effective way to reduce runoff and erosion keeping the profitability of farms

Conclusions

After TOPPS practical training showing the benefits of implementing Conservation Agriculture in fields, this project has demonstrated that the awareness of farmers and technicians about conserving agricultural soils to reduce runoff and erosion becomes higher. Attendees to these training courses also consider that introducing the three principles of Conservation Agriculture in fields, together with multifunctional margins, are the most effective agricultural practices to prevent runoff and erosion. In consequence, the most successful way to improve soil health and reduce water contamination.