



**Deliverable 1.10: Training and advising SETA material.
Second update**

**Accelerating Innovative practices for
Spraying Equipment, Training and
Advising in European agriculture.**



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Abstract

This document presents a summary of all training SETAs collected in the third data screening until May 2021 by all the partners of the project. This work is included in the first work package (inventory of research results and industry solutions on SETA in European Agriculture).

The training material collected, which includes apps, videos, presentations, etc., were also screened to assure that they will be useful for the end-user. After the selection and classification process, a total of 84 SETAs about training material have been identified and will be uploaded into the INNOSETA platform in the following steps of the project. Currently, the INNOSETA platform has 405 SETAs about training.



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Introduction

The objective of WP1 is to collect and select the latest innovations and advances in the topic of spraying and application techniques of PPPs in four cropping systems: open field, greenhouse, orchards and vineyards. These innovations are defined as SETA (Spraying, Equipment, Training and Advising) and are gathered in the form of:

- Peer reviewed and technical papers
- National and international projects
- Industry products
- Training and advising materials

Training material is one of the key groups of material regarding INNOSETA project, it is important to feed the INNOSETA platform with all kinds of training materials. As it is specified in the Grant Agreement, the platform has to be updated on a yearly basis, so a second search of documents, applications, websites, videos and other type of material already developed by different universities, research institutions, official bodies and private companies, following the objectives of the project, has been made, with a subsequent classification procedure involving most of the partners. Each partner has been responsible to find and locate the most useful material already available in their countries. UPC, as responsible of the task, has been in charge to find not only the training material available in Spain but also to collect the most useful training material available in other countries not represented in the project. Search has been extended also to other countries and zones out of the EU (USA, Canada, Australia, etc.) where useful training material has been developed and widely disseminated.

The present deliverable (1.10) describes the methodology used to collect and to screen the new data during the second round of the inventory.

1. Phase 1: Initial identification

1.1 SETAs collection procedure

In this third round of SETAs inventory, partners involved in WP1 were asked by the WP leader UNITO to look and collect data about training and advising material. The basic criteria for data gathering were to find training and advising materials dealing with innovative

technologies for PPPs spraying, allowing farmers, advisory services, and other target groups to optimize pesticide application, to avoid environmental pollution such as drift and to minimize PPPs residues on products.

As agreed between the partners before starting the first round of the inventory, a SETA is:

- I. *whatsoever component, device, tool etc. that can be fitted to spraying machineries,*
- II. *a whole sprayer that presents innovative components/accessories,*
- III. *devices/tools enhancing the environmental sustainability of spraying operation (e.g. closed transfer systems)*
- IV. *training and advising material referred to sprayers and spraying operations.*

Therefore, also for the third round all SETAs had to belong to one of the categories listed above. Training and advising materials not directly connected to spraying and application techniques of PPPs were excluded from the search.

2. Phase 2: Survey

2.1 Data collection: roles of partners, data sources and search parameters

All partners involved in this task (UNITO, ILVO, UPC, IFV, VISAVI, AUA-CERTH, ZLTO, ZODR) were instructed to look for training and advising material using the same keywords used for the first-round inventory plus other keywords they considered to be relevant. Keywords' list was updated and harmonized to facilitate the SETA collection.

The new collected SETAs were uploaded directly in the platform in pending format as described in D1.9 during the whole period interested by this deliverable (month 24 – month 36) (Table 1).

Table 1: Detailed structure for upload training material in pending format

Training material information	Training material translation	Training material images	Training material specifications
Native Language <input type="text" value="Choose"/>			Main geolocation <input type="text" value="Choose"/>
Other geolocation <input type="text"/>			
Website <input type="text"/>			
Keywords <input type="text"/>			
Type(s) of training material <input type="text"/>			
Focus area(s) of training material <input type="text"/>			
<input type="button" value="Save without Publishing"/> <input type="button" value="Publish Training Material"/> <input type="button" value="Cancel"/>			

2.2 Results of the survey

The third-round survey resulted in the collection of 84 new training material records. Table 2 shows the number of collected training and advising material sorted per country of origin of the material, 75% of which have been recollected in Europe.

Table 2: Number of collected SETA related training and advising material by country.

Extra EU Countries	Nr. of training and advising material	EU Countries	Nr. of training and advising material
Argentina	1	Belgium	7
Australia	2	Denmark	2
Brazil	4	France	22
Canada	1	Germany	2
Chile	1	Italy	2
Israel	1	Netherlands	6
Perú	1	Spain	20
Switzerland	1	Sweden	2
United Kingdom	3		
USA	6		
Total	21	Total	63

As displayed in Figure 1, almost all the new records (99%) were proposed by the INNOSETA partners and 1 by a private company (Pulverizadores Fede).

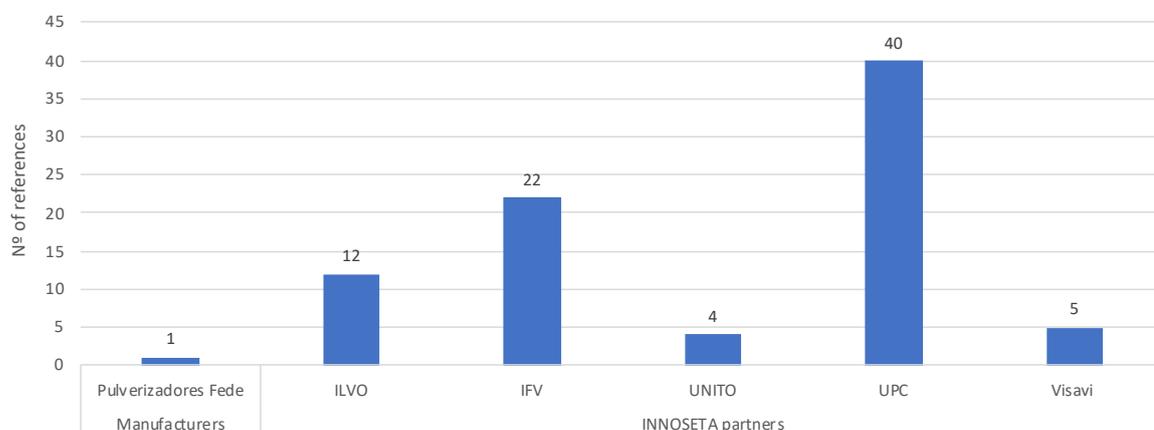


Figure 1: Contributions to the third – round survey Number of collected SETA related training and advising material by country.

After data collection, partner UPC, which is in charge of training material, produced an excel file containing the records from the third-round survey. The excel file (Fig. 2) was afterwards used for the screening process described at the following paragraph.

2.3 Screening

Once the collection procedure was finished, it was started a detailed process of screening and classification of the complete list of training material. The screening procedure has been improved since August 2020, and now a monthly screening is done in training material SETAs.

New entries are fed directly to the platform in pending mode by external users and project partners and exported to an Excel file by ILVO and uploaded in a shared Google Drive folder. Training material screening is made by UPC whereas UNITO is in charge of the screening of projects, papers and industry products.

The objectives of this process were to assure that: 1) all the new materials had all the information needed both in their corresponding native language and in English; 2) all the mandatory fields were properly filled; 3) there were not duplicate documents; and 4) the addressed topic and keywords are correctly filled and are related to the material, in order to

guarantee and easy procedure able to allow end-users to identify and allocate the intended material.

After this first screening made by UPC, links to the final and screened files are sent to all partners for their feedback and translation of the approved records in their mother languages. Also, in case of “incomplete entries” (those lacking an exhaustive description and information) an integration of data or clarifications are asked to contributors.

As for the first and second-round SETAs collection, the screening process was based on acceptance and exclusion criteria.

Acceptance criteria

Concerning acceptance criteria, it was agreed to accept training and advising material dealing with:

- Innovations about PPPs application and not precision agriculture in general;
- Innovative techniques for PPPs and optimization of spray quality application
- Improvement of environmental sustainability of spraying operations and best management practices (e.g. prevent pollution from point sources)
- Solutions in accomplishment with EU regulations in terms of pesticides use;
- Applications about improvement of PPP application

Exclusion criteria

It was decided to reject records when they fell in one or more of the following cases:

- The records didn't fit the definition of SETA (as specified at chapter 1);
- Records were too generic, e.g. training and advising materials dealing with Integrated Pest Management (IPM), precision agriculture in general terms or with farm management in financial terms (e.g. when spraying techniques were not the core part of training material);

2.4 Screening results

At the end of the screening process, all the 84 training and advising material were selected (table 2) to update the INNOSETA platform. Therefore, the screening process resulted on the exclusion of no-one proposed SETAs.

According to the results, the French language training material has the largest group (28.6%) as records coming from IFV has been included, followed by Spanish (27.4%) and English's material (21.4%) (**¡Error! No se encuentra el origen de la referencia.**).

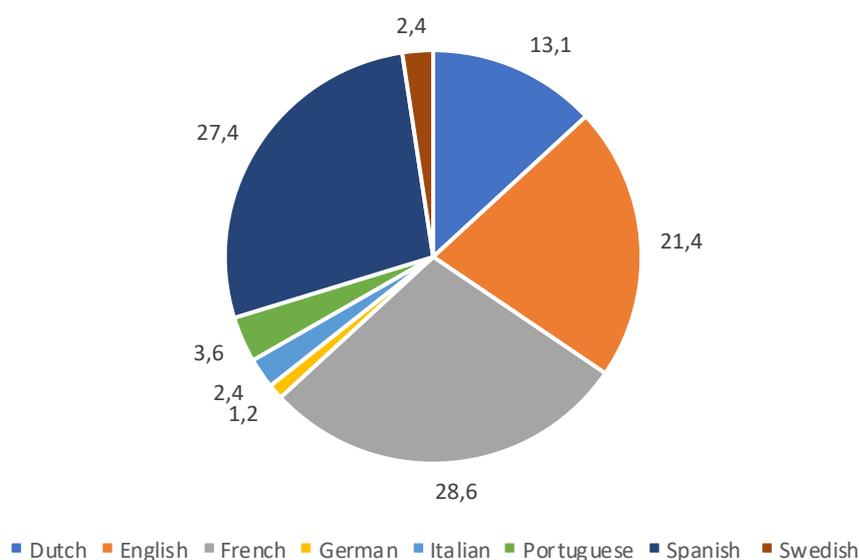


Figure 1: Percentage of training material according to the language

This linguistic diversity in the SETAs uploaded to the platform reaffirms the importance of making the material available to users in the different languages of the European Union, in order to facilitate access and dissemination of the information collected.

In this case, it is interesting that a SETA has been collected in German, which is not one of the languages of any of the project partners.

3. Phase 3: Data aggregation

3.1 Methods

The last step of SETAs selection is data aggregation, which aims to provide the final data to be given in the INNOSETA interactive platform as a first update. Different criteria to classify the training material were: addressed topic, language and type of training material. Concerning the addressed topic, Table indicates the group of classes that were established.

The three first topics correspond to those that have been used during the Regional Workshops.

Table 3: Established criterium for training material classification based on the addressed topic

Class	Sub-class
OPTIMIZATION OF SPRAY QUALITY AND PRECISION OF APPLICATION	Spray quality
	Sprayer's settings
	Control & monitoring spray parameters
	Dose optimization
PREVENTION OF SPRAY DRIFT	Filling
	Prevent pollution from point sources
	Cleaning
	Spray drift reduction
	Runoff and erosion
	Remnant management
CORRECT FILLING AND CLEANING OF SPRAYERS – PREVENTION OF CONTAMINATION	Operator's exposure
	Personal protective equipment
NEW TECHNOLOGIES FOR SPRAY APPLICATION	New spray application systems

3.2 Final results

After the screening and classification process, a total of 84 SETAs about training material have been finally accepted, identified, classified and prepared to be uploaded into the INNOSETA platform.

The found material has been classified by focus area, as it is shown in the following Figure 2.

Most of the training material uploaded had more than one label as focus area. For that reason, the total number of materials presented in the Figure 2 does not correspond with the total amount of the SETAs about training material collected.

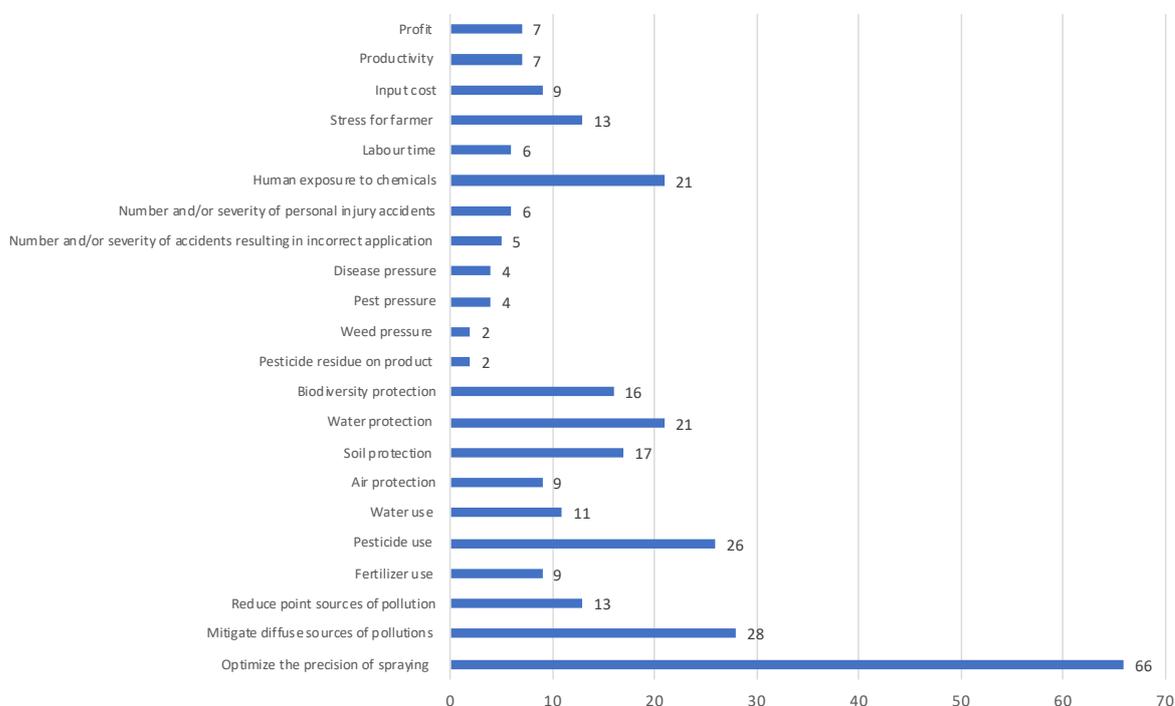


Figure 2: Classification of training material according to focus area

As it is seen in the Figure 2 and according to the established criteria to classify the training material, a total of 66 materials were classified in the category of spray quality. As in the first and second phase of SETAs collection, spray quality it is still the category that assembles the largest number of materials. Pesticide residue on product and weed, pest and disease pressure are the categories that have collected a smaller number of training materials.

The training material can also be classified according to the actor who will use this SETA (farmer, advisory services, contractor, policy makers or supplier, Figure 3).

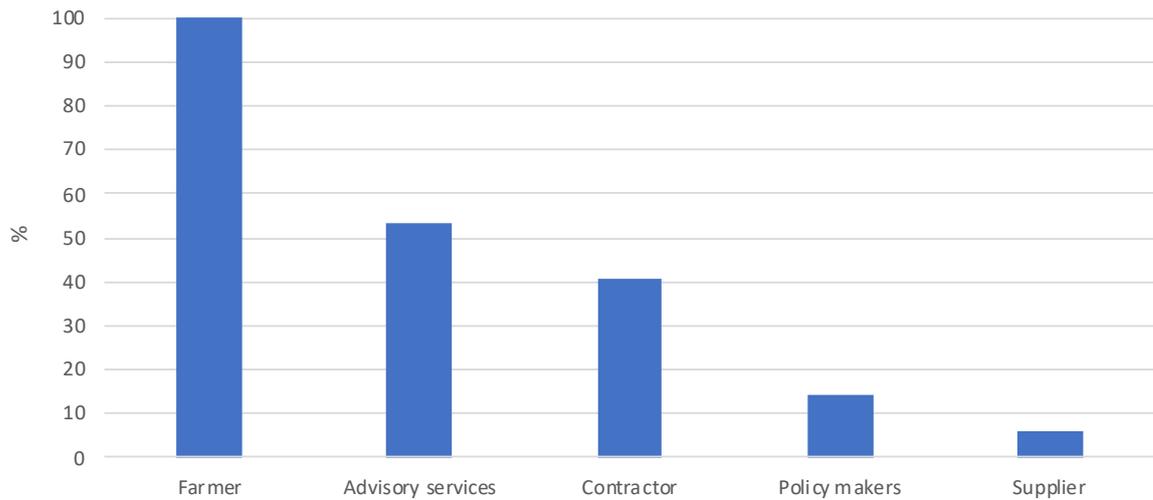


Figure 3: Classification of training material according to type of actor who will use this training material

As observed in figure 4, 100% of the material uploaded to the platform is dedicated to farmer training, followed by training material dedicated to advisory services (50%). However, only 5% is dedicated to suppliers.

4. General conclusions

After the first and second round of SETAs collection a total of 321 training and advising material were selected to serve as first inputs for the INNOSETA multi-actor platform. Together with the 84 SETAs collected during this third period, the INNOSETA platform has reached a total of 405 SETAs related to training material (Figure 5).

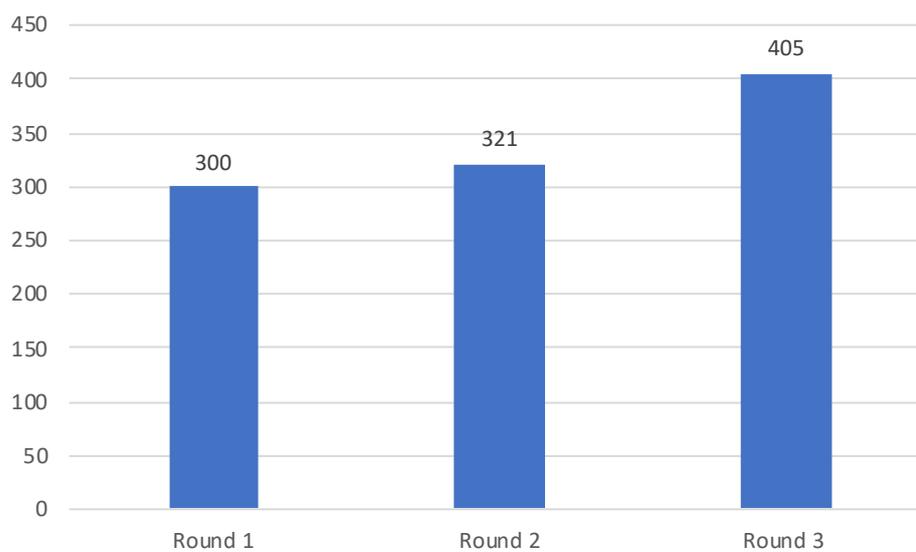


Figure 5: Number of training material SETAs available online after each survey (2019, 2020, 2021)

Although the translation process of the titles and descriptions of these new SETAs has not yet been completed, most of them can now be found in all native languages of the project partners.

The platform will be further implemented in the coming months until the end of the project (October 31st 2021).

The complete database in an Excel file is also provided attached to this D1.10 deliverable.