Deliverable 1.2: Research project results on SETA

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

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Abstract

The final goal of task 1.2 was to gather relevant and innovative **SETA**s **(S**praying**, E**quipment**, T**raining and **A**dvising**) regarding research projects and national/international papers** focusing on aspects related to PPP application.

This report illustrates the steps of the work, the screening criteria and final results obtained by the partners.

The content of this report will be used as a baseline for the implementation of the INNOSETA platform – developed in WP4 - that will be available for farmers, contractors, suppliers, technicians ad other stakeholders.

For the purpose of this deliverable, SETAs have been collected in the form of Articles (peer reviewed and technical papers) and Projects. For papers, records were retrieved from the main available databases (e.g. Scopus, WOS etc.), whereas for projects national and international databases (e.g. EIP-Agri, Cordis..) were utilized. Collected records (251 articles and 135 projects) were screened by the WP leader (UNITO) and the partners to identify relevant articles and research products.
The final assessment led to the gathering of 109 Articles (comprehensive of peer reviewed and technical papers) and 55 Projects. Their classification and further details are available in Chapter 3 of this deliverable.

Table of Contents

Introduction **1**

1 Phase 1: Initial identification **2**

1.1 Definition of SETA and set of search limits 2

2 Phase 2: Survey **2**

2.1 Data collection: roles of partners, data sources and search parameters 2

2.2 Screening 6

Acceptance criteria: 6

Exclusion criteria: 6

2.3 Screening results 7

Articles 7

Projects 7

3 Phase 3: Data aggregation **9**

3.1 Methods 9

3.2 Final results 12

Articles 12

Projects 12

4 Conclusions **14**

Introduction

The main goal of WP1 is gathering and selecting the latest innovations in terms of technology advancements in spraying and application techniques of PPPs in four cropping systems: open field, greenhouse, orchards and vineyards. Said innovations are defined as Innovative 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 material**

The final data, approved by all partners, will be used in WP4 as inputs for the INNOSETA platform.

The present deliverable describes the methodology used to collect and to screen data as well as the final achieved results about papers and projects related to innovative SETAs.

As reported in Deliverable 1.1. the methodology for identification and gathering of SETAs was organized in three phases and three sub-phases as displayed in Figure 1.

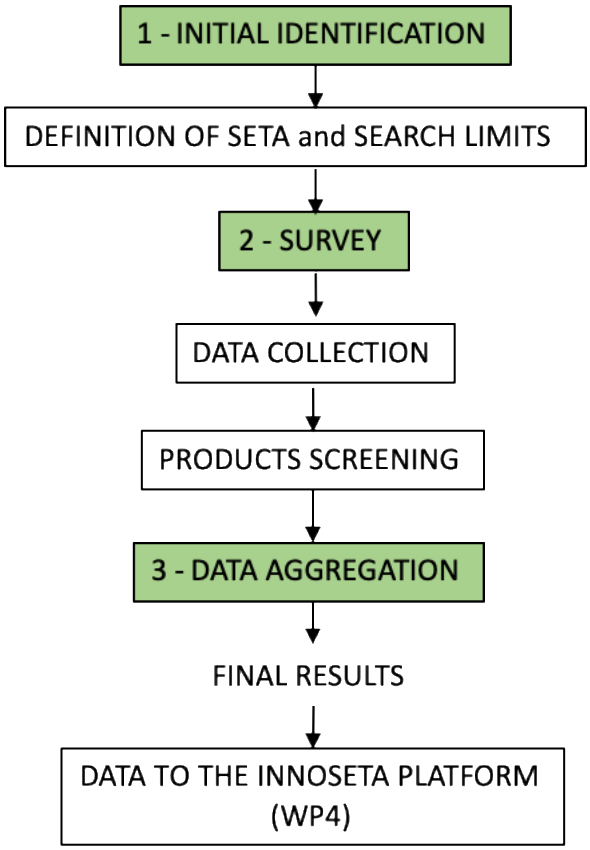


Figure 1: phases (green boxes) and sub-phases (white boxes) of SETAs collection and data processing

After having defined what to consider as an innovative SETA and having set the limits of the search for data on the available sources, the inventory was started. Collected entries were afterwards screened by UNITO to delete double or not-pertinent records. The very last phase was dedicated to group results into homogeneous categories.

In the following chapters detailed information about steps taken to complete the indicated phases and relative results are presented.

1 Phase 1: Initial identification

1.1 Definition of SETA and set of search limits

Following instructions provided by the Deliverable 1.1, in Phase 1 partners involved in WP1 were asked by the WP leader UNITO to look for and to collect data about: 1) international peer reviewed and national technical papers and 2) international and national research projects.

The basic criteria for data gathering were finding *papers* and *projects* dealing with **innovative** technologies for PPP spraying, allowing farmers to optimize pesticides application, to avoid environmental pollution and to minimize PPP residues on products.

To better specify what to consider as a SETA and to set the search limits, a discussion between partners was promoted. As a common decision, 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.

This decision led to exclude from the search: technical solutions not directly connected to the sprayers or to the setting and control of the sprayers.

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 products using - as a first guideline for the search - a series of keywords, summarized in Figure 2 (see also D1.1 and D1.3). Those keywords were used as guidelines only and were non- restrictive, meaning any relative keyword suitable for the objective could be used by partners.

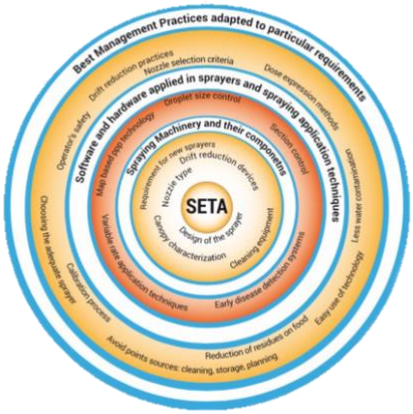


Figure 2. Keywords used to carry out the investigation about SETA – related papers and projects

To organize a uniform data gathering and avoid (as much as possible) duplicate entries between partners, an agreement on the procedures to follow and to track progresses was achieved after three Skype meetings that were held on January 24th, February 8th and 22nd 2019.

In detail, it was agreed that:

1. **UNITO** – as task 1.2 leader - **was in charge of looking for international and Italian projects as well as for international and Italian papers;**
2. **other partners were in charge of collecting regional (national) products** available in national databases.

The latter point ensures an overall representation of all partners' countries which is important from the end user point of view: the aim of the project is indeed to make the repository as user-friendly as possible and the availability of material in each partners' country mother language is relevant to the end goals of the INNOSETA project.

The investigation was performed by looking for EU funded project (in frameworks such as FP7, LIFE, INTERREG, ERA-NET, H2020 etc.) and national projects self or co-funded or totally funded by public and private Institutions **in the reference period 2010-2018**.

A list of possible and suitable data sources was indicated in D1.1 (*Table 2)*. Nevertheless, as for keywords, this indication to partners was non-restrictive and any source considered as suitable could be used.

For projects dealing with innovation in the spraying technology sector, data were retrieved from the available EU databases (e.g.: *Cordis, EIP-Agri, etc.) or from national (non-EU) databases*. **For papers**, databases containing scientific peer reviewed international papers (*Scopus, WoS*) as well as national databases were screened by the consortium to look for research results related to Innovative SETAs in the reference period 2010-2018.

To have a comprehensive and efficient collection of SETAs, G-forms produced by partner AGENSO at task 1.1 were used. More detailed information about the G-form structure are available in deliverable 1.1.

To ensure a proper use of G-forms and a reliable data collection, a document - prepared by UNITO - and containing detailed instructions on how to fill up G-forms was circulated between partners (see Annex 1) at the beginning of the survey.

The instruction document is also available on the INNOSETA Wiki at the following url: https://innoseta.upc.edu/wiki/index.php?title=File:WP1_How_to_fill_up_Gforms.pdf

All partners logged in with the same google account so that all entries ended up in the same final file under the form of an Excel sheet. A screenshot of the resulting file is shown in Figure 3.

1	Your name	Organisation	Email	What is your SETA?	Title of the Article (English)	Native Language (if exists)	Title of the Article (native lan	Author(s) (English)	Journal Name (if exists)
176	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Improvements in pesticide drift reduction technology (DRT) call for improving liability provisions to offer incentives for adoption			Palardy, N.; Centner, T. J.	Land Use Policy
177	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Spray drift reduction techniques for vineyards in fragmented landscapes			Otto, S.; Loddo, D.; Baldoin,	Journal of Environmental Ma
178	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Drift reduction of low drift nozzles in spraying citrus orchards.			Planas, S.; Torrent, X.; Chue	SuproFruit 2015 – 13th Wort
179	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Emission reduction in orchards by improved spray deposition and increased spray drift reduction of multiple row sprayers.			Wenneker, M.; Zande, J. C. v	Aspects ofApplied Biology
180	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Technical solutions to reduce drift of pesticides in apple orchards of Trentino			Bondesan, D.; Rizzi, C.; Giul	Fourth European Workshop
181	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Drift from fruit sprayers — why not prevent it at source?			ANDREW LANDERS	aspects of applied biology -
182	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Assessment of Agricultural Best Management Practices Using Models: Current Issues and Future Perspectives				Water
183	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	A mixed discrete-continuous variable multiobjective geneticalgorithm for targeted implementation of nonpoint sourcepollution control practice			Ahmadi, M. ; Arabi, M. ; Ho	WATER RESOURCES RES
184	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Integrated watershed- and farm-scale modeling framework for targeting critical source areas while maintaining farm economic viability			Ghebremichael, L. T. ; Veith	Journal of Environmental Ma
185	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Agricultural non-point source pollution in China: causes and mitigation measures			Sun B, Zhang L, Yang L, Zh	AMBIO
186	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	UPDATE TO THE USDA-ARS FIXED-WING SPRAY NOZZLE MODEL			B. K. Fritz, W. C. Hoffmann	American Society of Agricult
187	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Characteristics and classification of Japanese nozzles based on relative spray drift potential			Bai, G. ; Nakano, K. ; Mizuk	Crop Protection
188	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Investigation on optimal spray properties for ground based agricultural applications using deposition and retention models.			Cock, N. de; Massinon, M.; S	Biosystems Engineering
189	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Spray coverage and drift in vineyard applications in Australia.			Hewitt, A.; O'Donnell, C.; Fer	International advances in pe
190	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	GONDOR® - adjuvant for drift reduction and STICMAN® - an unique sticker and super-wetter adjuvant.		GONDOR® - močilo za zma	Štepic, P.; Kos, A.; Majcen, I	Zbornik predavanj in referat
191	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Towards integration of inspection procedures, calibration and drift reducing devices for an efficient use of pesticides and reduction of applica			Bondesan, D.; Rizzi, C.; lan	Fourth European Workshop
192	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Variable air assistance system for orchard sprayers; concept, design and preliminary testing			Ryszard Holownicki, Grzegc	Biosystems Engineering
193	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Pesticide application-measures for mitigation of spray drift	German	Pflanzenschutzmitteleinsatz	Schweizer, S.Email Author,	Agroscope Schweiz
194	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Low-loss spraying			Knoll, M. ; Lind, K. ; Triloff, F	Fourth European Workshop
195	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Nozzle classification for drift reduction in orchard spraying.			Zande, J. C. van de; Wennel	Aspects of Applied Biology
196	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Spray drift for different types of nozzles and spraying techniques used for herbicides application in orchards.			Godyn, A.; Doruchowski, G.;	Swiechowski, W.; Holownicl
197	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Optimization of agricultural sprays with an organo-modified trisiloxane tank mix adjuvant.			Sieverding, E.; Giessler-Blar	21ème Conférence du COL
198	Floriana Nuzzo	UNITO	floriana.nuzzo@unito.it	Article	Development of two portable patternators to improve drift control and operator training in the operation of vineyard sprayers			Gil, E. ; Landers, A. ; Gallar	Spanish Journal of Agricult

Figure 3. Partial screenshot of the Excel file that gather all G-form entries from partners.

In these forms every partner was able to fill-in fundamental information about the specific SETA. Nevertheless, as the goal of the survey was not to duplicate information already existing on EU databases, in the case of EU projects, relevant information only were collected: title & acronym, abstract, funding source, keywords, specifications about the type of technology examined, the TRL (Technology Readiness Level) of the product described in the project and a link to the online database from which information were collected.

For projects retrieved from non-EU databases a more comprehensive set of information were collected to have a more complete overview of the project.

The first phase led to the collection of 386 records: **251 articles** (173 from EU Countries and 78 from extra EU) and **135 projects**.

An overview of the number ***of collected articles and projects sorted per Country of origin of the main Author or of the project Coordinator*** is reported in Table 1 and Table 2 respectively.

Extra EU Countries	n. of articles	EU Countries	n. of articles
United States	34	Belgium	2
Argentina	1	Denmark	11
Brazil	7	France	18
Canada	2	Germany	14
China	14	Greece	2
India	6	Italy	31
Israel	2	Netherlands	8
New Zealand	2	Poland	38
Nigeria	1	Romania	2
Turkey	3	Hungary	1
Japan	1	Slovenia	4
Malaysia	1	Spain	31
Australia	2	UK	6
Iran	2	Portugal	3
		Serbia	1
		Sweden	1
Total	**78**	**Total**	**173**

Table 1: number of collected SETA-related articles. Country is referred to main Author location.

Country	EU databases n. of projects per coordinating Country	Country	non-EU databases n. of projects per coordinating Country
Belgium	1	Belgium	8
Cyprus	1	Denmark	1
Denmark	6	France	17
Finland	1	Germany	4
France	6	Italy	3
Germany	14	Switzerland	1
Greece	2	Spain	11
Israel	1	UK	1
Italy	13		
Norway	1		
Portugal	3		
Spain	21		
Switzerland	4		
The Netherlands	5		
UK	10		
Total	**89**	**Total**	**46**

Table 2. number of collected SETA-related projects. Country is referred to project coordinator location.

All collected records (see Annex 2) were afterwards screened - initially by UNITO and in a second phase by all partners - to get a final list of SETAs for the INNOSETA platform.

The screening process is described at the following paragraph.

2.2 Screening

At a first step, all records were screened to delete duplicates and incomplete entries: "*incomplete entries*" were considered those lacking in an exhaustive description and information, thus making their evaluation impossible. For these records an integration of data was asked to partners. When additional data were not available, products were deleted from the database.

At a second step, remaining projects and papers were thoroughly examined to identify the research results already put or near to be put into practice, including market-ready SETA solutions.

The screening process implied to set acceptance and exclusion criteria. To do that Skype meetings were arranged to discuss this matter between partners and to agree on the screening procedure.

Acceptance criteria:

In general, environmental sustainability-oriented technologies were considered more relevant, except operative ones (e.g. machine movement facilitation, headland maneuvers..). SETAs were approved if they were pertinent to a new technology or new technique of application of PPPs. Solutions concerning prototypes or new technology ideas were kept regardless the innovation was quite recent or not. Also, technologies that were not particularly innovative, but of which the diffusion amongst farmers was deemed necessary, were considered as SETAs and kept in the database.

Exclusion criteria:

In detail, as not pertinent records were considered:

- entries outside the search limits set at paragraph 1.1;
- too general records, e.g. articles or projects dealing with Integrated Pest Management (IPM) or with precision agriculture in general terms (e.g. when spraying techniques were not the core part of the project or of the paper);
- papers and projects dealing with guidance systems and mapping systems that can be applied to a wide variety of field operations and are not exclusive for PPP application;
- records dealing with drones for application of PPP in compliance with the ban implemented in article 9 of Directive 2009/128/EC of the European Parliament.

With respect to prototypes described in articles or implemented within projects, those with commercial potential that were developed 5 or more years before the survey, but still not actualized in a form of commercial products, were excluded from the dataset.

The same acceptance/exclusion criteria were applied for industry solutions as described in D1.3.

2.3 Screening results

Articles

At the end of the screening process **109 articles** (34 with main author from extra-EU Countries and 75 with main author from EU Countries) were selected for the INNOSETA platform (Table 3).

Extra EU Countries	n. of articles	EU countries	n. of articles
United States	14	Belgium	1
Brazil	1	Denmark	3
Canada	2	France	10
China	9	Germany	5
India	2	Italy	13
Israel	3	Netherlands	7
Turkey	1	Poland	10
Australia	1	Romania	1
Iran	1	Slovenia	1
		Spain	23
		Portugal	1
Total	**34**	**Total**	**75**

Table 3. Number of selected SETA-related articles after the screening process per main Author Country of origin.

As shown in Figure 4 - as expected - articles' predominant language is English, being English the official language for international literature. Nevertheless, about 50 articles in other languages (namely Spanish, French, Dutch, Italian, Portuguese, Polish and Chinese) are now available for the INNOSETA platform.

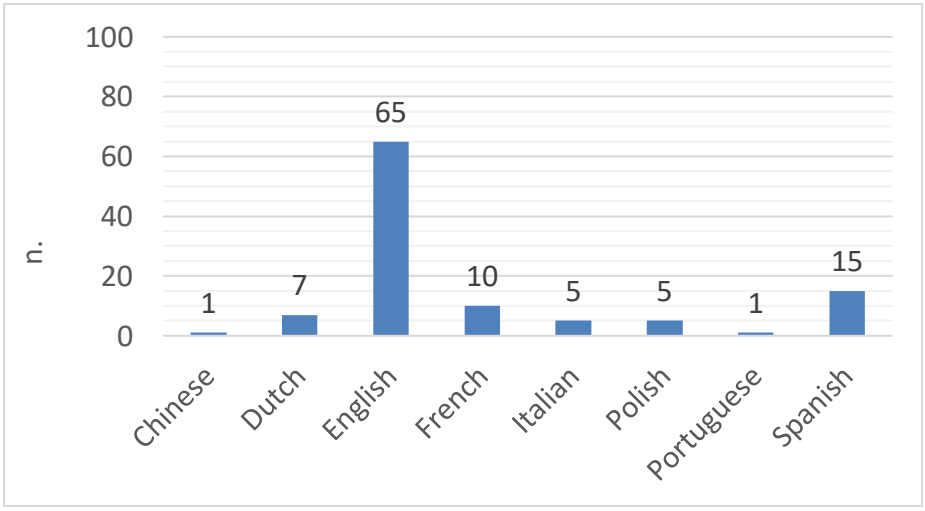


Figure 4. number of articles retrieved after the screening process sorted per language.

Projects

The screening process led to the exclusion of 81 records out of 135 initial entries. Therefore, after the projects' selection, 55 records are now available for the INNOSETA interactive platform. In detail,

27 approved projects were retrieved from EU online databases (Figure 5) and 28 from non-EU databases (Figure 6). The latter figure (non-EU databases projects) includes, e.g.: national, regional, industry-funded, self-funded projects, etc.

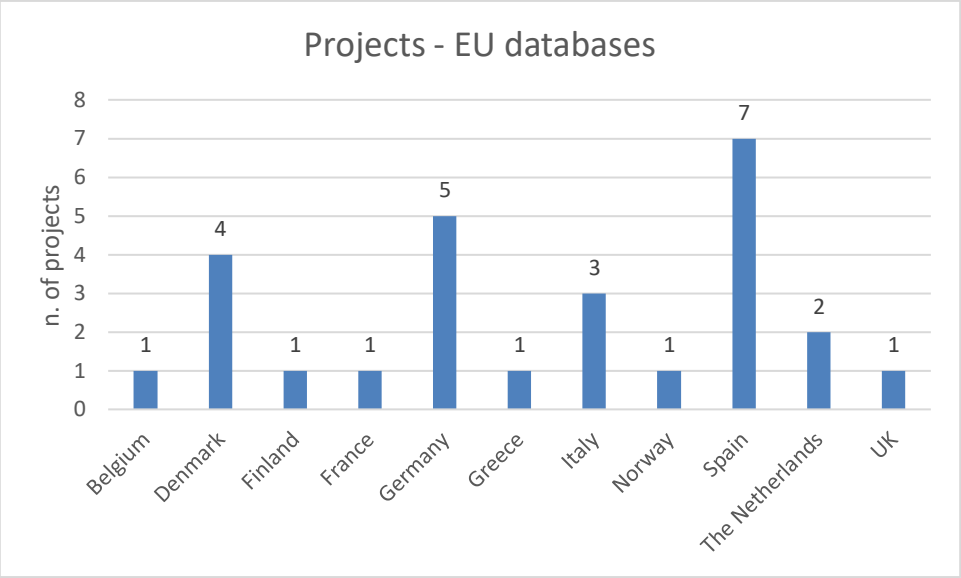


Figure 5. Number of approved projects retrieved from EU-databases after the screening process. Data are sorted by Country of the project coordinator.

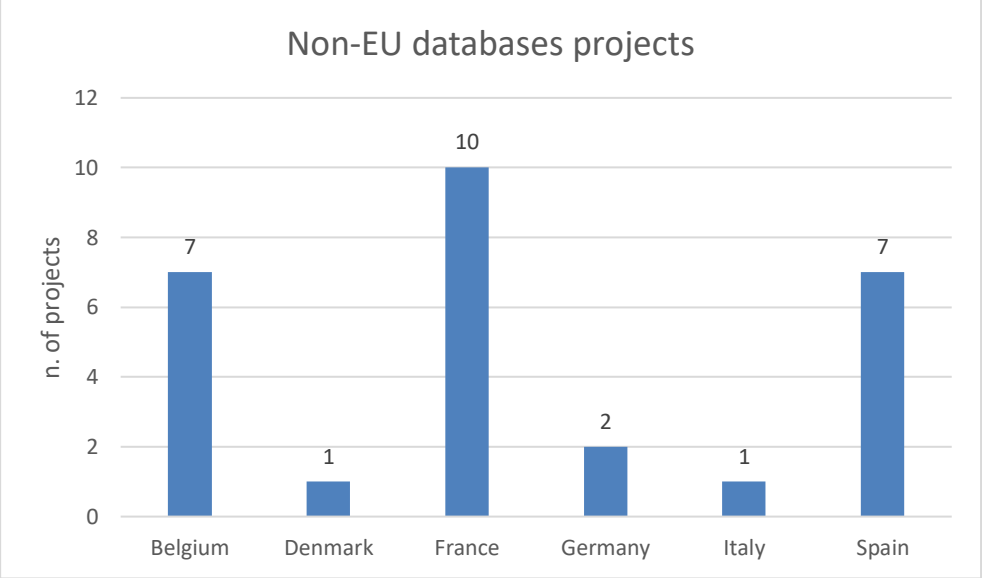


Figure 6. Number of approved projects retrieved from non-EU databases after the screening process. Data are sorted by Country of the project coordinator.

3 Phase 3: Data aggregation

3.1 Methods

As illustrated in the flowchart in Figure 1, the last step of SETAs selection is data aggregation, which aim is to provide the final data for the launch of the INNOSETA interactive platform.

In general, the effort was to categorize SETAs in a harmonized category, group and subgroup system, which emerged from the screening itself. This was carried out so that the INNOSETA platform can be effectively used by the end users (farmers, contractors, advisors, suppliers) for finding out information about projects and papers dealing with the latest innovations in the PPP application sector.

Such categories, and sub categories and description are summarized in

Other SETAs			
			In this macro-group were included articles and projects dealing with innovations useful to reach the goal of the INNOSETA project, but belonging to any of the previous categories

Table 4 (see also D1.3, table 5).

CATEGORY	GROUP	SUBGROUP	DESCRIPTION
Components			Generally any mechanical/electronic component of the spraying machine.
	Nozzles		Anti-drift nozzles, caps and accessories that facilitate and /or optimize the PPP application
	Nozzles Accessories		
	Valves		With sensor guided or automatic shut-off
	Fans		New types of distribution fans
	Sprayer Booms		Booms with innovative design
	Cleaning Systems		Cleaning nozzles and innovative systems to clean the tank or the exterior of the sprayer
	Filling Systems:		
		Closed transfer systems	Components that allow to pour the PPP in the mixing tank without dispersing the product, protecting the operator and the environment from contamination
		Direct Injection	Direct injection of PPP in the mixing tank
		Filling level monitoring	Allows to easily check the filling level of the tank and avoid spillage/overfilling

		Pre-mixers	Mixer tanks directly applicable to sprayers that allow to prepare the mix directly onto the machine, without transporting it from a prep bench. This reduces the risk of spillage and exposure of operators and contamination of the environment.
Sensors			
	Canopy Sensing		Sensors that are capable to scan and perceive the dimension of the canopy and its density. This is essential for the dose/volume expression of PPPs and avoid over/under treatment.
	Target detection:		--
		Weed detection	Ultrasound or LIDAR imaging systems that accurately detect weeds and or signs and symptoms of diseases in order to determine a precise target to be treated
		Disease detection	
Integrated Systems			Articles/projects dealing with systems that integrate a sensor component that guides a mechanical actuator.
	Boom height control		Adjusts the position of the boom following the characteristics of the ground detected by a sensor. This allows a more uniform application.
	Control Units		These include automation devices for automated spraying, computers that allow adjustments of the machine
	Nozzle Control:		
		Variable rate/PWM	Recent technology (2016) that employs the duty cycle of a pulsing solenoid instead of spray pressure to control nozzle output. It ensures constant droplet size, ability to change pressure with instant response and doesn't drip.
		On/Off section or single nozzle	Control of single nozzles allows to more precisely apply PPPs where needed. For example, this technology can be combined with Weed detection systems to treat only unwanted weeds.
		GPS based nozzle control	A GPS system detects where the PPP has to be applied, following prescription maps or operation data to avoid overlaps with already treated areas. It controls the nozzle activity
Support systems			Articles/projects dealing with systems that support the farmer in the application process, to reduce stress of decision making and operations.
	Guidance:		

		Automated guidance	Guidance of machinery automated following prescription map / pre-determined path
		Assisted Steering	Steering is made easier thanks to an automated system which reduces the stress for the operator
	DSS		Decision support System, might be a online page, software or an app for smartphones and/or tablets which help the farmer decide when/how much PPP to apply.
	Monitoring		Monitoring operations is important to avoid overlapping of treatments
		Single/Multiple operation monitoring	One or more operations are monitored and registered.
		Sprayer position via GPS	GPS system that allows to know where the machinery is located / has applied PPP
		Nozzle activity monitoring	Sensors that detect the activity and adjustment of the sprayer and its parts (e.g. nozzle pressure, eventual clogging, speed)
	Mapping/recording		
		Field operations (automated data collection)	Software and apps for smartphones and/or tablets that keep track of treatments (area, date and time, product used), products in stock.
		Field mapping (Drones/Satellite)	Prescription maps obtained by Satellite or Drone imaging systems
Innovative sprayers			
	Sprayers for field crops		In these subgroups were included articles/projects dealing with sprayers that carry an innovative element (component or sensor) but were presented as a whole new innovative machine by the manufacturer. They were divided by crop type of use.
	Sprayers for arboreal crops		
	Sprayers for greenhouses		
Best Management Practices			
			In this macro-group were included articles and projects dealing with Best Management Practices
Other SETAs			
			In this macro-group were included articles and projects dealing with innovations useful to reach the

			goal of the INNOSETA project, but belonging to any of the previous categories

Table 4. Categories, groups and subgroups of SETAS identified to classify the records into homogeneous sets of data.

3.2 Final results

Articles

A total of 109 records concerning articles were categorized (Figure 7): 69 scientific articles and 40 technical papers. Within the *innovative sprayers'* category (53 papers in total) most of the retrieved records (n=32) deal with sprayers for arboreal crops. The remaining records concern field crop sprayers (n=9), greenhouse sprayers (n=4) and generic sprayers (n=8). The second bigger category is represented by "sensors", including 15 records: weed detection systems (n=2), disease detection systems (n=4) and canopy sensing systems (n=9).

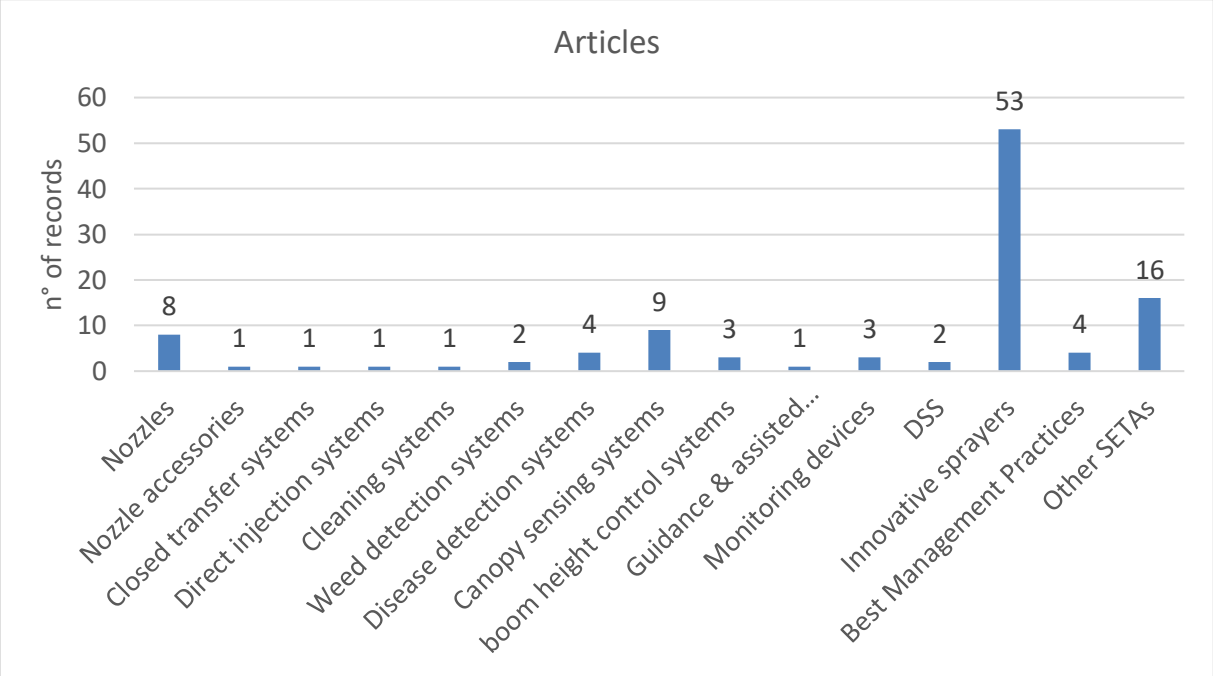


Figure 7. Number of records according to the type of SETA described in the articles.

Projects

Regardless to the data source (EU or non-EU databases), according to the survey results most of the screened projects (50%) deal with innovative sprayers, whereas 20% of the projects are focused on the development of sensors for weed or diseases automatic detection (Figure 8 and Figure 9). Mapping systems are the third most represented group of SETAs (15% of the selected records). Concerning the funding source, the 65% of the projects are national, private, self or co-funded (e.g. ICT-Agri) whereas FP7 and H2020 represent the 20% and 13% of the total. Only one of the approved projects is funded under the EU-LIFE programme.

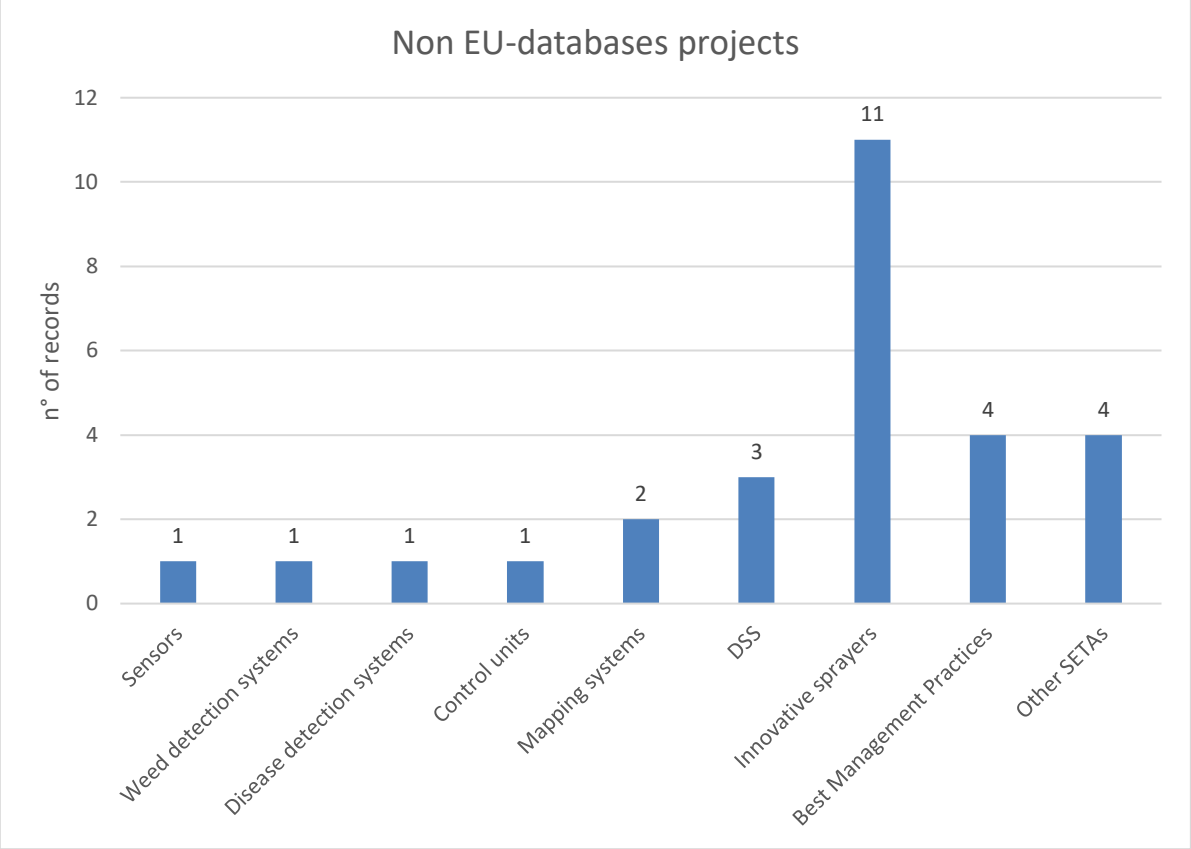


Figure 8. number of records according to the type of SETA developed in non-EU projects

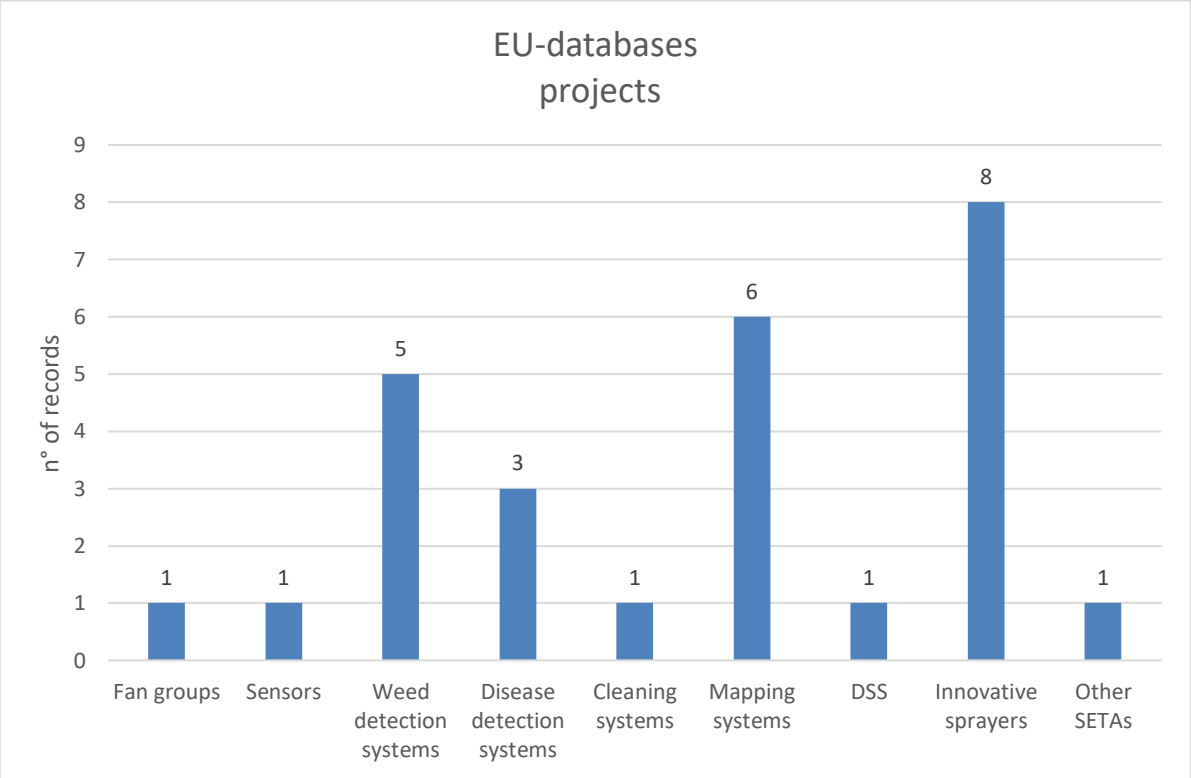


Figure 9. number of records according to the type of SETA developed in EU projects

4 Conclusions

In this first phase of the project we set the baseline for the launch of the INNOSETA interactive online platform.

55 projects and 109 articles (both scientific and technical) were selected to serve as first inputs for the platform. The records cover a wide range of technical solutions (from sprayers' components to whole machineries, from DSS to mapping systems). Records come from 23 countries (including extra EU) and represent 8 different languages. Figure 10 and Figure 11 show how the records will look like once on the INNOSETA platform. Nevertheless, please note that this is a first draft only and that some implementations have still to be done to the records layout.

Partners will keep on collecting SETAs in the coming years in order to implement and to keep up to date the INNOSETA platform.

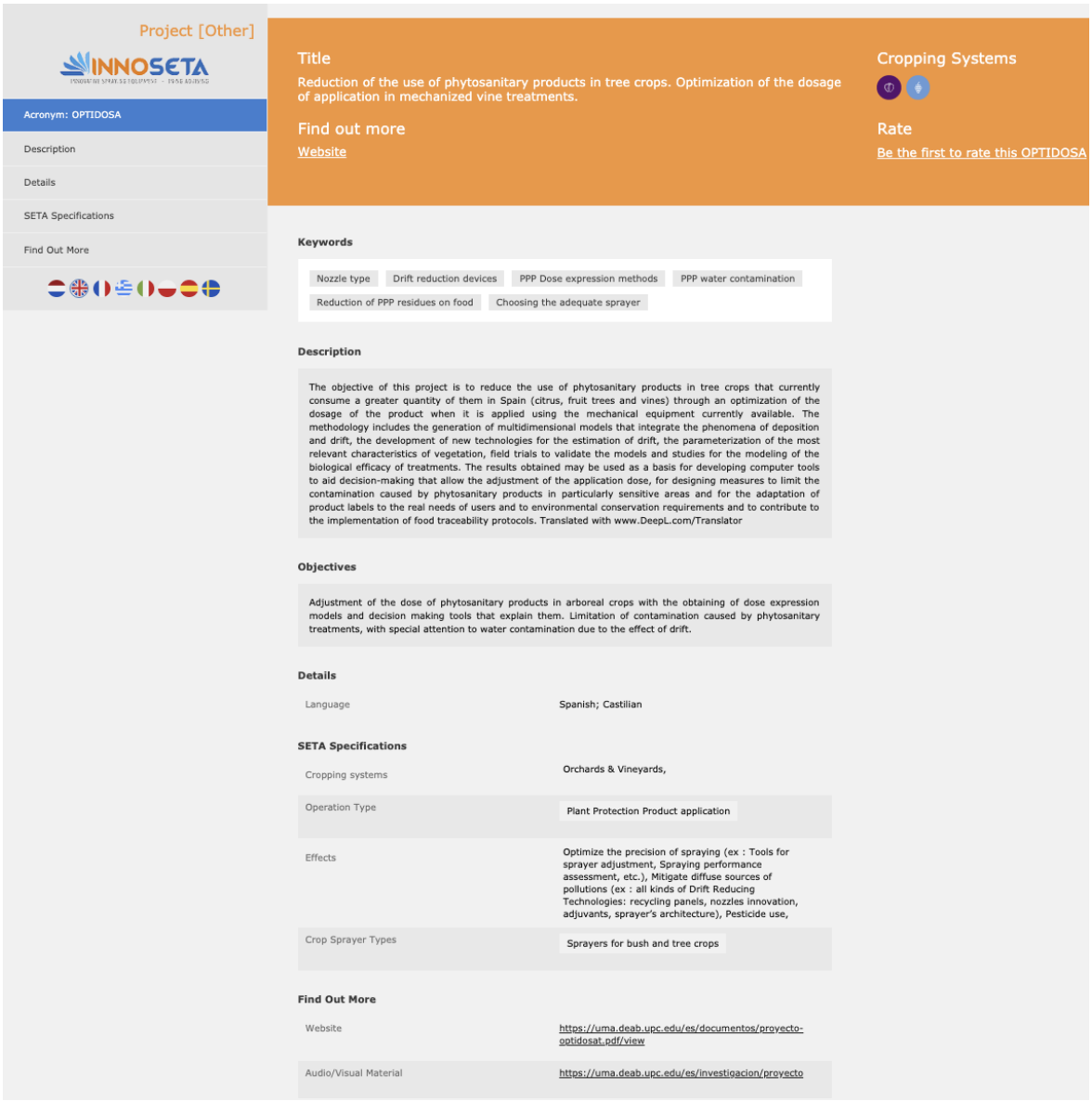
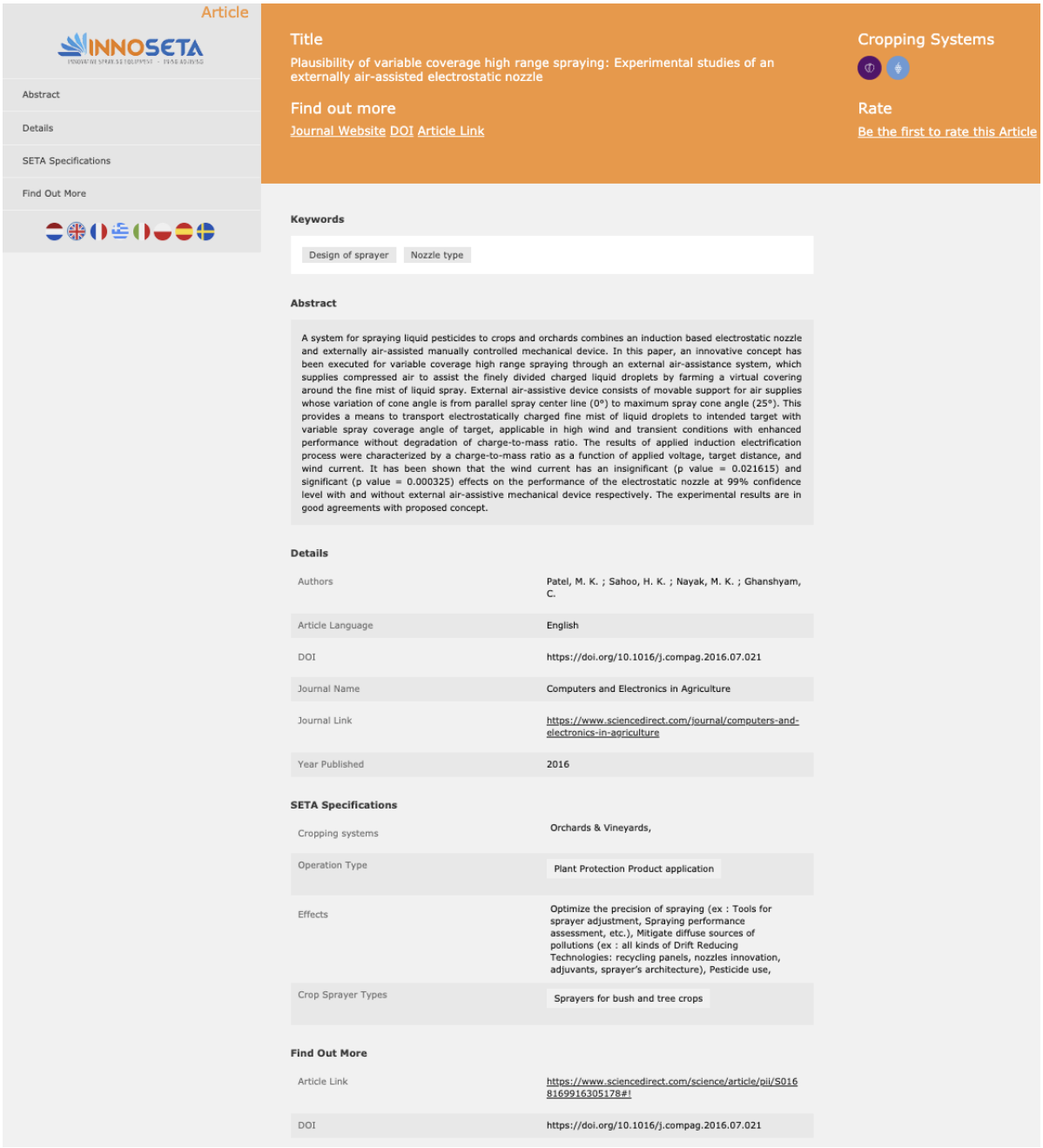


Figure 10. Draft of record's layout for projects that will be available on the INNOSETA platform.



Article

Abstract

Details

SETA Specifications

Find Out More

Title

Plausibility of variable coverage high range spraying: Experimental studies of an externally air-assisted electrostatic nozzle

Find out more

Journal Website DOI Article Link

Cropping Systems

Rate

Be the first to rate this Article

Keywords

Design of sprayer | Nozzle type

Abstract

A system for spraying liquid pesticides to crops and orchards combines an induction based electrostatic nozzle and externally air-assisted manually controlled mechanical device. In this paper, an innovative concept has been executed for variable coverage high range spraying through an external air-assistance system, which supplies compressed air to assist the finely divided charged liquid droplets by farming a virtual covering around the fine mist of liquid spray. External air-assistive device consists of movable support for air supplies whose variation of cone angle is from parallel spray center line (0°) to maximum spray cone angle (25°). This provides a means to transport electrostatically charged fine mist of liquid droplets to intended target with variable spray coverage angle of target, applicable in high wind and transient conditions with enhanced performance without degradation of charge-to-mass ratio. The results of applied induction electrification process were characterized by a charge-to-mass ratio as a function of applied voltage, target distance, and wind current. It has been shown that the wind current has an insignificant (p value = 0.021615) and significant (p value = 0.000325) effects on the performance of the electrostatic nozzle at 99% confidence level with and without external air-assistive mechanical device respectively. The experimental results are in good agreements with proposed concept.

Details

Authors	Patel, M. K. ; Sahoo, H. K. ; Nayak, M. K. ; Ghanshyam, C.
Article Language	English
DOI	https://doi.org/10.1016/j.compag.2016.07.021
Journal Name	Computers and Electronics in Agriculture
Journal Link	https://www.sciencedirect.com/journal/computers-and-electronics-in-agriculture
Year Published	2016

SETA Specifications

Cropping systems	Orchards & Vineyards,
Operation Type	Plant Protection Product application
Effects	Optimize the precision of spraying (ex : Tools for sprayer adjustment, Spraying performance assessment, etc.), Mitigate diffuse sources of pollutions (ex : all kinds of Drift Reducing Technologies: recycling panels, nozzles innovation, adjuvants, sprayer's architecture), Pesticide use,
Crop Sprayer Types	Sprayers for bush and tree crops

Find Out More

Article Link	https://www.sciencedirect.com/science/article/pii/S0168169916305178#!
DOI	https://doi.org/10.1016/j.compag.2016.07.021

Figure 11. Draft of record's layout for articles that will be available on the INNOSETA platform.

Annex 1 – Document containing instructions to fill up G-forms

WP 1

ACTIVITIES TO CARRY OUT FOR D1.2, D1.3, D1.4

As mentioned in Athens, we're now entering the very last phase of SETAs collection. To do so, we have to harmonize the activity of all of us to avoid extra work, to save time and to be as efficient as possible.

What we're expected to do is collect data belonging to four SETAs categories: national and international projects, articles (scientific and technical papers), industry products, training and advising materials.

The informatic tools we have to use to collect SETAs are the G-forms produced by AGENSO.

G-forms are available at the following Link:

https://docs.google.com/forms/d/157tvZ2-37ZnOjQZdUKPRP1z4t4fKO21jaKtMIkiFFcM/viewform?edit_requested=true

To LOG IN

use credentials provided by Agenso:

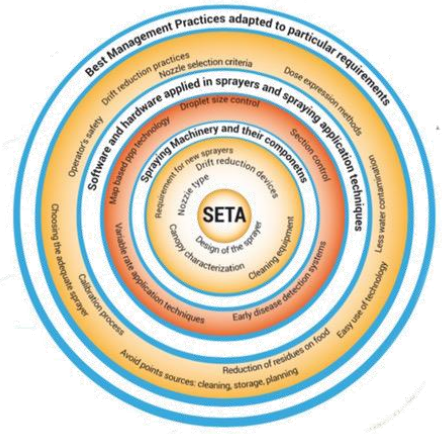
User: innoseta.proj@gmail.com

Password: G159!bk45lux@

Once you will be logged in, you'll find a screenshot that will enable you to select the SETA product you want to enter into the database (projects, articles, industry products, training/advising material).

How to look for SETAs

To search SETAs within a database (regardless to the type of SETA: article, projects etc.) you can use the keywords displayed in the following figure. Nevertheless, feel free to use other ones that you consider to be suitable for the specific purpose.



How to fill up G-forms

G-forms are now "open": no mandatory fields are present. This meaning that, in case some information is missing, you can skip it and move forward to the following field. Some fields have guided answers (multiple answers are sometimes accepted), some others have open answers.

G-forms for PROJECTS

With respect to the situation before Athens' meeting, you will notice that two options for projects data collection will be displayed:

- **EU projects**
- **Other projects**

As requested by the EU, we don't have to duplicate information already existing in EU databases. Thus, we've asked Agenso to produce a "simplified" G-Form for Cordis/EIP-Agri/other EU databases projects.

The simplified form contains a limited number of fields where the essential information we want to include in the INNOSETA database can be entered (e.g. project title, acronym etc). A specific field for a link to the project on Cordis/EIP-Agri/other Eu databases was also created.

The second G-Form for projects is more detailed and it shall be used for national projects only.

Who's in charge of what:

UNITO: international projects (search will be limited to EU only) and Italian projects

Other partners: national projects (please check national databases)

DEADLINE FOR PROJECTS COLLECTION: February 22nd

G-forms for ARTICLES

A single G-form for national and international articles is available.

Who's in charge of what:

UNITO: international articles (including extra EU articles), Italian papers

Other partners: national papers only

When looking for national articles, try to focus especially on technical and applicative ones that are likely more interesting for the INNOSETA platform end-users.

DEADLINE FOR ARTICLES COLLECTION: February 22nd

G-forms for INDUSTRY PRODUCTS

A single G-form for national and international industry product is available.

Who's in charge of what:

UNITO: Italian companies/international companies

All partners: National Companies **(please try to collect at least 10-15 industry solution per partner)**

UNITO have asked CEMA for a list of relevant **extra-EU international companies** and for the location of their EU headquarters.

We kindly ask all of you to provide us with a list of Companies you know in your Countries (please do that by Monday January the 14th). We'll merge all the lists and forward them to CEMA. They will use the final list as a baseline to fill the gaps of possible Companies to get in touch with.

Once CEMA list will be ready, UNITO will check in what Country the headquarters are based and will ask national partners to get in touch with that specific regional headquarter. E.g. if a U.S. Company has the main EU headquarter in Belgium, we will ask ILVO to get in touch with it.

For **EU international companies**, the same principle applies: e.g. in case the headquarter is based in Spain, then UPC will be in charge of getting in touch with it, if the headquarter is in Italy, UNITO will be in charge, etc.

In case a headquarter is based in **a Country not represented by an INNOSETA partner**, UNITO will be in charge of contacting the company.

DEADLINE FOR INDUSTRY SOLUTIONS COLLECTION: February the 1st

HOW TO CHECK THE EXISTING RECORDS IN THE DATABASE (ARTICLES, PROJECTS, INDUSTRY PRODUCTS, TRAINING MATERIALS)

In case you want to doublecheck whether a product you have found is already existing in the database, this is feasible through the following link: https://docs.google.com/forms/d/157tvZ2-37ZnOjQZdUKPRP1z4t4fKO21jaKtMIkiFFcM/edit#response=ACYDBNjmHQw4lAUSdOiCqo2wvWUoCxM4tV2ByKx-7sL-4-nmGlJ7w4qSblMzx1Y

To log in, use the same credentials as for the G-forms, then:

1) Click on the “responses” button (on the right top corner of the form), a new screenshot will appear with a green icon on the right (similar to an Excel icon).
2) Click the green icon
3) An Excel file will show up containing all already entered records. From this point on, you can use the spreadsheet as an Excel file. Data can be filtered, cancelled, modified etc.

Just be careful: in case you delete a record, that record will be lost!

Annex 2 – Records retrieved for articles and projects at the end of Phase 2

Articles:

Organisation	Email	What is your SETA?	Title of the Article (English)	Author(s) (English)	Journal Name (if exists)
IFV	adrien.lienard@vignevin.cor	Article	How to optimise the use of shielded sprayers?	X. Delpuech, S. Codis, A. V	Matévi
IFV	adrien.lienard@vignevin.cor	Article	HOW TUNNEL SPRAYERS COULD REDUCE PESTICIDES USE IN VINEYARDS	X. DELPUECH, A. LIENARD	COLLOQUE SUR LES TECH
IFV	adrien.lienard@vignevin.cor	Article	AGRO-ENVIRONMENTAL OPTIMIZATION OF SPRAYING IN VITICULTURE: STATE OF AR	O. HEBRARD, J-P. DOUZA	Matévi
IFV	adrien.lienard@vignevin.cor	Article	Adapt the sprayer fleet to spray more precisely	S. CODIS, A. VERGES, B.	Phytoma
IFV	adrien.lienard@vignevin.cor	Article	Downy mildew and powdery mildew control: adapt the doses of active ingredient to the ve	M. CLAVERIE, S. DEVEZE,	Rhône en V.O.
IFV	adrien.lienard@vignevin.cor	Article	AIR INJECTION NOZZLES: LESS DRIFT DUE TO LARGER DROPLETS	B. PERRIOT	Arvalis infos
IFV	adrien.lienard@vignevin.cor	Article	COB PROTECTION: APPLICATION RATE, A MORE IMPORTANT PARAMETER THAN NOZ	B. Perriot	Arvalis info
IFV	adrien.lienard@vignevin.cor	Article	POTATO BLIGHT: THE TYPE OF NOZZLES, MORE DECISIVE THAN THE APPLICATION F	B. Perriot	Arvalis infos
IFV	adrien.lienard@vignevin.cor	Article	DEFANING: COMBINING GRINDING AND CHEMICAL TREATMENT	C. Vacher, M. Martin	Arvalis info
IFV	adrien.lienard@vignevin.cor	Article	NOZZLE HOLDERS THAT CHANGE THE DEAL	B. Perriot, C. Desbourdes	Arvalis infos
IFV	adrien.lienard@vignevin.cor	Article	INTRA-PARCEL MODULATION WITH DIRECT INJECTION	C. Desbourdes	Arvalis Infos
IFV	adrien.lienard@vignevin.cor	Article	Personal protection: getting out of the "all or nothing" situation	M. Decoin	Phytoma
IFV	adrien.lienard@vignevin.cor	Article	Dérive, volumes et doses, peut-on réduire les trois ?	M. Decoin	Phytoma
UNITO	fabrizio.gioelli@unito.it	Article	SPRAY DEPOSITION INSIDE TREE CANOPIES FROM A NEWLY DEVELOPED VARIABLE	Y. Chen, H. E. Ozkan, H. Z	Transactions of the ASABE
UNITO	floriana.nuzzo@unito.it	Article	An RFID-based solution for monitoring sprayer movement in an orchard/vineyard	C Zhai, A Landers, B Zhang	Precision Agriculture
UNITO	floriana.nuzzo@unito.it	Article	Comparison of a new air-assisted sprayer and two conventional sprayers in terms of depo	Yanjie Li, Yifan Li, Xiang Pa	Pest Management Science
UNITO	floriana.nuzzo@unito.it	Article	Machine vision smart sprayer for spot-application of agrochemical in wild blueberry fields	Travis Esau,Qamar Zaman,	Precision Agriculture
UNITO	floriana.nuzzo@unito.it	Article	Laboratory test of the new spray dose adjustment system for field sprayers	Garbiak, K. Jurga, J. Tom	Journal of Research and A
UNITO	floriana.nuzzo@unito.it	Article	Design of VAV system of air assisted sprayer in orchard and experimental study.	Li LongLong; He XiongKui;	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Design optimization of boom sprayer by CFD analysis.	Shinde, G. U. ; Thakre, S.	Sixth International Scientific
UNITO	floriana.nuzzo@unito.it	Article	Development of a self propelled air assisted sprayer for transplants on raised-tables in n	Gamliel, A. ; Riven, Y. ; S	Aspects of Applied Biology
UNITO	floriana.nuzzo@unito.it	Article	Field Evaluation of Air Assisted Sleeve Boom Sprayer.	Thakare, S. K.; Saraf, V. V	Madras Agricultural Journal
UNITO	floriana.nuzzo@unito.it	Article	A new pest management research facility: Scion's large-scale precision track sprayer	S.F. Gous1, T.M. Withers1	Agrichemicals
UNITO	floriana.nuzzo@unito.it	Article	Highly efficient airblast sprayer design within the project: Healthy crop, Healthy environm	Berger, L. T.; Pérez-Salvador, F. P.; Garcerá, C.; Chue	
UNITO	floriana.nuzzo@unito.it	Article	RHEA PROJECT ACHIEVEMENT: AN INNOVATIVE SPRAY CONCEPT FOR PESTICIDE AI	Vieri, M.; Lisci, R.; Rimedio	First RHEA International Co
UNITO	floriana.nuzzo@unito.it	Article	The development of an automatic precision canopy sprayer for fruit crops.	Landers, A. ; Muise, B.	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	The Intelligent Sprayer Boom - a new generation of sprayers.	Lund, I. ; Jensen, P. K. ;	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Development of a variable-rate sprayer for nursery liner applications.	H. Y. Jeon, H. Zhu	Transactions of the ASABE
UNITO	floriana.nuzzo@unito.it	Article	Development of a Low-Volume Sprayer for an Unmanned Helicopter	Huang, Y. B. ; Hoffman, V	Journal of Agricultural Scien
UNITO	floriana.nuzzo@unito.it	Article	Design of a remotely operable sprayer for precision farming application	Longo, D. ; Muscato, G. ;	"Safety Health and Welfare
UNITO	floriana.nuzzo@unito.it	Article	A new hollow cone nozzle featured by a limited spray angle: possible application.	Tamagnone, M.; Marucco, F	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Reduction of deoxynivalenol (DON) contamination by improved fungicide use in wheat. Pa	Mesterházy, Á. ; Varga, M	European Journal of Plant P
UNITO	floriana.nuzzo@unito.it	Article	Improving plant protection product applications in traditional and intensive olive orchards	Miranda-Fuentes, A. ; Rodr	Crop Protection
UNITO	floriana.nuzzo@unito.it	Article	An advance air-induced air-assisted electrostatic nozzle with enhanced performance	Patel, M. K.; Bushra Prave	Computers and Electronics
UNITO	floriana.nuzzo@unito.it	Article	The development and evaluation of nozzle systems for use in targeted spot spraying appl	Miller, P. ; Tillett, N. ; Swa	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Effect of spray drift reduction techniques on pests and predatory mites in orchards and v	Fornasiero, D.; Mori, N.; Tir	Crop Protection
UNITO	floriana.nuzzo@unito.it	Article	Novel spray adjuvants to decrease spray drift.	Ellis, M. C. B.; Harris, D.; L	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Automatically controlled sprayer to implement spray drift reducing application strategies ir	Doruchowski, G. ; Swiecho	Journal of Fruit and Ornam
UNITO	floriana.nuzzo@unito.it	Article	Drift Risk Diagnosis (DRD) – a decision support tool to help diagnose and mitigate spray c	Doruchowski, G. ; Roettele, M. ; Herbst, A. ; Balsari,	
UNITO	floriana.nuzzo@unito.it	Article	Continuous cleaning - time efficient sprayer cleaning with minimum water usage.	Andersen, P. G. ; Jørgens	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	The challenge of cleaning direct-injection systems for pesticide application	Dörpmund, M.Email Author,	Transactions of the Asabe
UNITO	floriana.nuzzo@unito.it	Article	Effect of nozzle selection and spray volume on droplet size and efficacy of Engenia tank	Meyer, C. J.; Norsworthy, J	Weed Technology
UNITO	floriana.nuzzo@unito.it	Article	DEVELOPING A SYSTEM TO CONTROL THE AIR FLOW OF A PNEUMATIC SPRAYER	Manhani, G. G. ; Teixeira,	Bioscience Journal
UNITO	floriana.nuzzo@unito.it	Article	Sensor-based variable-rate fungicide application in winter wheat.	Tackenberg, M.; Volkmar, I	Pest Management Sciences
UNITO	floriana.nuzzo@unito.it	Article	Precision of a sensor-based variable rate sprayer	Michielsen, J. M. G. P. ; Z	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Research on design method of self tracking spray vehicle in solar greenhouse.	Xu TongYu; Feng Shuai; Ch	Journal of Shenyang Agricu
UNITO	floriana.nuzzo@unito.it	Article	Design and experiment of variable rate orchard sprayer based on laser scanning sensor.	Li LongLong; He XiongKui;	International Journal of Agri
UNITO	floriana.nuzzo@unito.it	Article	Design of automatic navigation operation system for Lovol ZP9500 high clearance boom s	Liu ZhaoPeng; Zhang ZhiGa	Transactions of the Chinese
UNITO	floriana.nuzzo@unito.it	Article	Development of a prototype of telemetry system for monitoring the spraying operation in v	Sarri, D.; Martelloni, L.; Vie	Computers and Electronics
UNITO	floriana.nuzzo@unito.it	Article	A True-Color Sensor and Suitable Evaluation Algorithm for Plant Recognition	Oliver Schmittmann, Peter S	Sensors
UNITO	floriana.nuzzo@unito.it	Article	Development of a laser-guided, embedded-computer-controlled, air-assisted precision spra	Shen Yue; Zhu HePing; Liu	Transactions of the ASABE
UNITO	floriana.nuzzo@unito.it	Article	VISION SYSTEM FOR SPRAYING MACHINE ADAPTIVE CONTROL	Matache Mihai, Persu Catal	ENGINEERING FOR RURAL
UNITO	floriana.nuzzo@unito.it	Article	Development of real-time laser-scanning system to detect tree canopy characteristics for	Cai JiChen ; Wang Xiu ; S	International Journal of Agri
UNITO	floriana.nuzzo@unito.it	Article	Dicotyledon Weed Quantification Algorithm for Selective Herbicide Application in Maize Cr	Laursen, M. S. ; Jørgensen	Sensors
UNITO	floriana.nuzzo@unito.it	Article	Advances in different technologies, such as global navigation satellite systems, geograph	Gonzalez-de-Soto, M. ; En	Special Issue: Robotic Agri
UNITO	floriana.nuzzo@unito.it	Article	DEVELOPMENT AND EVALUATION OF AN AUTOMATED SPRAY PATTERNATOR USING I	J. D. Luck, W. A. Schaardt	Applied Engineering in Agric
UNITO	floriana.nuzzo@unito.it	Article	Orchard and vineyard real time spraying adjustments using ultrasonic echoes.	Palleja, T. ; Landers, A. J.	Aspects of Applied Biology
UNITO	floriana.nuzzo@unito.it	Article	Ultrasonic sensing of pistachio canopy for low-volume precision spraying.	Maghsoudi, H. ; Minaei, S	Computers and Electronics
UNITO	floriana.nuzzo@unito.it	Article	Multispectral-based leaf detection system for spot sprayer application to control citrus ps	Larbi, P. A. ; Ehsani, R. ;	Biosystems Engineering

UNITO	floriana.nuzzo@unito.it	Article	Advances in different technologies, such as global navigation satellite systems, geograph	Gonzalez-de-Soto, M. ; Em	Special Issue: Robotic Agri
UNITO	floriana.nuzzo@unito.it	Article	DEVELOPMENT AND EVALUATION OF AN AUTOMATED SPRAY PATTERNATOR USING I	J. D. Luck, W. A. Schaardt	Applied Engineering in Agric
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UNITO	floriana.nuzzo@unito.it	Article	Ultrasonic sensing of pistachio canopy for low-volume precision spraying.	Maghsoudi, H. ; Minaei, S	Computers and Electronics
UNITO	floriana.nuzzo@unito.it	Article	Multispectral-based leaf detection system for spot sprayer application to control citrus ps	Larbi, P. A. ; Ehsani, R. ;	Biosystems Engineering
UNITO	floriana.nuzzo@unito.it	Article	Sensor-based insecticide spraying to control cereal aphids and preserve lady beetles.	Dammer, K. H. ; Adamek, I	https://dl.sciencesocieties.o
UNITO	floriana.nuzzo@unito.it	Article	Programmable Ultrasonic Sensing System for Targeted Spraying in Orchards	Stajnko, D.; Berk, P.; Lešni	Sensors
UNITO	floriana.nuzzo@unito.it	Article	Electronic canopy characterization and variable rate application in Precision Fructiculture	Escolà, A. ; Rosell-Polo, J	First RHEA International Co
UNITO	floriana.nuzzo@unito.it	Article	Specim IQ: Evaluation of a New, Miniaturized Handheld Hyperspectral Camera and Its Ap	Behmann, J. ; Acebron, K.	Sensors
UNITO	floriana.nuzzo@unito.it	Article	The BROWSE model for predicting exposures of residents and bystanders to agricultural	Ellis, M. C. B. ; Berg, F. va	Biosystems Engineering
UNITO	floriana.nuzzo@unito.it	Article	EVALUATION OF SPRAYER INTERNAL TANK CLEANING SYSTEMS ACCORDING TO ISO	Marucco, P. ; Balsari, P. ;	Aspects of Applied Biology
UNITO	floriana.nuzzo@unito.it	Article	Evaluation of sprayer internal tank cleaning systems according to ISO standard 22368-3.	P. MARUCCO, P. BALSARI	ATTI Giornate Fitopatologici
UNITO	floriana.nuzzo@unito.it	Article	Integrated catchment management for reducing pesticide levels in water: Engaging with s	Mohamad Ibrahim, I.H., Gil	Science of the Total Enviro
UNITO	floriana.nuzzo@unito.it	Article	Sprayer development needs more focus on mitigation of environmental risks arising from	Roettele, M. ; Balsari, P. ;	Aspects of applied biology
UNITO	floriana.nuzzo@unito.it	Article	Variable rate spraying application on cotton using an electronic flow controller	Baio, F. H. R.; Neves, D. C	Precision Agriculture
UNITO	floriana.nuzzo@unito.it	Article	Agricultural Sustainable Development by Variable-rate Spraying	Hossein, M. ; Saeid, M. ;	International Journal of Agro
UNITO	floriana.nuzzo@unito.it	Article	Precision orchard sprayer based on automatically infrared target detecting and electrostat	He Xiongkui, Zeng Aijun, Liu	International Journal of Agri
UNITO	floriana.nuzzo@unito.it	Article	Development of high level electrostatic charging air assisted sprayer utilizing conventiona	Air assisted spraying, is a (	International Conference on
UNITO	floriana.nuzzo@unito.it	Article	New Application Method for Reducing Pesticide Rate/ha and Cost in Plant Protection	Falchieri Davide	Outlooks on Pest Manageme
UNITO	floriana.nuzzo@unito.it	Article	THE EFFECT OF DIFFERENT NOZZLES ON SPRAY DEPOSITION QUALITY OF FUNGICID	Vučajnk, F. ; Sreš, A. ; P	Slovenskega posvetovanje
UNITO	floriana.nuzzo@unito.it	Article	Plausibility of variable coverage high range spraying: Experimental studies of an externall	Patel, M. K. ; Sahoo, H. K.	Computers and Electronics
UNITO	floriana.nuzzo@unito.it	Article	Pressure, droplet size classification, and nozzle arrangement effects on coverage and dr	Ferguson, J. C. ; Hewitt, A	Crop Protection
UNITO	floriana.nuzzo@unito.it	Article	Spray drift of drift reducing nozzle types spraying a bare soil surface with a boom sprayer	Zande, J. C. van de ; Mich	Aspects ofApplied Biology
UNITO	floriana.nuzzo@unito.it	Article	Researches Regarding the Influence of Height on Uniformity of Distribution of New Types	Marian, O. ; Drocaș, I. ; C	BULLETIN OF UNIVERSITY
UNITO	floriana.nuzzo@unito.it	Article	Evaluation of a Developed Electrically Operated Knapsack Sprayer	J.O. Awulu, P.Y. Sohotshar	International Journal of Scie
UNITO	floriana.nuzzo@unito.it	Article	SPRAY NOZZLES PERFORMANCE IN FUNGICIDES APPLICATIONS FOR ASIAN SOYBEA	CLÉBER FRANÇA DURÃO ,	Journal of the Brazilian Ass
UNITO	floriana.nuzzo@unito.it	Article	DRIFT REDUCTION RATE OF THREE ANTIDRIFT NOZZLES USED FOR SPRAY APPLICAT	Miran LAKOTA, Mario LEŠN	VI International Scientific S
UNITO	floriana.nuzzo@unito.it	Article	PERFORMANCE OF HERBICIDE SPRAYING METHODS AT DIFFERENT APPLICATION VO	Ali Bolat, Ali Bayat, Ozcan	Fresenius Environmental Bul
UNITO	floriana.nuzzo@unito.it	Article	Spray drift reduction under Southern European conditions: A pilot study in the Ecopest Pr	Konstantinos M.KasiotisaKy	Science of The Total Enviro
UNITO	floriana.nuzzo@unito.it	Article	Drift reducing potential of low drift nozzles with the use of spray-hoods	R.L. Roten, J.C. Ferguson,	NEW ZEALAND PLANT PRO
UNITO	floriana.nuzzo@unito.it	Article	Reducing Pesticide Drift by Considering Propeller Rotation Effects From Aerial Application	Steven J. Thomson, Alvin F	Sustainable Agriculture Res
UNITO	floriana.nuzzo@unito.it	Article	Analyze of drift loses in plum and apple orchards and measures for their reducing	Aleksandar Sedlar, Rajko Bugarin, Jan Turan, Vladimir V	
UNITO	floriana.nuzzo@unito.it	Article	Advanced drift reduction in orchard spraying	Wenneker, M.; Nieuwenhui	Aspects ofApplied Biology
UNITO	floriana.nuzzo@unito.it	Article	Improvements in pesticide drift reduction technology (DRT) call for improving liability provi	Palardy, N.; Centner, T. J.	Land Use Policy
UNITO	floriana.nuzzo@unito.it	Article	Spray drift reduction techniques for vineyards in fragmented landscapes	Otto, S.; Loddo, D.; Baldoin	Journal of Environmental Ma
UNITO	floriana.nuzzo@unito.it	Article	Drift reduction of low drift nozzles in spraying citrus orchards.	Planas, S.; Torrent, X.; Ch	SuproFruit 2015 – 13th Wor
UNITO	floriana.nuzzo@unito.it	Article	Emission reduction in orchards by improved spray deposition and increased spray drift re	Wenneker, M.; Zande, J. C.	Aspects ofApplied Biology
UNITO	floriana.nuzzo@unito.it	Article	Technical solutions to reduce drift of pesticides in apple orchards of Trentino	Bondesan, D.; Rizzi, C.; Gi	Fourth European Workshop
UNITO	floriana.nuzzo@unito.it	Article	Drift from fruit sprayers — why not prevent it at source?	ANDREW LANDERS	aspects of applied biology -
UNITO	floriana.nuzzo@unito.it	Article	Assessment of Agricultural Best Management Practices Using Models: Current Issues and	Future Perspectives	Water
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ZODR		Article	TECHNICAL AND ECONOMIC ASPECTS	dr inż. Mirosław ZAGÓRDA,	prof. dr hab. inż. MariaWALC
ZODR		Article	Research on the technical efficiency of equipment for the application of plant protection products		
UNITO	floriana.nuzzo@unito.it	Article	Mitigating the Risks of Plant Protection Products in the Environment: MAgPIE	Editors: Anne Alix, Colin Brown, Ettore Capri, Gerhard Ge	

Projects

Organisation	Email	What is your SETA?	Acronym (English)	Title (English)	Link to EU database (C	Keywords (English)	Keywo
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	CROPS	Intelligent sensing and manipulation for sustainable production and harvesting of high value crop	https://cordis.europa.eu/prc	Design of sprayer, Drift reduction c	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	RHEA	ROBOT FLEETS FOR HIGHLY EFFECTIVE AGRICULTURE AND FORESTRY MANAGEMENT	https://cordis.europa.eu/prc	Map based ppp technology, GPS,	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ATOMIX	Boosting the efficiency of current agricultural atomisers by using ultrasonics emitters	https://cordis.europa.eu/prc	Design of sprayer, Drift reduction c	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	MODEM_IVM	A web-based system for real-time Monitoring and Decision Making for Integrated Vineyard Manag	https://cordis.europa.eu/prc	Map based ppp technology, Variab	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	BIOMUSH	Early detection and bio-control of mushroom pests and diseases in an Integrated Pest Managem	https://cordis.europa.eu/prc	Early disease detection systems, I	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	RUSTWATCH	A European early-warning system for wheat rust diseases	https://cordis.europa.eu/prc	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	QDETECT	Developing quarantine pest detection methods for use by national plant protection organizations	https://cordis.europa.eu/prc	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	VALITEST	Validation of diagnostic tests to support plant health	https://cordis.europa.eu/prc	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	GIDROM	Drone-based integrated monitoring system for early detection of crop pathology and pest control	https://cordis.europa.eu/prc	Early disease detection systems, I	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	VITISENS	COST-EFFECTIVE HAND-HELD DEVICE FOR RAPID IN-FIELD DETECTION OF FLAVENSCENCE	https://cordis.europa.eu/prc	Early disease detection systems, i	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	E-FLYWATCH	Development of an innovative automated and wireless trap with warning and monitoring modules f	https://cordis.europa.eu/prc	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	GREENPATROL	Galileo Enhanced Solution for Pest Detection and Control in Greenhouse Fields with Autonomous	https://cordis.europa.eu/prc	Early disease detection systems, V	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	TOAS	New remote sensing technologies for optimizing herbicide applications in weed-crop systems	https://cordis.europa.eu/prc	Map based ppp technology, Early c	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ENTOMATIC	Novel automatic and stand-alone integrated pest management tool for remote count and bioacout	https://cordis.europa.eu/prc	Map based ppp technology, DSS, I	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	Stoock	An Innovative Integrated Field Sensor system providing a precise farming tool to reduce producti	https://cordis.europa.eu/prc	Map based ppp technology, Senso	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	AgroPestAlert	High Tech and Disruptive Prices Global Solution for Real Time Alerts on Agrifood Pest, based on	https://cordis.europa.eu/prc	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	SenSOP-II	Novel sensor based soil-plant-climate control system for European smart farming	https://cordis.europa.eu/prc	Map based ppp technology	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	N-TOOLBOX	Toolbox of cost-effective strategies for on-farm reductions in N losses to water	https://cordis.europa.eu/prc	DSS, Decision support system	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	INCOVER	Innovative Eco-Technologies for Resource Recovery from Wastewater	https://cordis.europa.eu/prc	PPP water contamination	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	BROWSE	Bystanders, Residents, Operators and WorkerS Exposure models for plant protection products f	https://cordis.europa.eu/prc	PPP water contamination	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	VINEROBOT	VINEyardROBOT	https://cordis.europa.eu/prc	Canopy characterization, Map base	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	AGRIC-LASERUAV	Precision agricultural crop monitoring using laser scanning and unmanned aerial vehicles	https://cordis.europa.eu/prc	Canopy characterization, Map base	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ASTERIX	Robot shoots herbicide only on weeds, reducing usage by more than 90%	https://cordis.europa.eu/prc	Nozzle type, Requirement for new s	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	Flourish	Aerial Data Collection and Analysis, and Automated Ground Intervention for Precision Farming	https://cordis.europa.eu/prc	Map based ppp technology, Early c	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ROBO FARM	Integrated robotic and software platform as a support system for farm level business decisions	http://ict-agri.eu/node/3630	Map based ppp technology, DSS, I	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Innovative strategies for the early detection and control of Sclerotium rolfsii in potatoes in Andal	https://ec.europa.eu/eip/ag	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	Beetle Sound Tube	Early acoustic detection of grain storage insect pests (Beetle Sound Tube)	https://ec.europa.eu/eip/ag	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Optimization of Resource Use and Systems to Protect the Environment	https://ec.europa.eu/eip/ag	Early disease detection systems	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ODPO	Online Diagnostic of Plant Status for the Optimization of Growing Conditions	https://ec.europa.eu/eip/ag	Sensors	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Sensors Sustainability	https://ec.europa.eu/eip/ag	Sensors	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	IRRINET	Data assimilation from soil-crop-climate sensor network in IRRINET DSS	https://ec.europa.eu/eip/ag	Sensors	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Collective washing place De Rips	https://ec.europa.eu/eip/ag	Design of sprayer, Requirement for	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Implementation of spry drones in steep slope viticulture	https://ec.europa.eu/eip/ag	Drift reduction devices, Early disea	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	PrunusBot	Robotic autonomous aerial controlled spray system and prediction of fruit production	https://ec.europa.eu/eip/ag	Design of sprayer, Drones sistem	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	PV SENSING	Operational Group for the deployment of innovative sensors in the vineyard for the prevention of	https://ec.europa.eu/eip/ag	Early disease detection systems, V	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ITACA	Technological and Environmental Innovation for the management of treatments in the heroic vitic	https://ec.europa.eu/eip/ag	Design of sprayer, Canopy charact	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	LIFE AQUEMFREE	In-farm remediation of agro-waste water with pesticides from remnants, cleaning and rinse by sol	https://ec.europa.eu/eip/ag	Cleaning equipment, PPP water co	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Arbonovateurs for resilience in fruit growing and fruits growers take pride in their craft.	https://ec.europa.eu/eip/ag	Drift reduction practices, PPP Dos	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	BigGrape		http://ict-agri.eu/node/3617	Early disease detection systems, S	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	FungiDetect	Sensor-based online-detection of pests in wheat	http://ict-agri.eu/node/3617	Map based ppp technology, Early c	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	VINESCOUT	Grape monitoring robot to help winegrowers manage their vineyards and find the best time to han	https://ec.europa.eu/eip/ag	Variable rate application technique	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	MONALISA	Monitoring key environmental parameters to improve apple production in South Tirol, Italy	https://ec.europa.eu/eip/ag	Sensors, Remote Sensing	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	REMWEED	Remote sensing of weed infestations	http://ict-agri.eu/node/3618	Early disease detection systems, S	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Dynamic position control for hydraulic modules demonstrated on a stilt tractor in a vineyard	http://ict-agri.eu/node/3619	Tractor, Vineyard, Hydraulic modul	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Exploiting novel canopy sensors for improved disease management, variety selection and resilier	http://ict-agri.eu/node/3624	Canopy characterization, Map base	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	INTELLIVITE		http://ict-agri.eu/node/3670	Drift reduction practices, Sensors,	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	STRATOS		http://ict-agri.eu/node/3630	Design of sprayer, Requirement for	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	QUAD-AV		http://ict-agri.eu/node/3631	Operator safety, Sensors	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	GrassBots		http://ict-agri.eu/node/3631	Early disease detection systems, S	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	AgriEagle	Drone-assisted precision farming via disposable sensors and low cost hyperspectral imagers	http://ict-agri.eu/node/3681	Requirement for new sprayers, Ma	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	SENseFly		http://ict-agri.eu/node/3639	Drones, Sensors	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	PUMAGRI		http://ict-agri.eu/node/3639	Design of sprayer, Canopy charact	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	IT-AGRO		http://ict-agri.eu/node/3638	Map based ppp technology, Senso	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	SAVSAR	Semi-Autonomous Vineyard Spraying Agricultural Robot		Design of sprayer, Variable rate ap	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	ROMOVI	Modular and Cooperative Robot for Vineyards	http://ict-agri.eu/node/3815	Robots	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	APREINF	Precision agriculture for the sustainable management of weed	http://ict-agri.eu/node/3666	Drift reduction devices, Map based	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	S3-CAV		http://ict-agri.eu/node/3614	Map based ppp technology, Senso	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	SYIELD	Networked Mimic Sensors for Crop Enhancement & Disease Control	http://ict-agri.eu/node/3626	Canopy characterization, Early dis	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	soil2data	mobile soil-sensor-module and data fusion for resource efficient plant production	http://ict-agri.eu/node/3618	lab on a chip, input, fertilizer, soil a	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)		Tractor-mount sensing for precision application of Nitrogen and control of milling wheat protein co	http://ict-agri.eu/node/3625	Variable rate application technique	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I	TEAMPEST	Theoretical Developments and Empirical Measurement of the External Costs of Pesticides	https://cordis.europa.eu/prc	PPP water contamination, Reductic	

UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I VAROS		http://ict-agri.eu/node/3632	Variable rate application te
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I CropWatch		http://ict-agri.eu/node/3619	Canopy characterization, M
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I RoboWeedSupport		http://ict-agri.eu/node/3672	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	INTEGRATION OF MULTI-SENSORS INFORMATION AND MACHINE LEARNING FOR ACCURATEI	http://ict-agri.eu/node/3702	Canopy characterization, S
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	Automating weed mapping in arable fields for precision farming	http://ict-agri.eu/node/3625	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I SAS	Smart Agriculture System	http://ict-agri.eu/node/3639	DSS, Decision Support Sys
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	AGRIDRONES SERVICES	http://ict-agri.eu/node/3638	Canopy characterization, M
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I 3D-Mosaic		http://ict-agri.eu/node/3631	Sensors,
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I BonIPS	Methods for feasible detection of scoring data and usage for varible plant protection in arable far	http://ict-agri.eu/node/3618	Map based ppp technology
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	DEVELOPMENT OF NEW TECHNOLOGICAL AND CONCEPTUAL TOOLS FOR THE IMPLEMENTA	http://ict-agri.eu/node/3702	Map based ppp technology
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	PHOTONIC-BASED TOOLS FOR SUSTAINABLE AGRONOMIC MANAGEMENT AND USE OF PES	http://ict-agri.eu/node/3701	Drift reduction devices, Ca
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I SENSAGRI	Sensor based Smart Agriculture	https://cordis.europa.eu/pro	Canopy characterization, S
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I DAW	DAW (Delta Plan for Agricultural Water Management): Working together on innovations in agricult	https://ec.europa.eu/eip/ag	PPP water contamination, s
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I S-GAP	Smart Good Agricultural Practices	http://ict-agri.eu/node/3728	Easy use of technology
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I Targ_App	Putting sensors to work – Targeted application of nutrients and pesticides	http://ict-agri.eu/node/3632	Variable rate application te
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I MartA		http://ict-agri.eu/node/3616	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I BLIGHTSENSE	Development of a rapid biosensor system for in-field detection of potato blight	http://ict-agri.eu/node/3624	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	Improved risk prediction for precision agriculture: automated monitoring of pathogen movement	http://ict-agri.eu/node/36237	
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	Use of hyperspectral data from UAV platforms in precision farming for weed detection and manag	http://ict-agri.eu/node/3685	Map based ppp technology
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I BiDa-LAP	Using Big Data in the agricultural production in an innovative way – Sub project title: Developmen	http://ict-agri.eu/node/3617	Dss, Decision Support Syst
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I OLIWES		http://ict-agri.eu/node/3677	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I RichWater	Innovative technology for wastewater reclamation in agriculture Cost-effective and environmental	https://cordis.europa.eu/pro	PPP water contamination, V
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I Farmwise	autonomous robot for sustainable weeding of sugar beet	http://ict-agri.eu/node/3620	Drift reduction practices, Ea
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	Development of a farming atomizer prototype for optimization of plant protection application on h	http://ict-agri.eu/node/3669	Design of sprayer, Requirer
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/LIFE/Interreg)	Faster device for application of phytosanitary products	http://ict-agri.eu/node/3666	Design of sprayer, Requirer
UPC		Project (Cordis/Eip-Agri/I FITOVID	Implementation of demonstrative and innovative strategies to reduce the use of phytosanitary pr	http://www.fitovid.eu	Early disease detection sy
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I H3O	Healthy crop, Healthy environment, Healthy finances ... through Optimization	https://cordis.europa.eu/pro	Design of sprayer, Drift red
UNITO	floriana.nuzzo@unito.it	Project (Cordis/Eip-Agri/I Healthy Greenhouse	Gezonde Kas/ Healthy Greenhouse – an innovative crop protection system for greenhouses	https://ec.europa.eu/region	Early disease detection sy

Organisation	Email	What is your SETA?	Acronym (English)	Title (English)	Keywords (English)
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	OISEAU	Intra-parcel dose modulation system for phytosanitary products and fertilizers	Map based ppp technology,
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	PulVéFix	PulVéFix - Development and assessment of a new application mean of phytosanitar	Design of sprayer, Drift red
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	DIAPHYT	setting of a risk assessment tool of phytopharmaceutic products at farm scale	PPP water contamination, C
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	BCO-SPRAY	Fogging of biological control organisms (BCOs) in storage rooms for control of stora	Design of sprayer, Nozzle t
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	BIOSPRAY	Development of an efficient application of entomopathogenic nematodes in vegetabl	Design of sprayer, Nozzle t
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	CAMERASPRAY	Integration of imaging techniques for the quantitative characterization of pesticide s	Nozzle type, Droplet Size C
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	FI-ORAMA	Future Internet - Orchards Automated Management	Map based ppp technology,
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	Agroptima	The Internet of Fields": mobile farm management software	Map based ppp technology
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)		Develop an automated system for precision application of nitrogen fertiliser and plar	DSS, Decision Support Syst
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	E-Bas	Electronic Consulting Assistant: Development and implementation of a management	DSS, Decision Support Syst
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	PAM	(Pesticide Application Manager): Decision support in crop protection based on terrai	Drift reduction practices, Ea
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	EMRA		DSS, Decision Support Syst
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	DAMAV		Early disease detection sys
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)		Sustainable Intensification of Agricultural Cropping Systems Supported by Smart Sw	Canopy characterization, DS
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	ROVITIS		Early disease detection sys
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	BODI		Easy use of technology, DS
UPC		Project (Other Projects)	OPTIDOSA	Reduction of the use of phytosanitary products in tree crops. Optimization of volum	Nozzle type, Drift reduction
UPC		Project (Other Projects)	SAFESPRAY	Comprehensive strategies for a safe and effective phytosanitary use. Spraying prec	Drift reduction devices, Maj
UPC		Project (Other Projects)	Innolivar	Olive grove innovation and technification	Design of sprayer, Drift redu
UPC		Project (Other Projects)	TecnoGIM	Development of new technological and conceptual tools for the implementation of In	Map based ppp technology,
UPC		Project (Other Projects)	GreenhouseSat	Identification based on greenhouse horticultural objects from stereo WorldView-3 sa	Map based ppp technology,
UPC		Project (Other Projects)	DARP	Practical demonstration of the applicability of vegetation maps for the variable appli	Map based ppp technology,
UPC		Project (Other Projects)	DARP	Practical demonstration of the applicability of vegetation maps for the variable appli	Map based ppp technology,
UPC		Project (Other Projects)	GOPHYTOVID	Optimisation of the use of phytosanitary products in viticulture on the basis of vigou	Map based ppp technology,
UPC		Project (Other Projects)	AgVANCE	Photonics-based tools for agronomic management and the use of sustainable crop p	Drift reduction devices, Maj
UPC		Project (Other Projects)	MECAOLIVAR	Technological innovations in the mechanization of the olive grove by means of Pre-(	Design of sprayer, PPP wat
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	SPRAYSAFE	Operator exposure for greenhouse spray applications	Design of sprayer, Easy us
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	DUSTDRIFT	Measuring and innovative techniques to reduce dust drift from pesticide seed dress	Seed treatment, seed coati
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	FRUITSPRAY	An integrated approach to investigate the orchard spraying process using a CFD mo	Design of sprayer, Nozzle t
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	GREENHOUSESPRAY	Optimization of spray application technology in ornamental crops	Design of sprayer, Nozzle t
ILVO	david.nuyttens@ilvo.vlaand	Project (Other Projects)	SPRAYDRIFT	Drift from field crop sprayers using an integrated approach	Nozzle type, Drift reduction
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	ROVIPO	ROVIPO : the polyvalent robot for viticulture	Design of sprayer, Canopy
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	PULVARBO	PULVARBO	Design of sprayer, Nozzle t
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	Stopdrift	StopDrift: Classification of sprayers on drift risk, identification of practices and deve	Nozzle type, Drift reduction
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)		DIRECT INJECTION OF PLANT PROTECTION PRODUCTS	Design of sprayer, direct in
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	PREAMISSE	PREAMISSE (Tree protection with secured micro-injection)	Drift reduction devices, mic
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	LABELPULVE	LABELPULVE : Setting up a label for wine-growing sprayers based on their perform	Sprayer adjustment, Choos
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	DELIVRA	Effective Dose from Laboratory to Vineyard & Suitable Spraying	PPP Dose expression meth
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	ArchiTechDose Viti	ArchiTechDose Viti Methodology and scenarios for agro-environmental optimization	Canopy characterization, sp
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	PULVEDRONE	PULVEDRONE: UAV spraying in perennial crops in a context of ecological transition	sprayer performances char
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	PULVETROIT	PULVETROIT : Acquisition de références sur les dépôts de produits phytosanitaire	Canopy characterization, Pl
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	TechnoDoseViti	TechnoDoseViti Experimental modelling of phytosanitary treatment deposits accordi	Canopy characterization, Pl
IFV	adrien.lienard@vignevin.cor	Project (Other Projects)	ECOPULVE	ECOPULVE: Optimization of spraying equipment to reduce drift in the vineyard: how	Nozzle selection criteria, Pl
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	TOPPS	Train Operators to Promote best management Practices & Sutainability	PPP water contamination
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)	MagPie	Mitigating the Risks of Plant Protection Products in the Environment	risk mitigation measures wit
UNITO	floriana.nuzzo@unito.it	Project (Other Projects)		Safe & Sustainable Use Initiative	Best Practices