

**PROJECT NO: 2016-1-TR01-KA202-034059**

## IMPLEMENT PROJECT SURVEY REPORT



**TURKEY**

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## **FARMERS/STUDENTS TARGET GROUP**

### **0.1 PERSONAL DATA**

Of the 63 questionnaires surveyed in the research area, 12 of them was carried out with students and 51 was with the farmers. Only one of the farmers interviewed was women. The average age of farmers was 46. 76% of interviewed farmers have more than 20 years of farming experience. 49% of the respondents were primary school graduates, 24% were high school graduates, and 27% had bachelor and master education degree.

### **0.2 FARM DATA**

Average field size was 19 ha in the surveyed area. The vast majority of farmers produce field crops (annual crops). While the average family size per farm enterprise was 5 people, the numbers of employees were about 11 people.

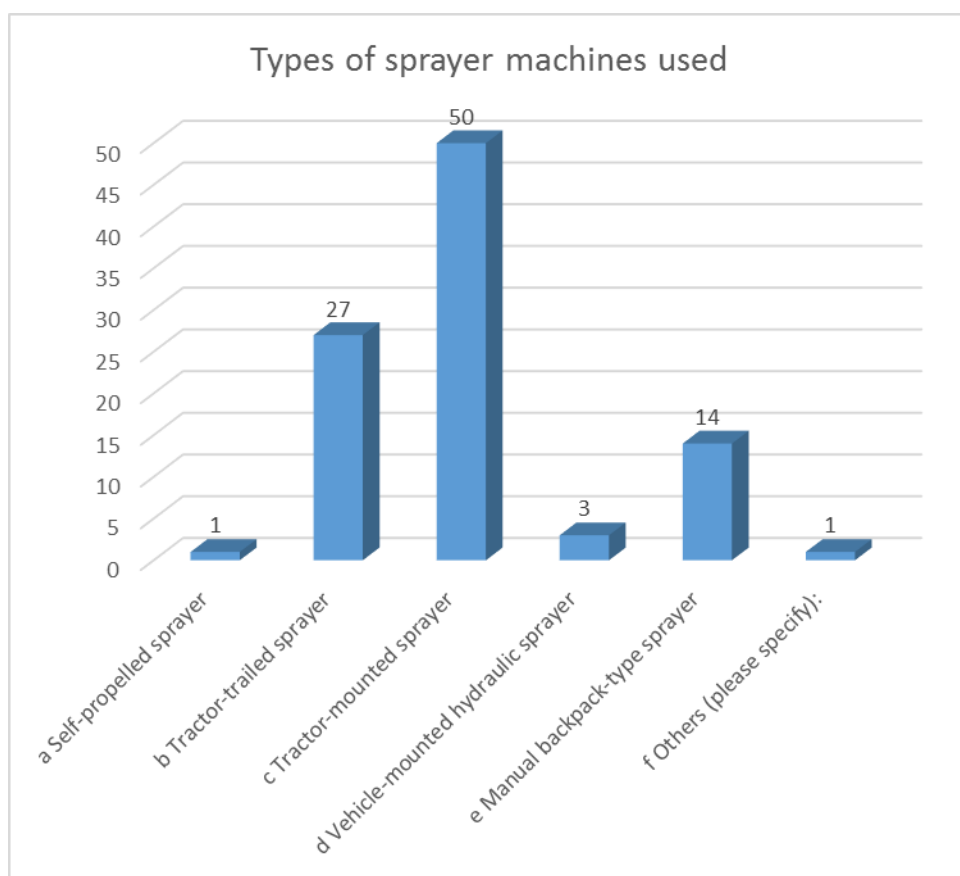
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## **1 USE OF SPRAYER MACHINES**

### **1.1 - Sprayer machines of new construction**

The most widely used sprayers in the field of research were; tractor-mounted sprayer, tractor-trailed and knapsack hand sprayer. 13 of the farmers that interviewed have stated the sprayer used had an EU declaration of conformity and 33 of them stated that their sprayer had CE marking.

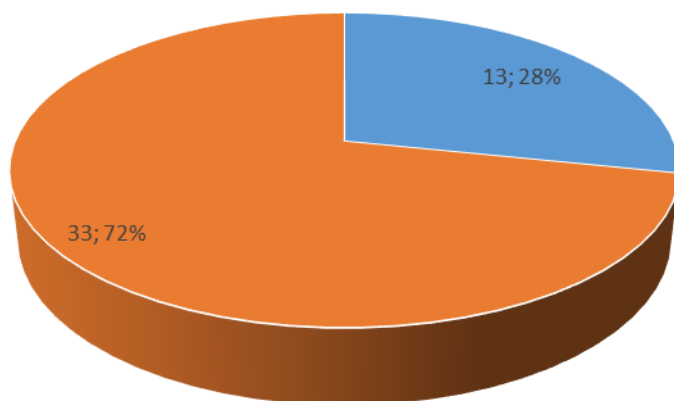
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30 of the farmers have stated that they were informed about the "Essential Health and Safety Requirements" which are mandatory requirements of 2009/127 / EU Directive and 2006/42 / EU Machinery Directive and 17 of them have stated that they were informed about the 2009/128 / EU Directive.

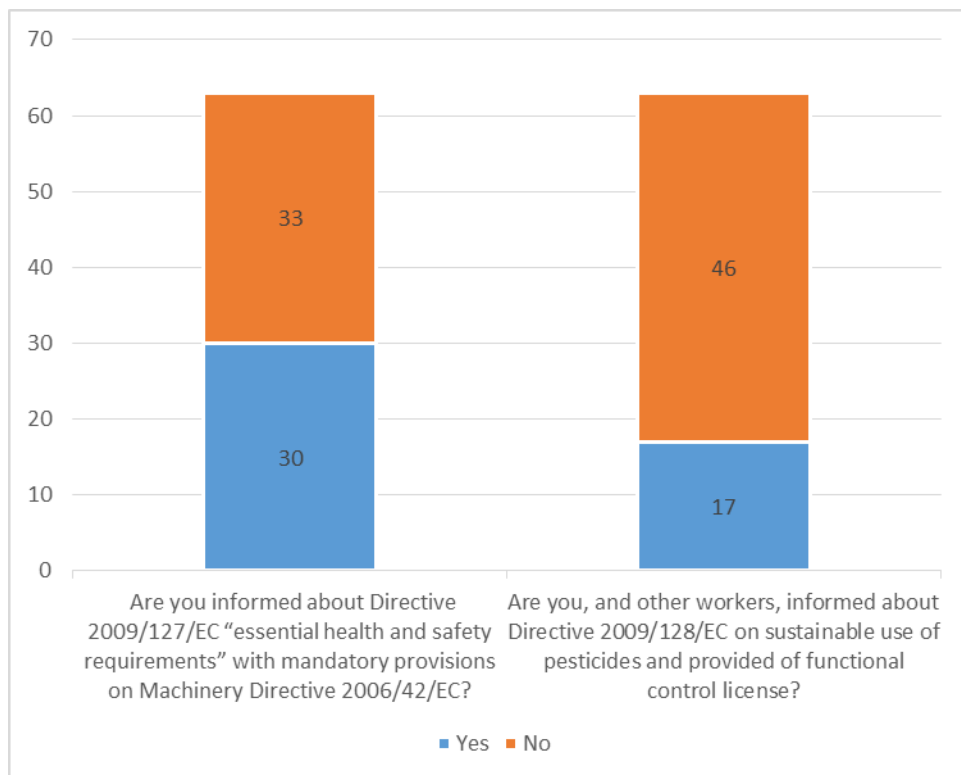
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Has/have your sprayer/s the following documents?



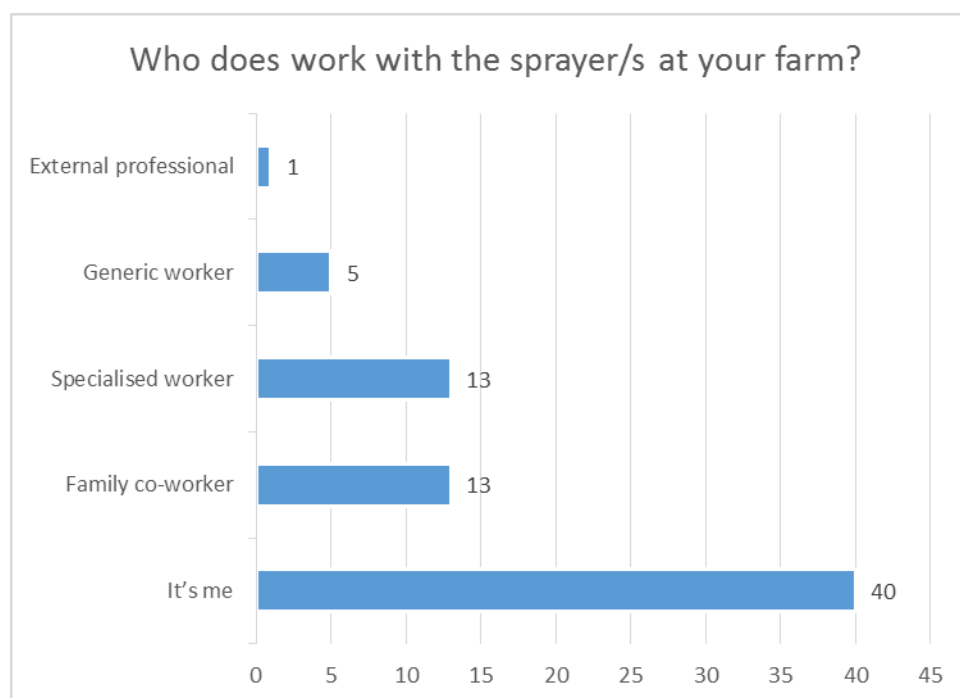
■ Declaration of conformity ■ CE Marking

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In addition, the survey results show that the majority of the farmers use the sprayers by themselves. Farmers who do not use sprayers themselves use a worker from family members or an expert working sprayer. Only one farmer uses an external professional for operating the sprayers.

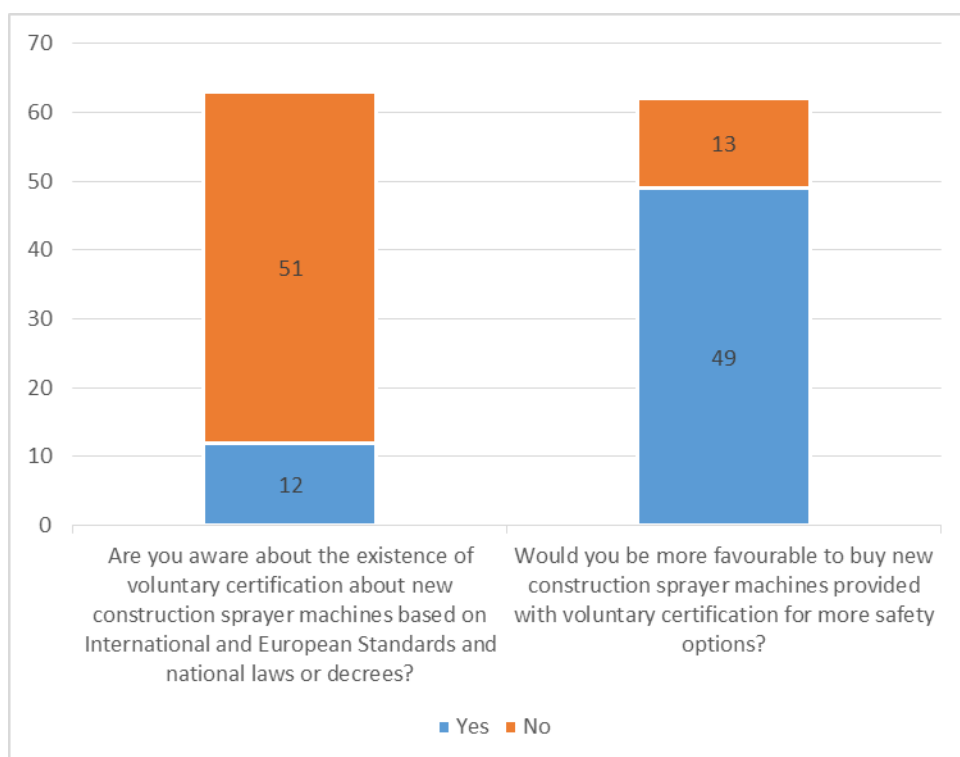
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## 1.2 – Voluntary certification (about sprayer machines of new construction)

Only 12 farmers in the research area were aware of the existence of international European Standards for newly introduced sprayers and voluntary certification based on national laws and regulations, while 49 of them have stated that they preferred voluntary certification when purchasing newly introduced sprayers on the market to provide safer working opportunities.

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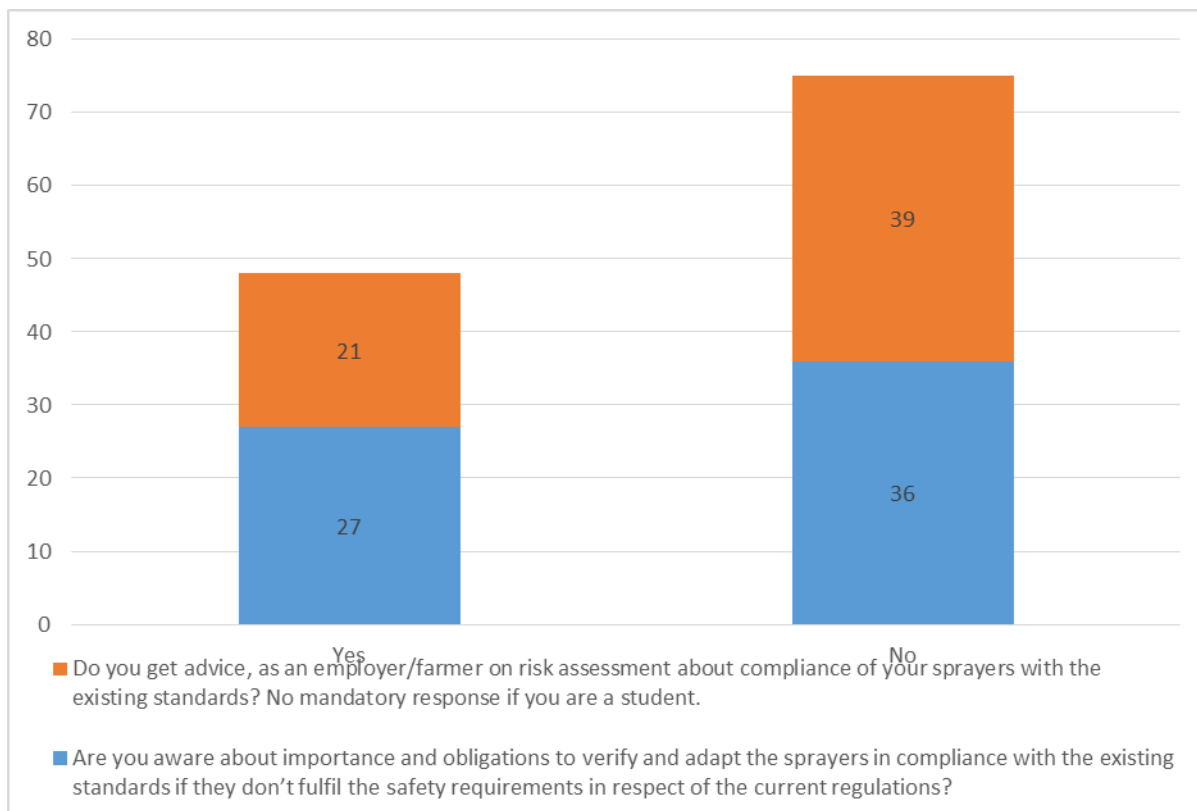
## 2 - Adjustment for safety aspects of sprayer machines in use

**Is it mandatory to evaluate the safety aspects of a Sprayer Machines in use before new placing into the market?**

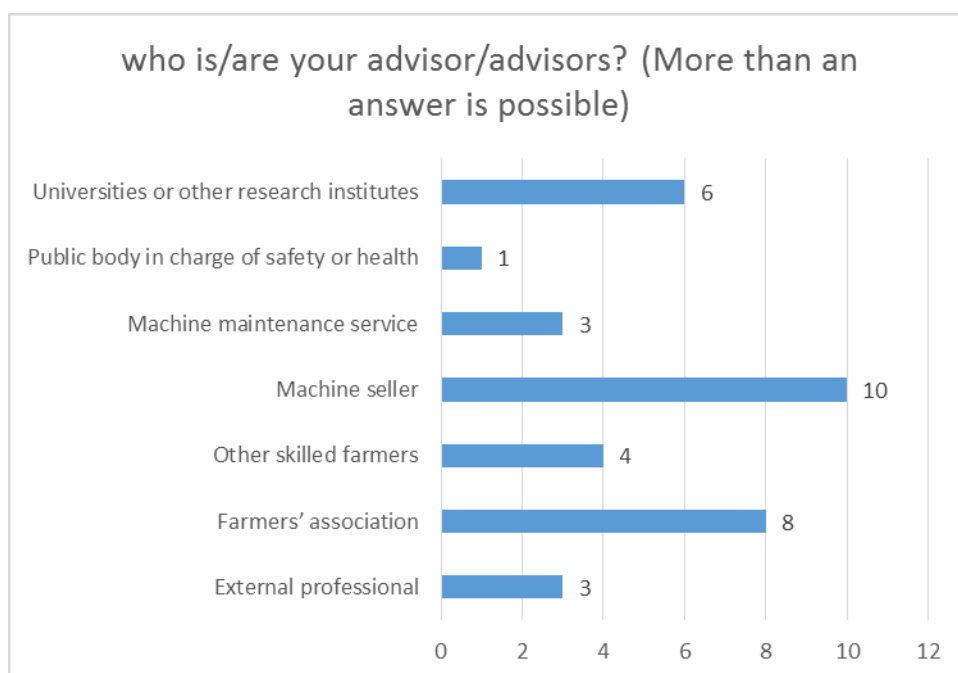
Regarding the safety of newly introduced sprayers on the market, 27 farmers have stated that they were aware of the necessity of making adaptations and adapting to the existing standards of sprayers which are used according to the regulations being applied and which do not meet safety requirements, also 21 farmers / employers have indicated that their sprayer have been advised to carry out risk assessments in accordance with existing standards. 10 of the farmers have been benefited from recommendations from machine dealers, 8 from farmers' unions and 6 from universities and other research institutes.



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### 3 - Inspection of sprayer machines in use

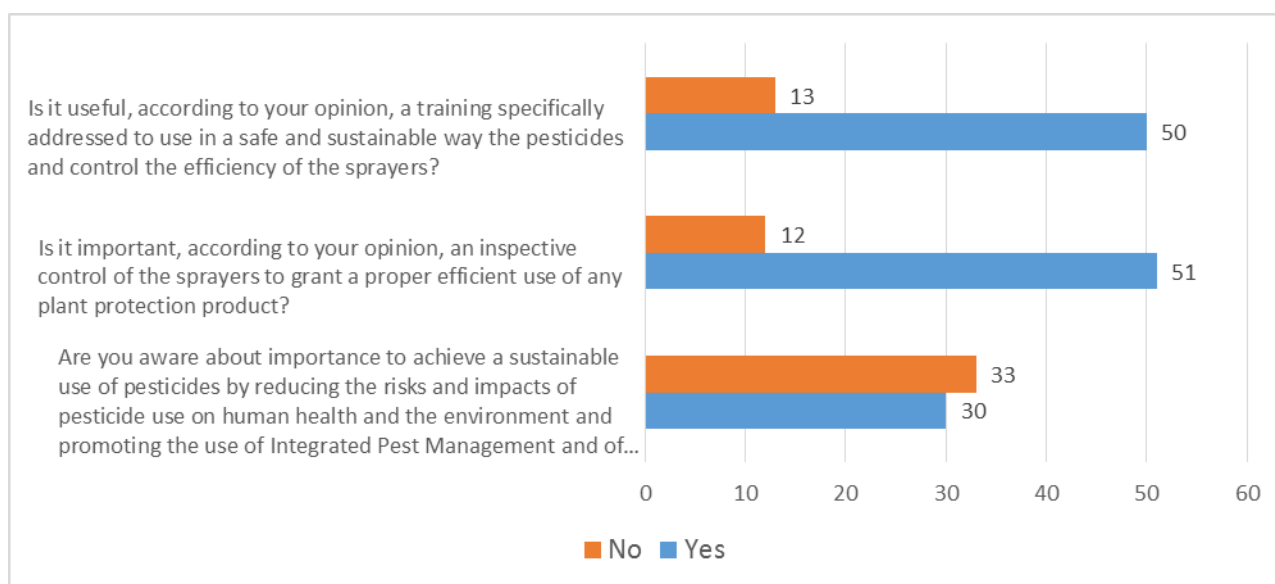
**Is there an inspection activity of sprayer machines in use in your country?**

Of those interviewed, 50 of them thought that a training with a sustainable and safe use of pesticides and controls that needed to be done for effective and correct use of the sprayer would be useful, while 13 of them thought it was not beneficial.

In order to make effective use of any plant protection product (for the plant protection product to make effect to the insect), 51 people think that it is important to carry out the inspections of the sprayer, while 12 people think that it is not important.

However, the number of people interviewed in the field of research indicates that the use of pesticides has negative effects on human health and the environment and that they are not aware of the importance of using sustainable pesticides by reducing their risks and using alternate Integrated Pest Management and non-chemical alternative approaches / techniques to pesticides.

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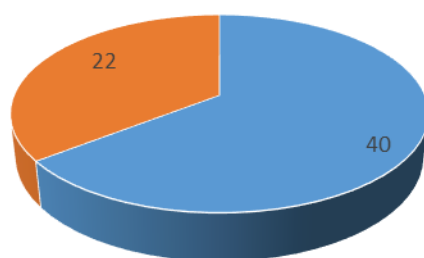


#### 4 - Current training or information activity

40 of the interviewed farmers have said that training and information activities do exist especially in the areas of safe use, maintenance, inspection and control of the sprayers in their region. Machine exhibitions are the ones with taken most participation from these activities. Other activities that follow are trainings on controls that must be performed to enable the sprayer to be used effectively, as well as trainings on maintenance of the sprayer and safe use of the sprayer. Farmers also want to organize the same type of training more often.

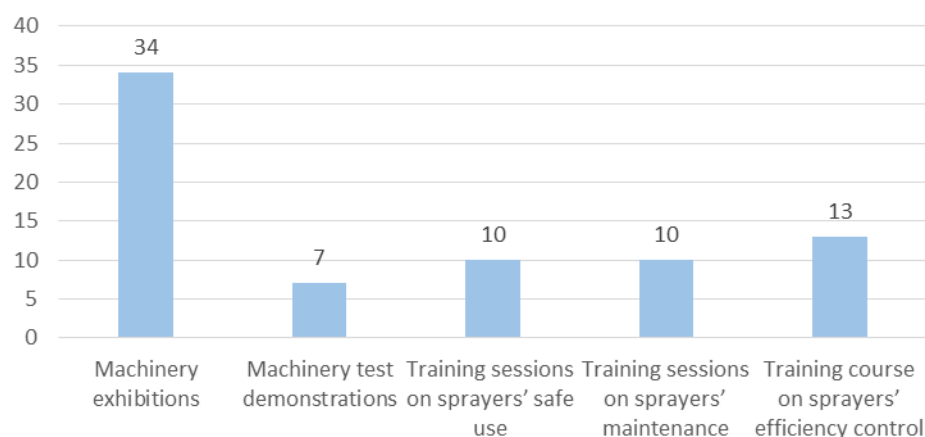
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Are there in your country/region/district training and information activities on safe use, maintenance and control of the sprayers?



■ Yes ■ No

What kind of activities do you attend? (More than an answer is possible)



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## 5 – Plant Protection Products (PPP) and typology of Pesticide Application Equipment (PAE)

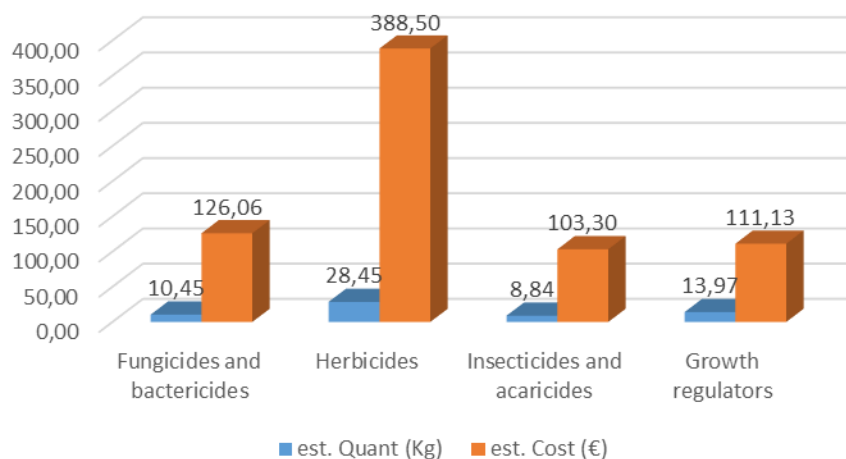
The interviewed farmers stated that they have been using the most protective glasses, rubber gloves and air-disposable respirators with plant protection products and pesticide application equipment, respectively. There are only 5 people using a chemical cartridge breathing mask.

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Personal Protective Equipment (PPE) you use,  
combined with PPP and PAE? (More than an  
answer is possible)

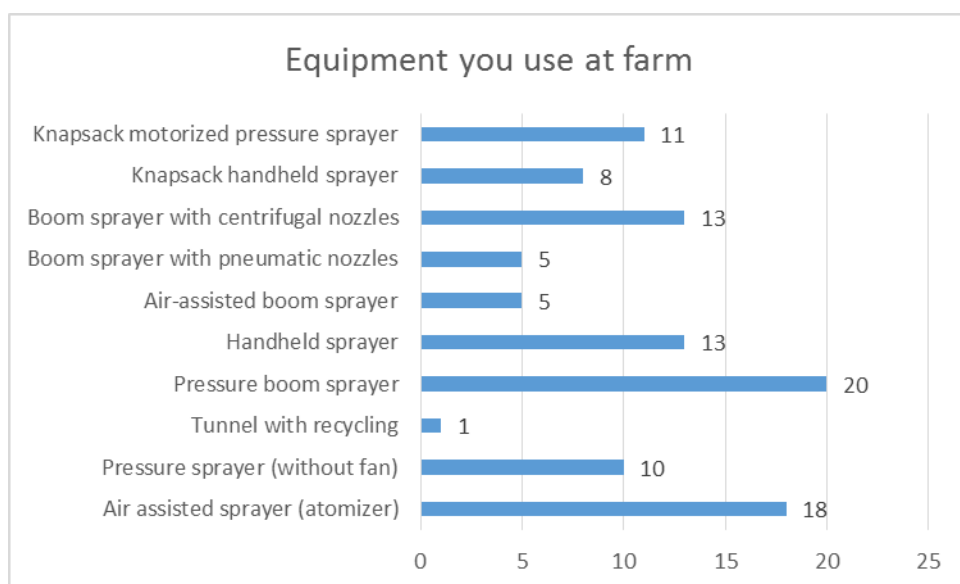


Average pesticides' consumption



Farm enterprises use weed pesticides with a maximum of 28.5 kg during the year, followed by plant growth regulators with about 14 kg. The total pesticide consumption of the farm enterprises is 62 kg and cost 729 Euros on average.

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The most commonly used machines in the research area are hydraulic type field sprayer (pressure boom sprayer), air-assisted sprayer, boom sprayer with centrifugal nozzle and handheld sprayer.

### Suggestions from the interviewees

*No suggestions*

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## **TECHNICIANS/EXPERTS TARGET GROUP**

### **0.1 PERSONAL DATA**

A total of 36 surveys were conducted with manufacturers and technicians. Of those interviewed, only 6 were females. Almost all of the technicians have undergraduate and graduate training. The average age of the participants was 45. Among technicians who participating to the survey, 4 of them had between 11 - 20 years of experience, 2 of them had 6 to 10 years, and 4 of them had less than 5 years of experience. In total, 26 technicians had 20 years or more of work experience.



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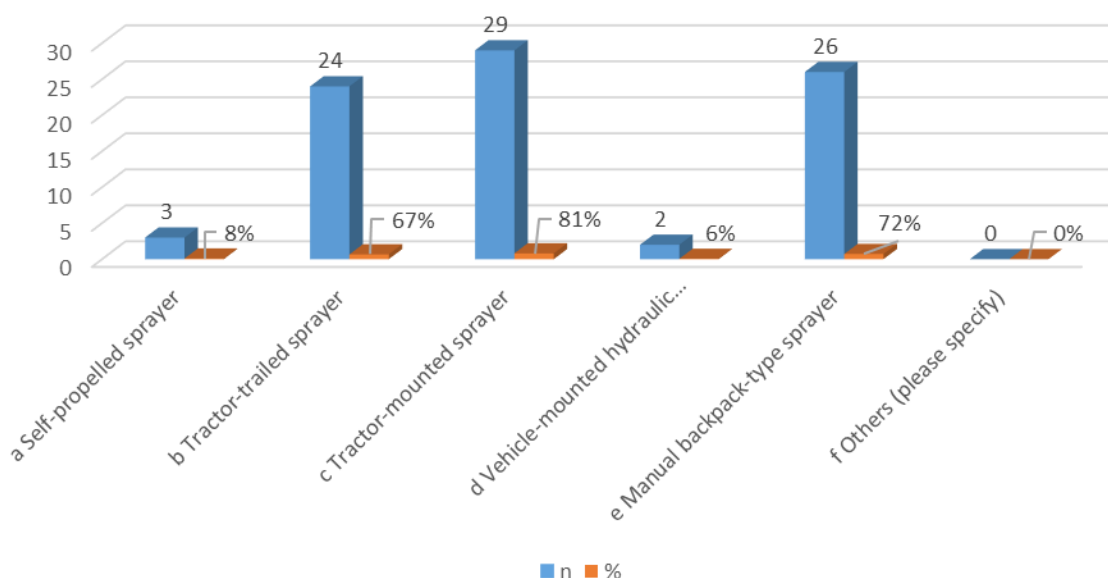
## **1 USE OF SPRAYER MACHINES**

### **1.1 - Sprayer machines of new construction**

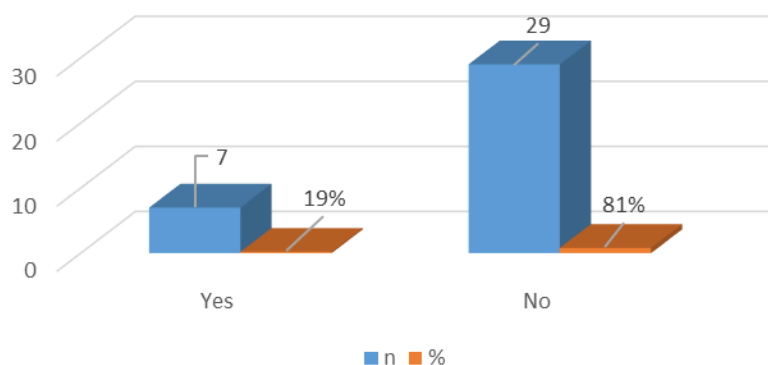
The most preferred type sprayer in the field of investigation is tractor-mounted sprayer with 81%. This is followed by a 72% knapsack hand sprayer and a 67% tractor-trailed sprayer. Seven of the interviewees expressed that the farmers were informed about the "Essential Health and Safety Requirements" which is the mandatory requirements of the 2009/127 / EU Directive, only 5 of them suppose that farmers are informed about the 2009/128 / EU Directive.

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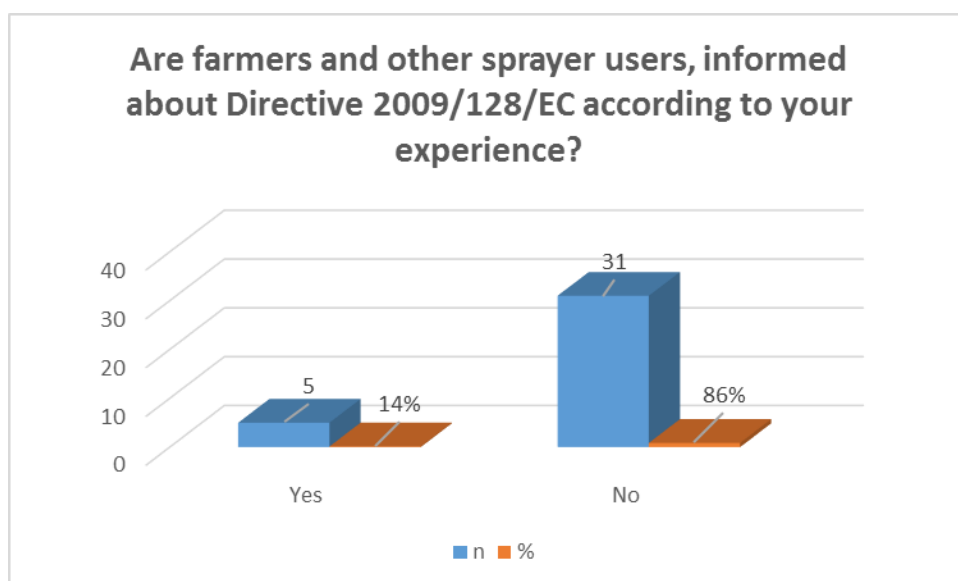
### What type/s of sprayer machines are the most popular?



### Are farmers informed about Directive 2009/127/EC “essential health and safety requirements” according to your experience?



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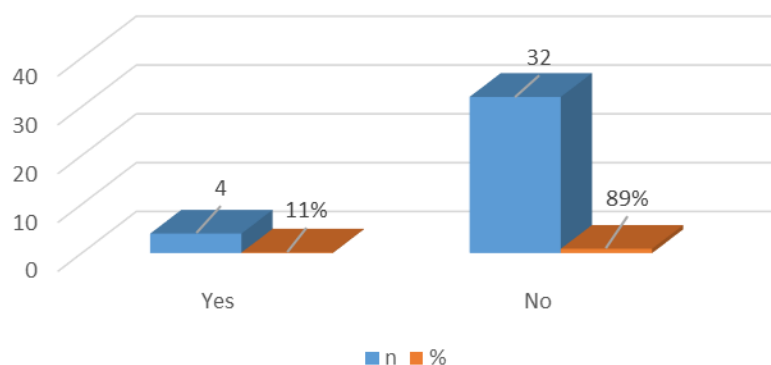
## 1.2 – Voluntary certification (about sprayer machines of new construction)

Only 4 out of 36 interviewees expressed that farmers were aware of the existence of voluntary certification for newly introduced sprayers based on international, European Standards and national laws and regulations.

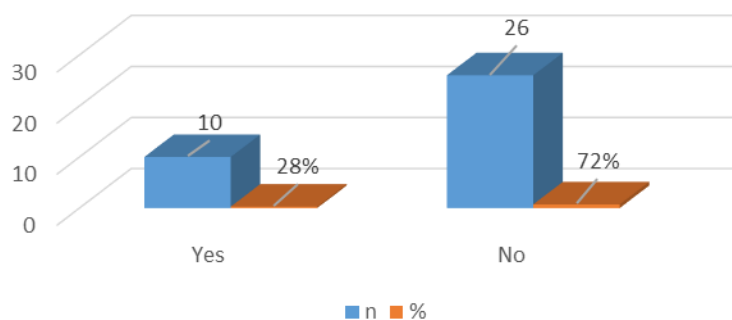
Only 10 of the interviewed 36 people in order to work more safely have stated that they preferred to have voluntary certification while purchasing the newly introduced sprayer on the market.

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Are farmers aware on the existence of voluntary certification about new construction sprayer machines?



Are farmers more favourable to buy new construction sprayer machines provided with voluntary certification for more safety options, according to your experience?

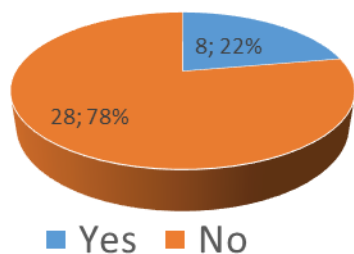


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## **2 - Adjustment for safety aspects of sprayer machines in use**

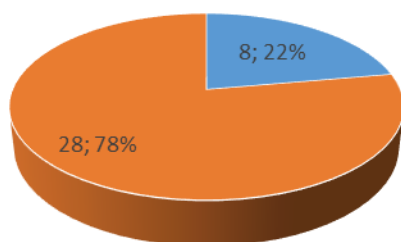
Only 22% of respondents think that farmers are aware of the importance and necessity of ensuring compliance and compliance with current standards of sprayers that are used according to the regulations in force and that do not meet safety requirements, and that farmers are advised that their sprayers should make risk assessments in accordance with existing standards.

Are you aware about importance and obligations to verify and adapt the sprayers in compliance with the existing standards if they don't fulfil the safety requirements in respect of the current regulations?



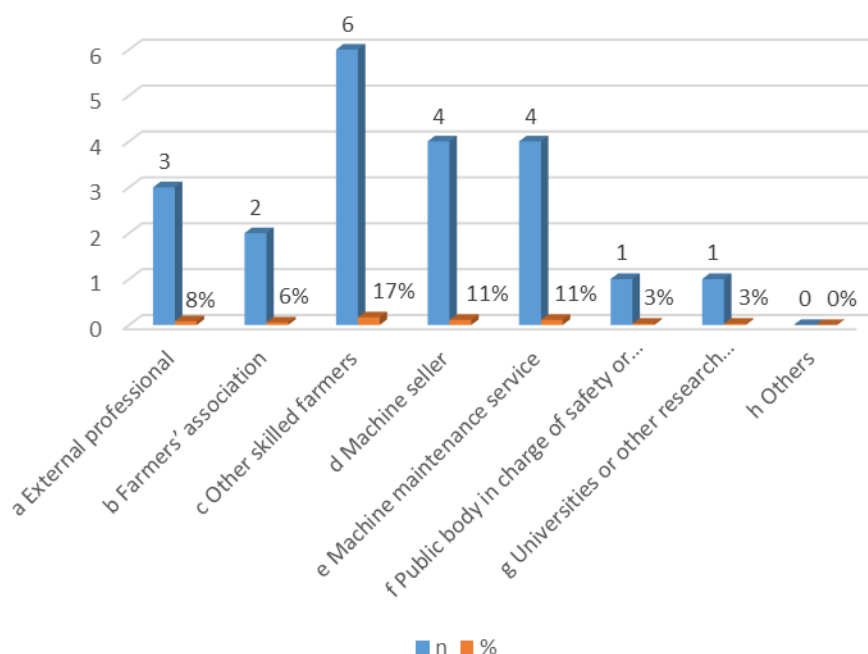
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Do farmers get advice on risk assessment about compliance of their sprayers with the existing standards?



■ Yes ■ No

If yes, who is/are your advisor/advisors? (More than an answer is possible)



■ n ■ %

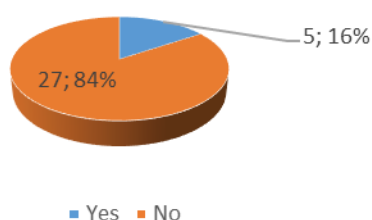
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Participants in the survey indicated that only 6 of the respondents thought that farmers had received advice from other experienced farmers, 4 from machine seller or dealers and machine repair and maintenance services, and 3 from external experts.

### 3 - Inspection of sprayer machines in use

While only 5 of the interviewees thought that farmers were aware of the importance of using alternative pest management and non-chemical alternative approaches / techniques to pesticides by achieving sustainable use of pesticides and by reducing the risks with negative impacts of pesticide used on human health and the environment, 27 of the farmers do not have this consciousness.

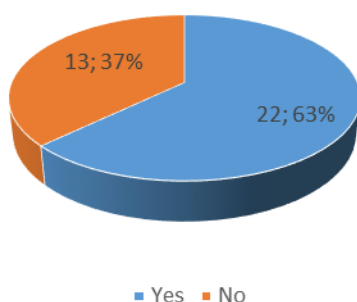
Are farmers aware about importance to achieve a sustainable use of pesticides by reducing the risks and impacts of pesticide use on human health and the environment and promoting the use of Integrated Pest Management and of alternative approaches or tech



22 of the interviewees think that it is important for the farmers to carry out the examination of the sprayer to effectively utilize any plant protection product.

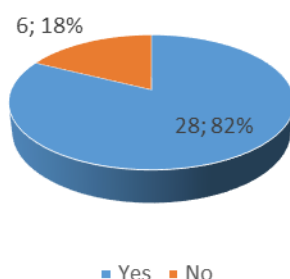
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Is it important for farmers, according to your experience, an inspective control of the sprayers to grant a proper efficient use of any plant protection product?



6 of the respondents think that such training is not beneficial to farmers, while 28 of those surveyed think that a training that includes controls for sustainable, safe use of pesticides and effective and correct use of sprayers is beneficial to farmers.

Is it considered useful by farmers, according to your experience, a training specifically addressed to use in a safe and sustainable way the pesticides and control the efficiency of the sprayers?

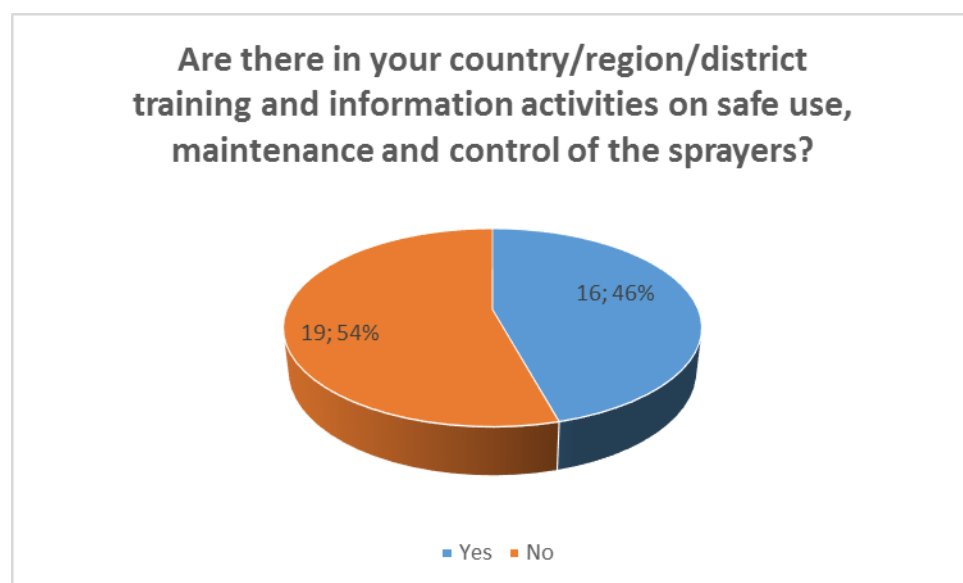




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#### 4 - Current training or information activity

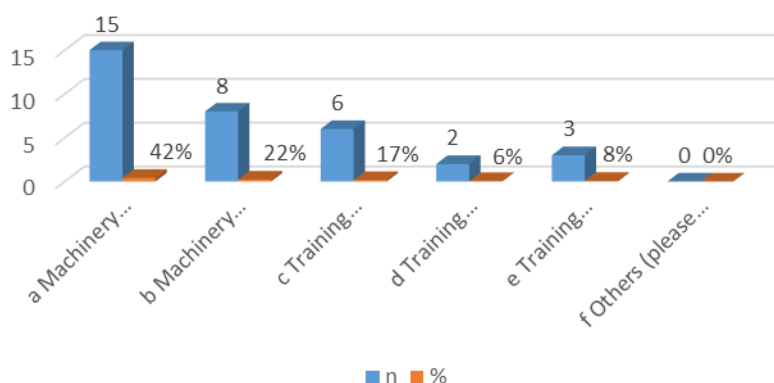
16 of the respondents have stated that they had training and information activities in the area on safe use, maintenance and inspection-control of sprayers.



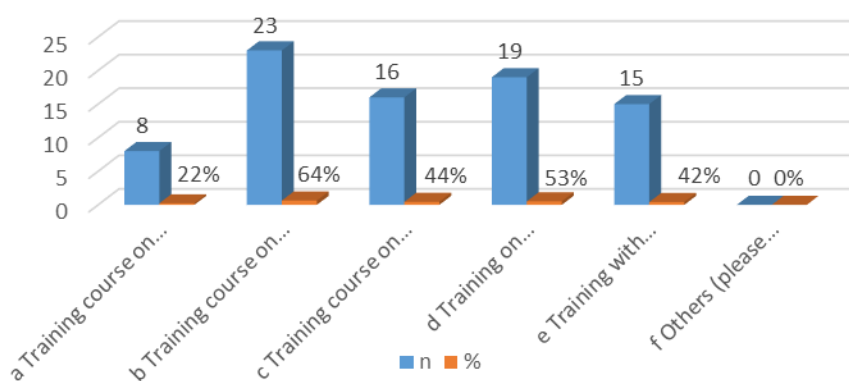
According to surveyors, farmers mostly attend trainings on machine fairs, machine test demonstrations and safe use of sprayers. In addition, the farmers want to have training on sprayer maintenance, trainings on integrated pest control (related to chemical use), trainings on controls to be used effectively for sprayers, training on machine test demonstrations, and finally training on safe use of sprayers.

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If yes, what kind of activities farmers are more used to attend? (More than an answer is possible)



What kind of training courses farmers would like to attend, according to your opinion? (More than an answer is possible)

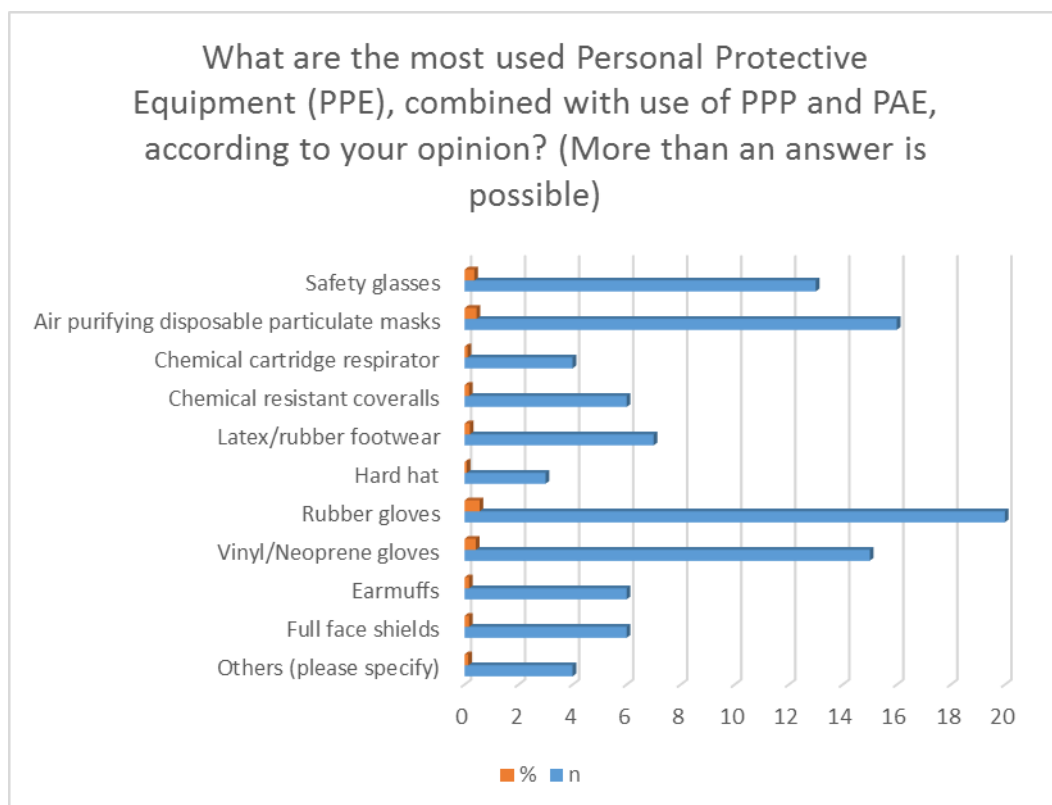


## 5 – Plant Protection Products (PPP) and typology of Pesticide Application Equipment (PAE)

According to experts that was surveyed in the field of research, plant protection products, along with pesticide application equipment, rubber gloves and air-treated disposable masks are ones

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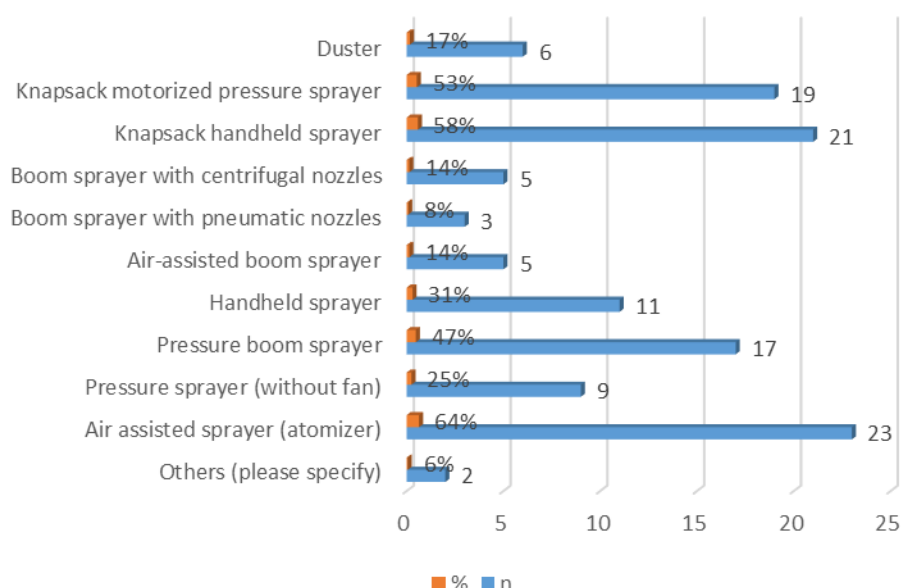
used mostly. This was followed by synthetic rubber gloves, latex rubber shoes, protective glasses, full face protective mask, earmuff and chemicals resistant overalls.



According to the experts in the survey, the most used equipments are air-assisted sprayer (atomizer), knapsack handheld sprayer, knapsack motorized pressure sprayer, hydraulic field sprayer and handheld sprayer.

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What equipment, to your knowledge,  
are most popular from the following  
list?



## Suggestions from the interviewees

There were not any suggestions from the interviewees.

## CONCLUSIONS

There are two main approaches on manufacturing, market and usage of plant protection machinery in Turkey. First approach is called as “Product Safety Approach” and could be summarized as minimum health and safety requirements of consumer needs on plant protection equipment and machinery products. Second approach is the practices related to the Plant Protection Equipment and Machinery Directive. Product safety approach covers the plant

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protection machinery product groups within the framework of a new approach directive, Machinery Safety Directive (2006/42 / AT). The new directive is in practice in our country by 03.03.2009, parallel to the revision of the EU Regulation on the Directive (03.03.2009 dated and numbered 27158 published in the Official Gazette). "Pesticide Application for Machines" paragraph is added to the 2006/42 / EC Machinery Safety Directive, which is in particular reveals the importance of primary health care and product safety issue, explaining the safety requirements for machines used in the application of plant protection products. The Ministry of Science, Industry and Technology is the authorized organizations in our country for the publication and implementation of this regulation. There is a special regulation, carried out by Ministry of Food, Agriculture and Livestock General Directorate of Food and Control, on the manufacture and sale of plant protection machinery. This regulation, prepared based on 5996 Veterinary Services, Plant Health, Food and Feed Law, is "Regulation on Plant Protection Equipment and Machinery" (published on 02.04.2011 whit number 27893 in the Official Gazette). The purposes of this regulation are practicing healthy and reliable crop production, the preparation, implementation and dissemination of the integrated pest management programs and projects for the development of human health and environmentally friendly pest control methods. This second regulation covers: approval, manufacturing, licensing of Plant Protection Equipment and Machinery; duties and responsibilities of the dealers; principles and procedures related to supply and control of the market. There is no inspection procedure for the application of currently used plant protection machinery in Turkey.