



Advancing work safety for pest control workers Pest Practice

Needs Analysis: Anticipation and analysis of training and skill needs

The **PEST PRACTICE** project “Advancing work safety for pest control workers-Pest Practice” (2013-1-GR1-LEO 05-13904) is co-funded by the EU Lifelong Learning Program – LDV Multilateral Projects for Transfer of Innovation.

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Centro Agricoltura Ambiente “G.NICOLI”



Cyprus Center for European and International
Affairs



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The current report presents the Final Needs Analysis prepared for WP3: Needs Analysis, of the PEST PRACTICE project. The Final Needs Analysis is the deliverable No 11 and consists of the analysis of the results of the collected questionnaires in each of the target countries, namely Greece, Italy and Cyprus.

The Final Needs Analysis was prepared by CAA, BPI and CCEIA.

Introduction

“Pest Control isn’t rocket science, but it does require a larger body of knowledge to deal with”

Given the great need for innovative and practical ways to improve competences in work safety, pest control sustainable methods and pesticide use as part of the courses in the target countries, the proposed project aims to transfer, adapt and further develop the “Advanced qualification training Health & Safety Including Occupational Health Management in SME- LABITAS project”.

The main output of LABITAS project was a qualification concept (OHM) which takes into account the characteristics of the countries involved and contains the analysis and evaluation of the existing occupational health and safety policy in crafts enterprises, the analysis and evaluation of barriers and the adjustment of the existing concept. PEST PRACTICE project aims, by transferring the knowledge gained by the innovative LABITAS project, to address and further develop occupational health, public health, environmental risks, and efficacy of pest control agents.

The Pest Practice project aims to build on existing knowledge, adapt and expand it, and develop an intervention strategy well-focused on the needs of pest control companies in the target countries, namely Greece, Italy and Cyprus.

The particular needs analysis report was prepared in the framework of WP3. The overall objective of WP3 is to prepare the ground for the transfer of the innovative tools and methods through further analysis, building on the initial transfer material from LABITAS project. The first step of WP3 was to identify in detail the transferable content and methodology and analyze its blending and adaptation needs. Afterwards, based on the results of the created questionnaires, the next target was to specify the current needs of the target groups in regard to the tools and methods to be transferred, in particular the relevant curricula and VET (Vocational Educational Training) practices.

In general, the PEST PRACTICE project, through the developed questionnaires, the consequent needs analysis and the developed curriculum, aims to pave the way for pest control professionals, towards the *zone of proximal development*, e.g to build up their

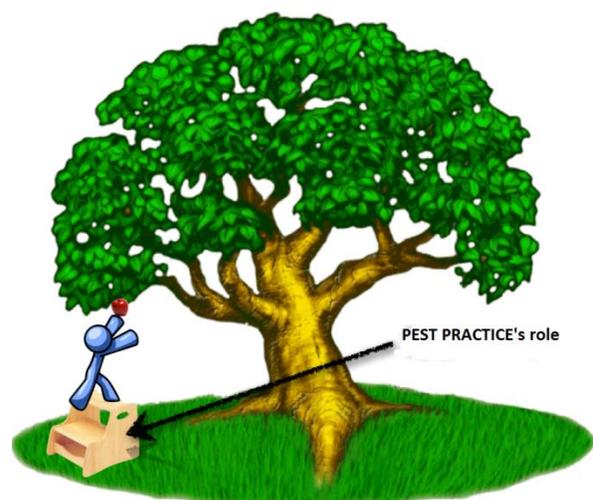


Image 1: The role of PEST PRACTICE: Transfer LABITAS experience aiming at enhancing the knowledge and skills of pest control professionals

existent knowledge and further enhance and develop their skills.

The zone of proximal development (ZPD) is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under guidance, or in collaboration with more capable peers" (Vygotsky, 1978).

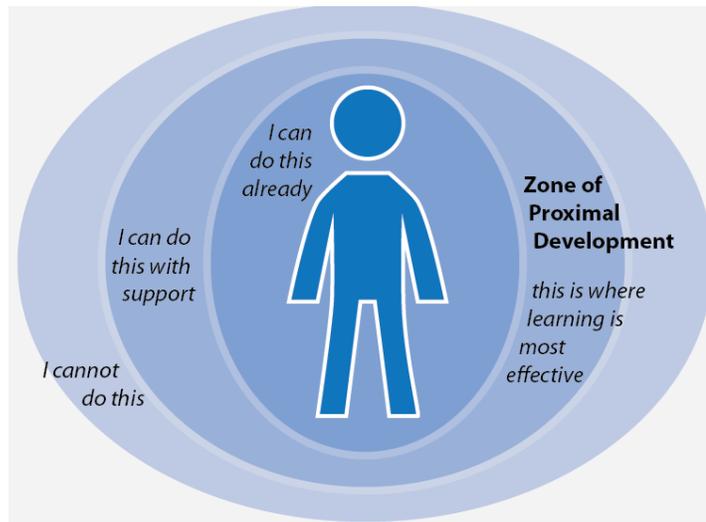


Image 2: Zonal of Proximal Development (Ben Mounfield, 2011)

The main objectives of this work were the following:

1. Create the online questionnaires addressed at the pest control professionals. The questionnaires focus on assessing their interest and perception of their own situation and their level of risk awareness.
2. Assessment of the results of the questionnaires collected in each of the target countries in order to better exploit them in the successive phases.

Materials and methods

To offer successful and professional pest control services you're required to be professionally trained, and if you're using pesticides, you have a legal obligation, depending on the country's legal framework, to be adequately trained and competent. You also have a safety obligation to the environment, other people and non-target species, as well as yourself. The needs analysis aims to identify the main training needs of pest control managers, technicians and operators, in order to learn how to control pests safely, legally and effectively.

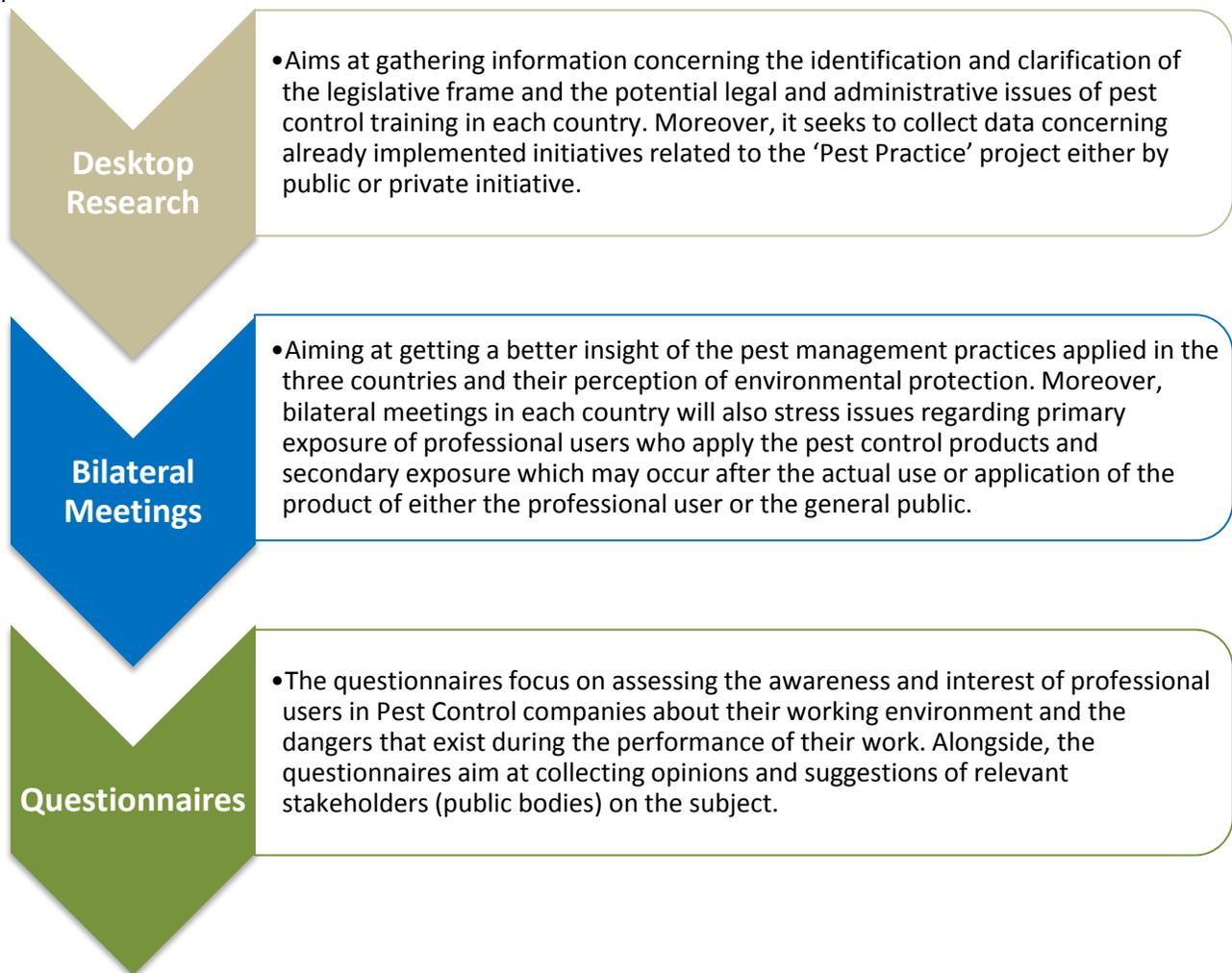
The needs analysis aims to identify the knowledge and skills required to best provide the consumer with safe and effective solutions to a full range of pest problems commonly occurring in the urban environment.

Methodology:

The consortium has embarked on several ways to identify the target group needs, the existing relevant training courses, the relevant legislation at the EU level and in each country and to provide detailed training adaptation analysis.

In particular, desktop research and bilateral meetings, helped the consortium to get a better insight on the issues of pest management training and design a questionnaire that gives valuable information for the next step of PEST PRACTICE which is the adaptation of the curriculum and the development of basic training courses.

These tools (desktop research, bilateral meetings and finally the questionnaires) are presented as follows:



The questionnaire survey of PEST PRACTICE was conducted in Greece, Cyprus and Italy. An initial questionnaire was designed by the consortium in English, which was afterwards translated in Greek and Italian.

The desktop research and the bilateral meetings in the three target countries, revealed the need to slightly adapt some questions of the initial questionnaire in each country. Indeed, as the desktop research has shown, the three countries are in a different legislative and administrative level in the field of pest management. Moreover, in Greece and Cyprus the existent training courses on pest management are only a private initiative while in Italy the public role is more enhanced and the offered of training courses is within a public frame. Thus, the consortium designed three specifically adapted questionnaires to better catch valuable information in the three countries.

The consortium used the free online survey administrator – Survey Monkey.

The questionnaire is addressed to understand pest control professionals' needs as well as to record any suggestions from the stakeholders (research institutes, Ministry of Agriculture, Public Health Agencies, Pest Control Associations).

The questionnaire was divided in 4 main sections:

- **Section 1: Demographic information**, questions aiming at collecting the profile of company/stakeholder's.
- **Section 2: Training experience**, questions aiming at gaining information related to the training obtained so far. Especially for Pest Control companies, this section addresses both managers and workers alike.
- **Section 3: Current working environment**, questions aiming at exploring and describing the current working environment in private companies, public bodies (e.g. Ministries) and other stakeholders (e.g. Pest Management Associations). Especially for Pest Control companies, this section addresses both managers and workers alike.
- **Section 4: Training expectations**, questions aiming at identifying the training needs and the preferences for the specific tools and formats to be used.

Target groups:

The questionnaires were distributed in professionals of pest management, in Greece, Italy and Cyprus. The target was to receive 20 responds in each country.

Greece: The questionnaires were distributed to pest professionals, professionals in the field of biocides, other professionals involved with pest control (e.g.

administrative staff of the ministry of agriculture, researchers focused on pest control and Pest management association). The questionnaire was distributed to 419 recipients (326 recipients were professionals in pest management, 47 recipients from the field of biocides, 14 recipients from research institutes occupied with pest control research and 32 recipients from the ministry of Agriculture). We managed to receive 168 responses, which over exceeded the target of 20 responses.

Italy: The questionnaires were distributed to the managers of pest control companies. It was distributed to 1,500 recipients (pest control professional operators, researchers, local public bodies) and we managed to receive 36 responses.

Cyprus: The Cypriot Questionnaire was distributed to the managers of pest control companies and to key persons and personnel of the public sector responsible for Pest Control (Ministry of Agriculture, Natural Resources and the Environment/Department of Agriculture/Sector of Agrochemical's control and Ministry of Health - Public & Environmental Health Sector.

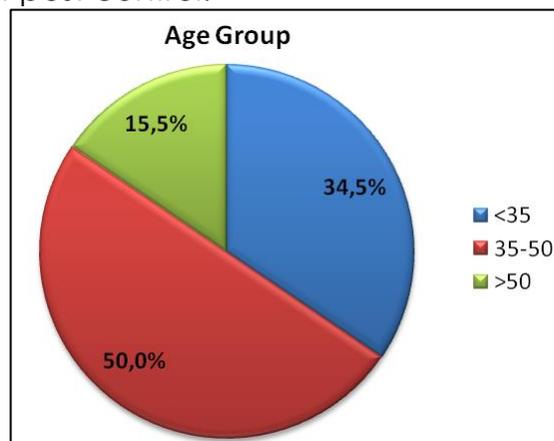
Results and Discussion

Results of the survey for Greece:

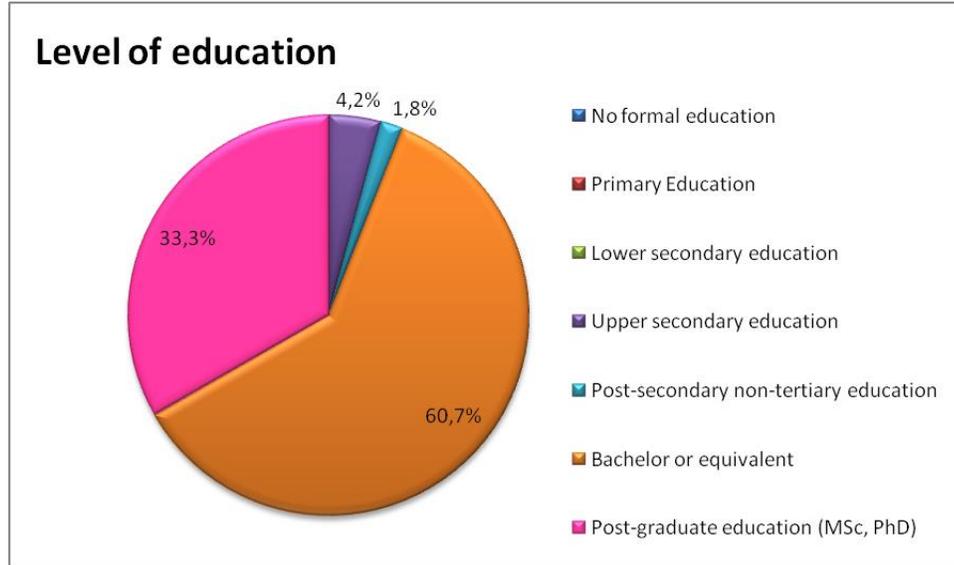
The collected responses for Greece exceeded the initial goal which was 20 completed questionnaires. The final number of respondents was 168.

Section 1: Demographic information

Regarding the respondents age, half of the participants are between 35 and 50 years old, and 34.5% are below 35 years old. The fact that the 84.5% of the respondents are below 50, shows the interest in these age groups for further education in the field of pest control.

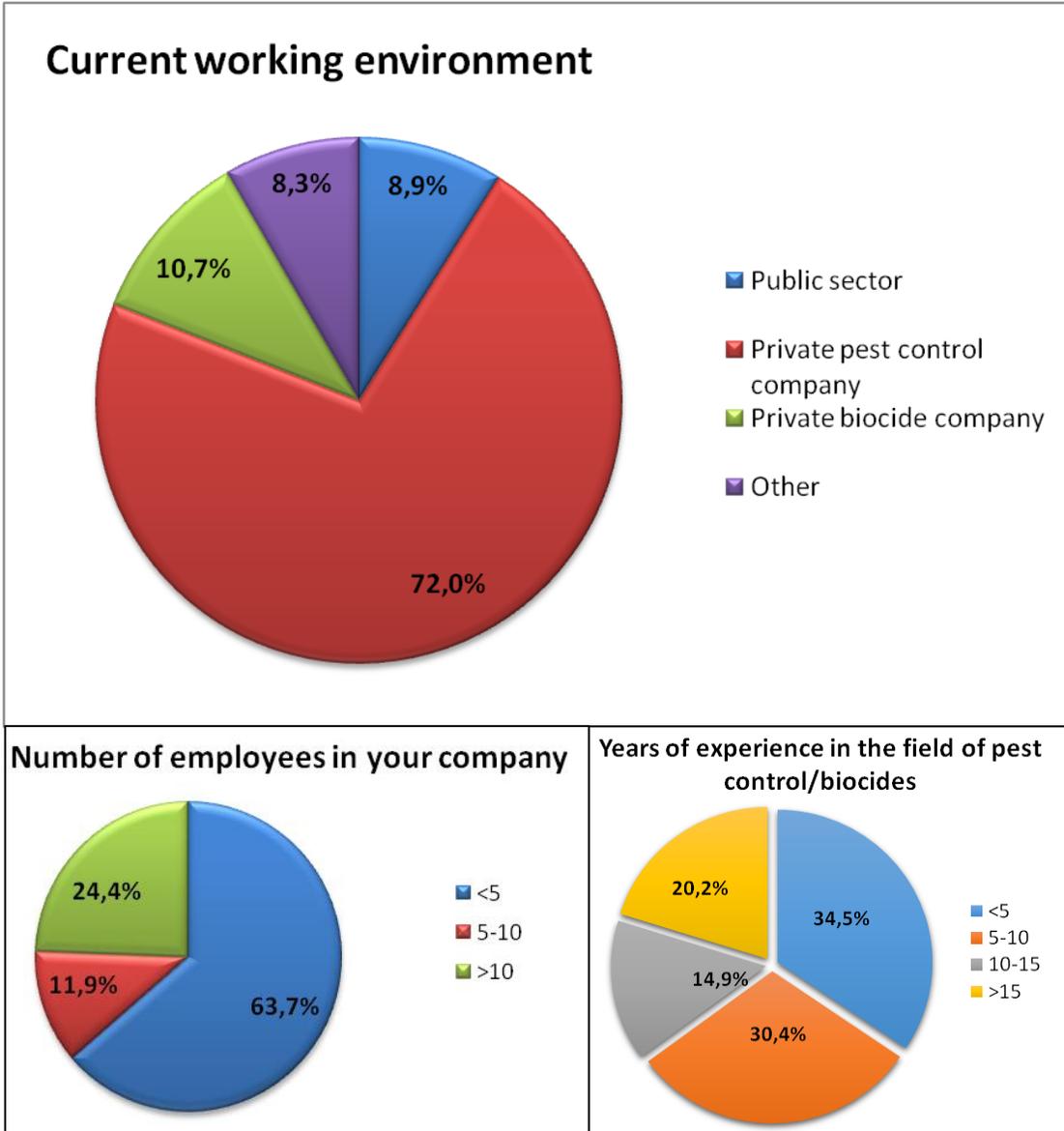


When it comes to education, more than 93% have a bachelor degree or more. This validates the statement that most of the professionals in pest control have a significant educational background.

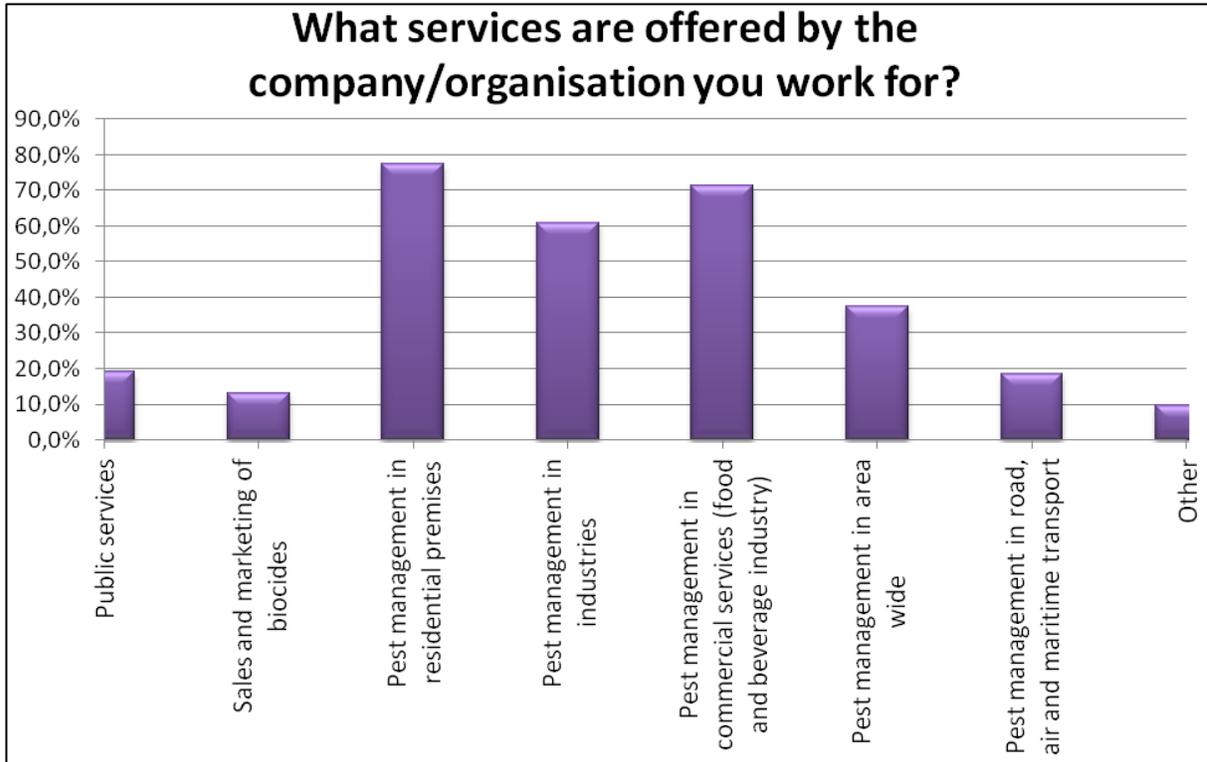


As for the current working environment, most of the respondents (>82%) work in private pest control or biocides companies. Their vast participation in the survey implies their need and interest for further education and training in the field of pest control. There was also an 8.3% of the respondents that chose "other". From their responses, we can conclude that most of them own a pest control company or work in a private company focused on gardens' design.

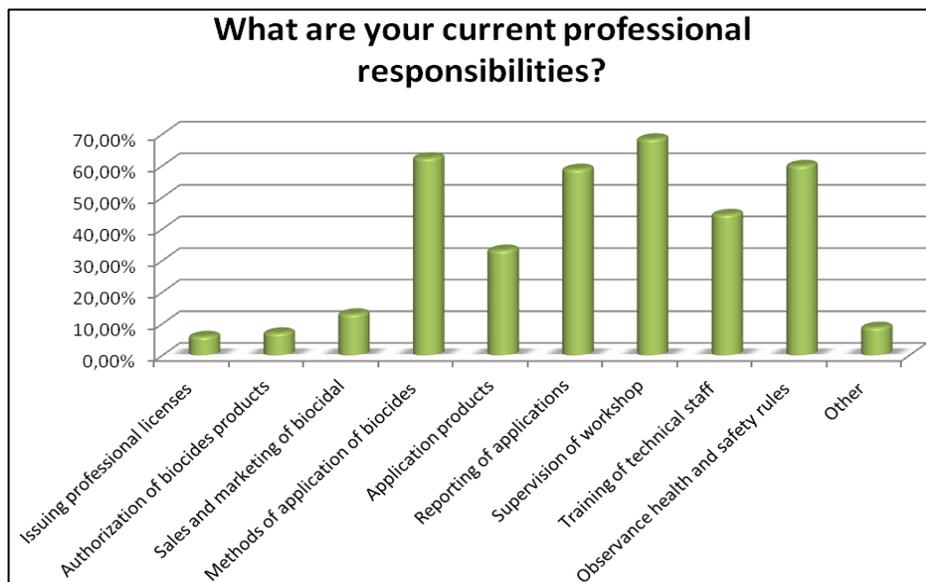
Most of the respondents (>63%) work for small private pest control/biocides companies. Moreover, more than 60% of the respondents, work for less than 10 years in the sector.



Concerning the main services offered by their company/organization, the results reveal that the vast majority of the respondents are involved in the application of pest management services. This is a very important parameter for the project, since this is the main group that PEST PRACTICE wants to address their needs. In particular, more than 60% are involved in pest management in residential premises, industries and commercial services.



The results concerning the current professional responsibilities (were the respondents could choose more than one answer), imply that the major part of the respondents is significantly involved in the delivery of pest control services. Indeed, the main responsibilities of the respondents include methods of application of biocides, reporting application, supervision of workshop, training of technical staff and observance health and safety rules.



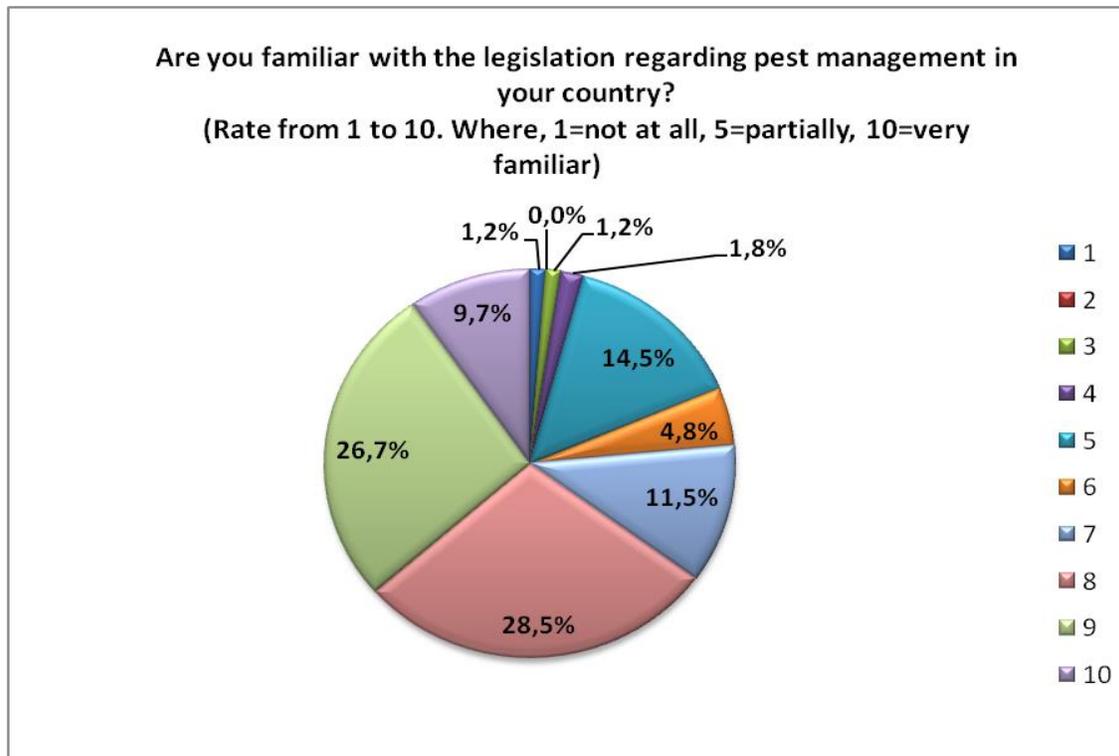
Section 2: Training experience

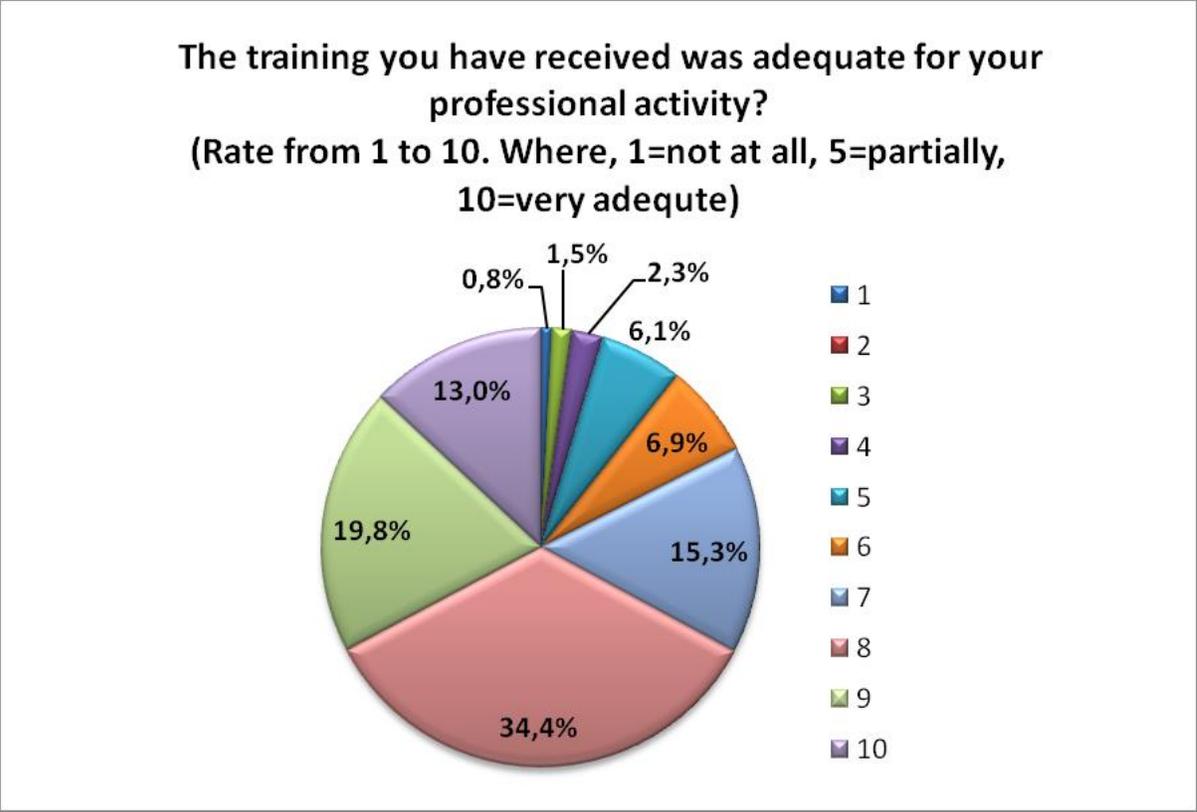
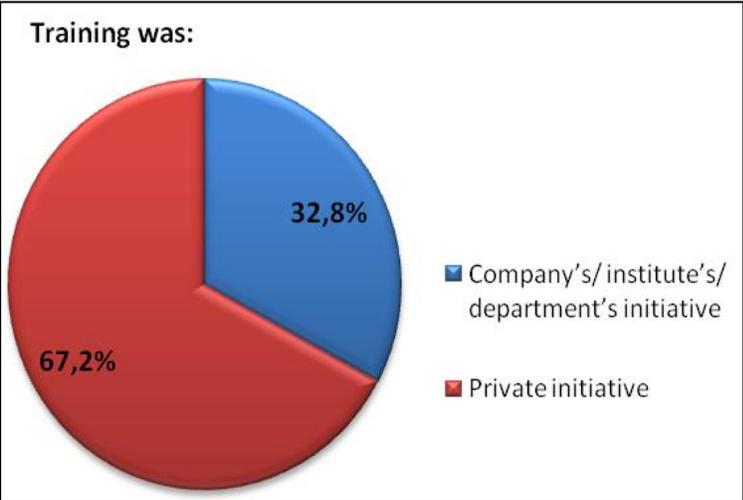
The second part of the questionnaire was aimed at gaining information related to the training obtained so far.

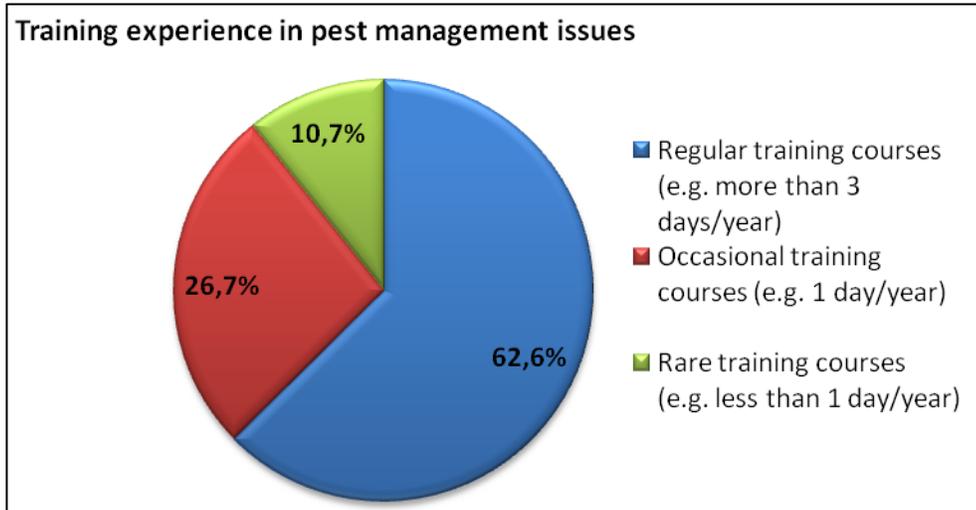
As revealed in the following diagrams, more than 60% believe that they are familiar with the legislation regarding pest management. Indeed, more than 80% of the respondents have been offered some type of training concerning pest management, which highlights their need for training on the particular field. Furthermore, for a percentage of respondents that exceeds 67%, the offered training was a personal initiative.

Nevertheless, when it comes to the evaluation of the offered training in terms of adequacy for their professional needs, the answers vary with the majority believing that their training was more than partially adequate.

Furthermore, it is impressive that more than 60% of the respondents undertake regular training courses.







Section 3: Current working environment

The third section provides a liaison with LABITAS project from which the transfer of knowledge is made to PEST PRACTICE. The section of the questionnaire presents questions aiming at exploring and describing the current working environment, in terms of work safety, in private companies, public bodies (e.g. Ministries) and other stakeholders (e.g. Pest Management Associations).

More than 70% of the participants have been offered training on work safety. The work safety topics that the participants mentioned were among others, "Health & Safety in Heat treatment", "Safety technician" and "Accidents' prevention".

There were 12.2% of the participants who mentioned that he/she, or someone he/she knows, experienced a health problem that could be attributed to lack in safety measures.

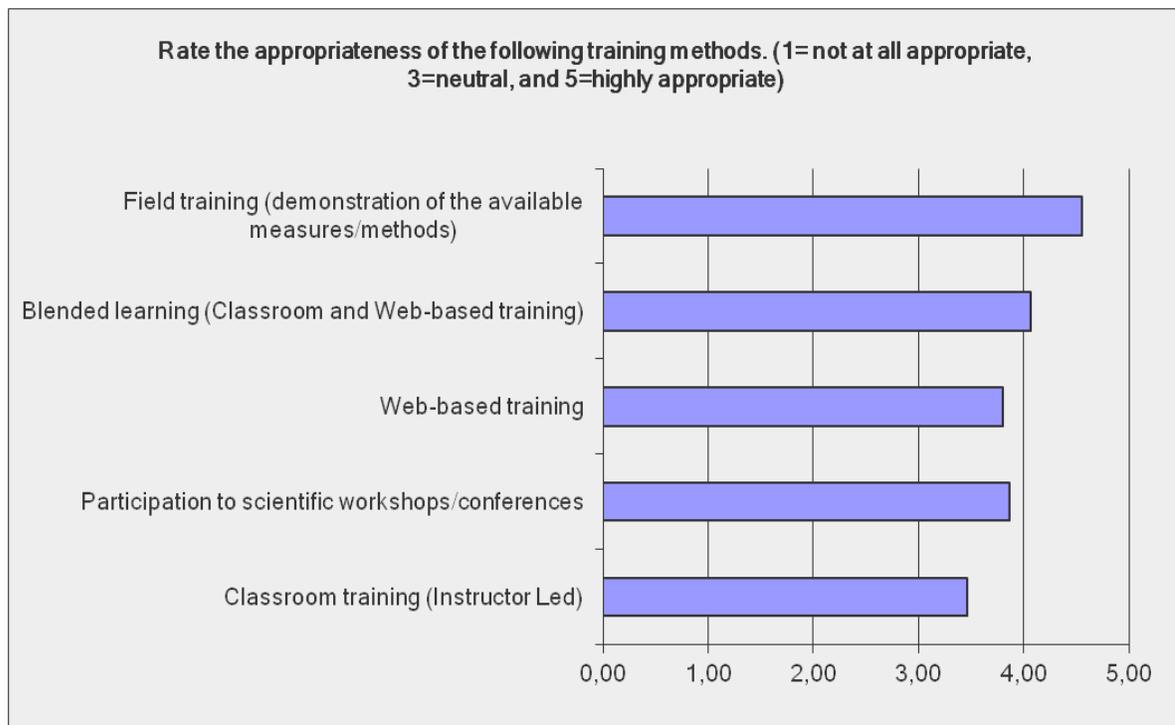
In order to design an effective training, it is significant to identify the priorities on work safety for pest management professionals. Therefore, the consortium, based on the LABITAS results, defined various work safety issues and asked the respondent to rate their agreement to each statement (ranging from "fully agree" to "fully disagree". The respondents' assessment is presented below:

STATEMENT	Fully agree (%)	Partially agree (%)	Neither agree / disagree (%)	Partially disagree (%)	Fully disagree (%)
Safety at work in pest management is of high importance in a pest control company	91.9	5.7	1.6	0.8	0.0
Safety guidelines are required for those working in sites where Pest Control operations are implemented	93.5	3.3	2.4	0.8	0.0
Information / staff training is required for new services / methods	91.9	6.5	1.6	0.0	0.0
Information / staff training is required on issues relative to safety at work	93.5	5.7	0.8	0.0	0.0
Information / staff training is required on the safe use of biocides for public health and the environment	96.7	2.4	0.8	0.0	0.0
Cooperation of Pest Control companies with external consultants / trainers is required (experts on specialized issues)	57.7	22.0	17.9	1.6	0.8
Every Pest Control company should have a responsible for health and safety issues	65.0	15.4	13.0	1.6	4.9

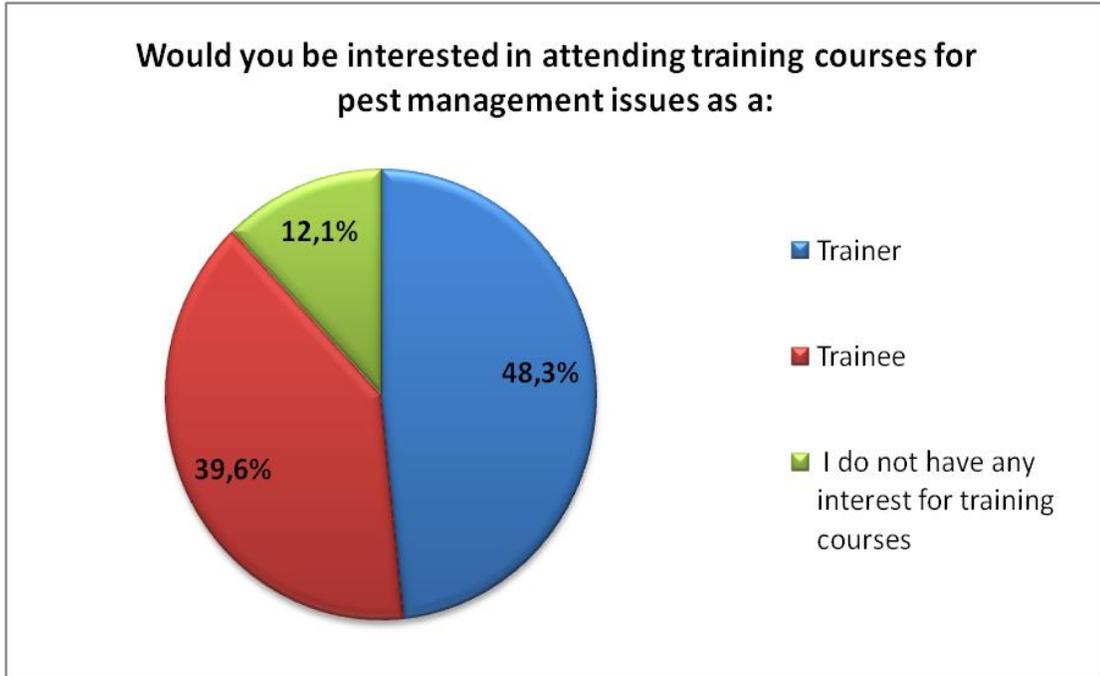
This section provides questions aiming at identifying the training needs and the preferences for the specific tools and formats to be used.

When it comes to the learning formats the highest rating was given to field training (demonstration of the available measures/methods), followed by blended learning (Classroom and Web-based training).

In this question, the respondents highlight the need for practical training in contrast to the traditional classroom training.

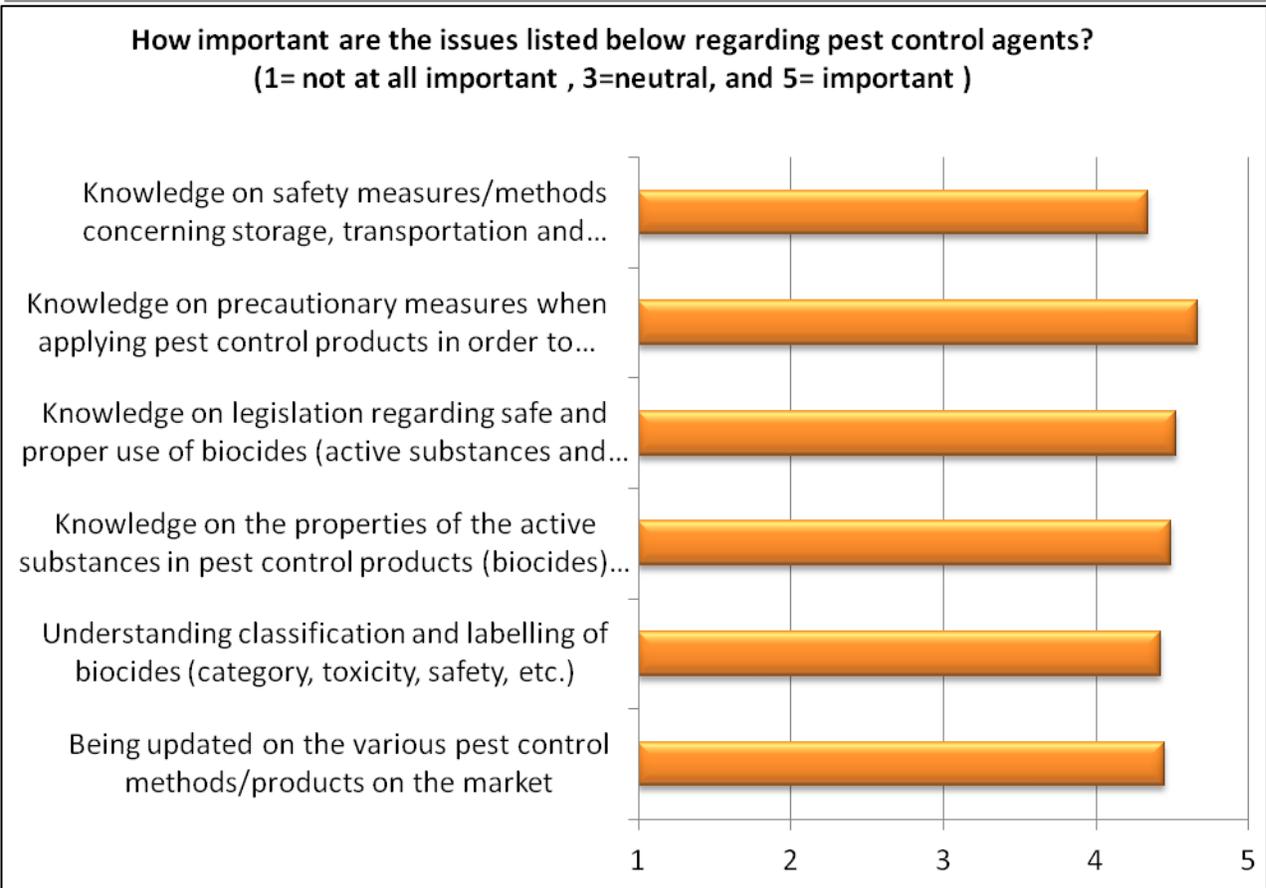
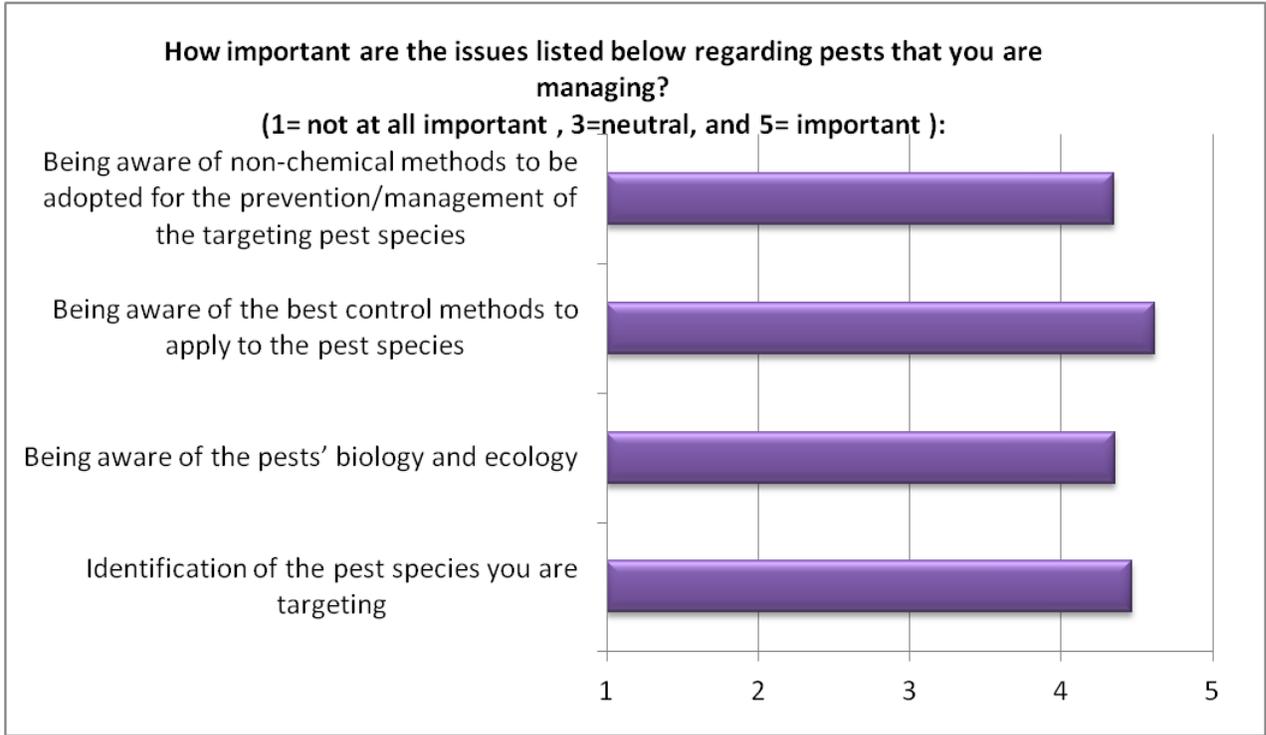


Another important conclusion that was drawn from the survey is the need for training courses intended for trainers (in contrast to those intended for trainees). It is made clear that owners of pest control companies need to develop their educational background in order to be able to train themselves their staff.



Further, the respondents were asked to indicate the importance of issues regarding on one hand the pests they are managing and on the other hand the pest control methods/agents. According to the survey, the most valuable issue for pest management professionals is the knowledge of the best control methods to apply to the pest species.

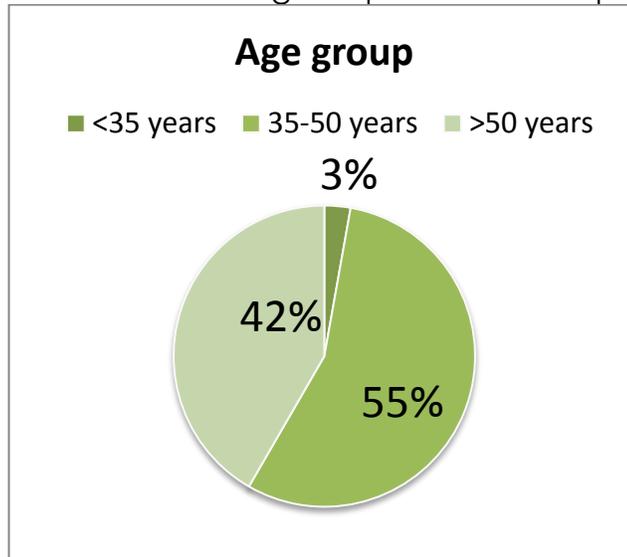
Regarding the pest control methods, the most important issue results the knowledge on precautionary measures when applying pest control products in order to efficiently protect the pest control operator, the non-users and the environment. More than 72% of the respondents answered that this issue is important.



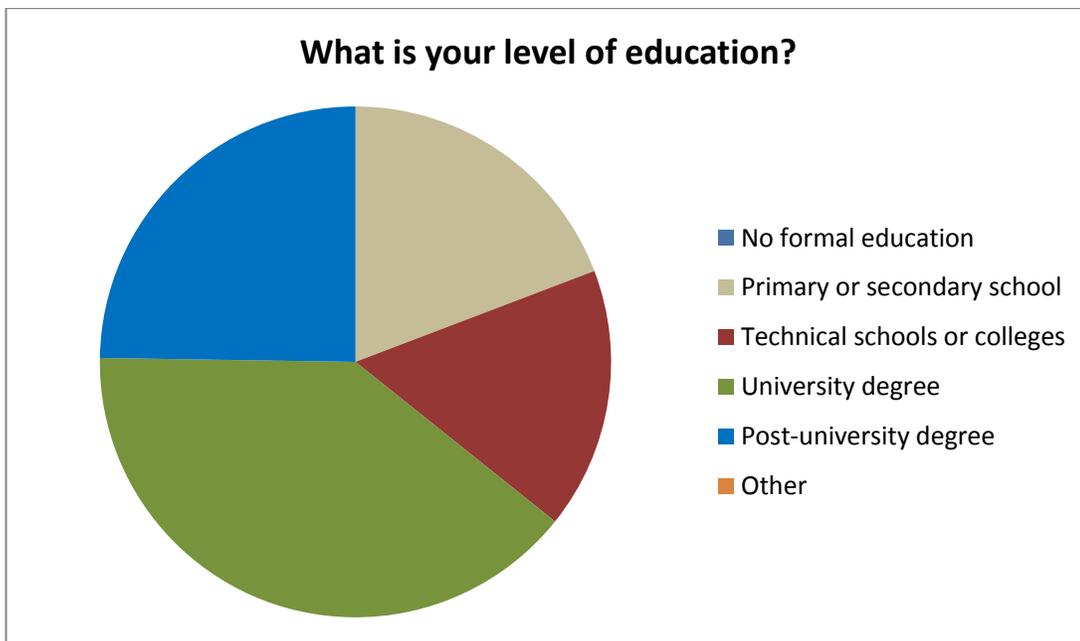
Results of the survey for Italy:

The collected responses for Italy exceeded the initial goal which was 20 completed questionnaires. The final number of respondents was 36.

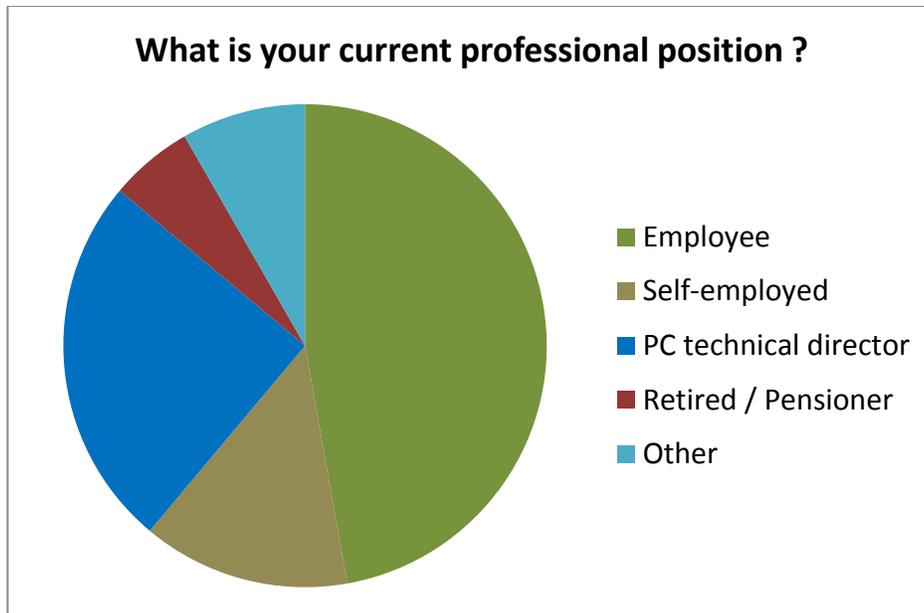
Regarding the respondents age, more than 50% of the respondents was above 35 years old. A small percentage (2.8%) was below 35 years old, while about 41% was above 50 years old, which indicates a good presence of experienced respondents.



When it comes to education, 25% of the respondents have post graduate education and more than 50% of the respondents have a bachelor or technical degree indicating a high educational profile.

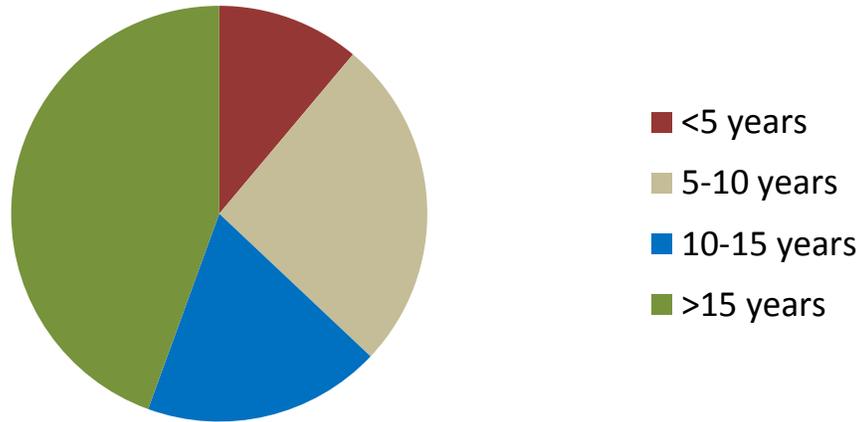


As for the current working environment, 47% were employees while 25% were technical directors in the Pest Control companies and about 14% were self-employed. There is also a small percentage (5.6%) that define their current professional position as retired or other occupation related to pest control (e.g. researcher in the field of pest control, etc).



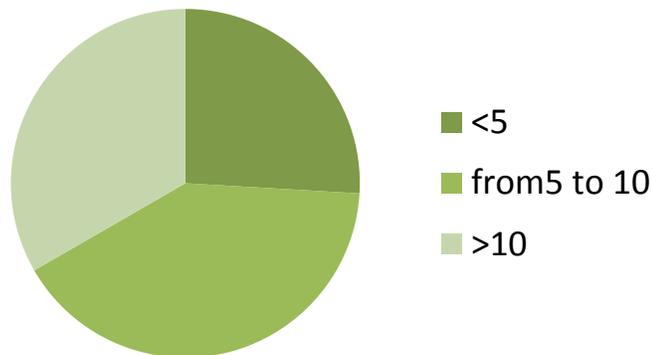
The next answer reflect the previous question about the age of the respondents. More than 44% work for more than 15 years in the pest control sector. Almost 45% work for 5-15 years, and there is only an 11% that works for less than 5 years in the pest control sector.

How many years have you been working in the pest control sector?



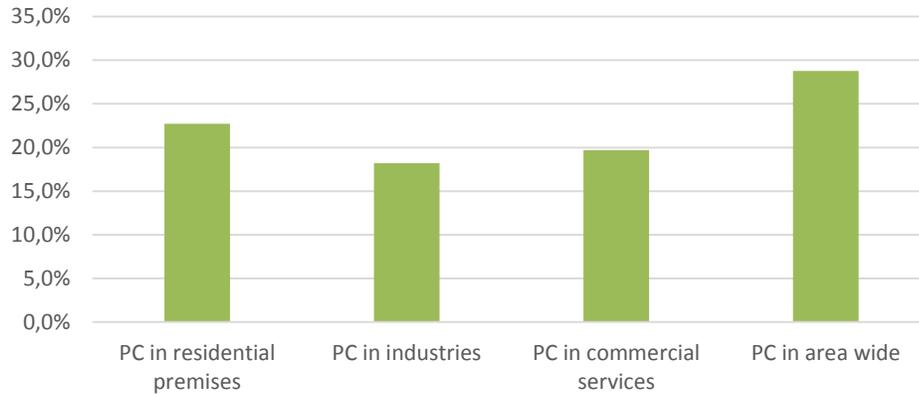
The majority of the employees (~65%) work in companies with less than 10 employees. There is a 33.3% that works for greater companies with more than 10 employees. This confirms that mostly of the PCO companies are in the SME size.

Number of employees in your company:

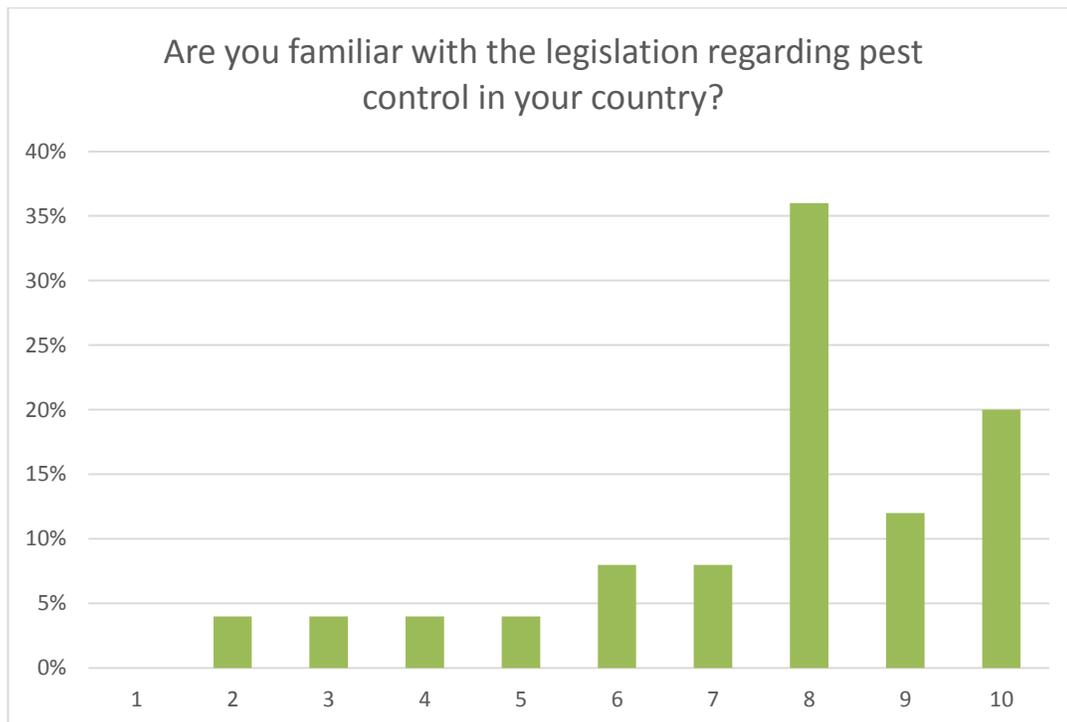


Concerning the main services offered by their company/organization, the results reveal that the distribution of services cover all the areas mentioned in the question (residential premises, industries, etc), which gives us good information to plan the course in such way as to achieve to cover all the necessities of the market.

Main Services:

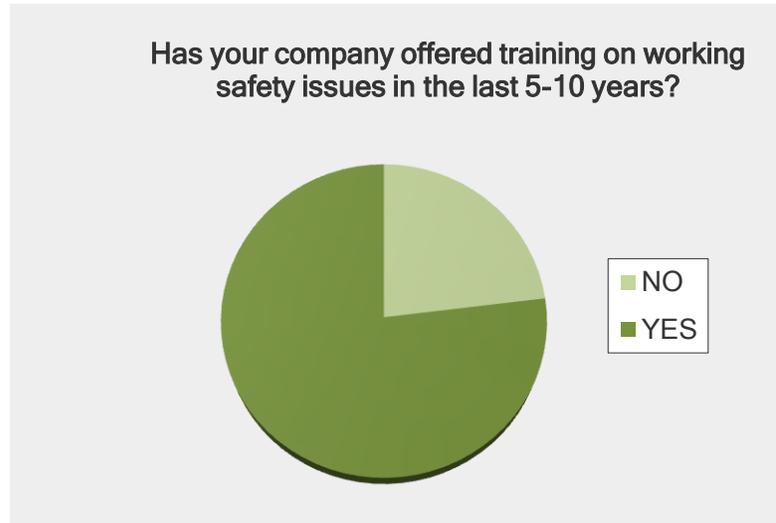


The next question is a self-evaluation of their knowledge on legislation. They had to rate it from 1 to 10. From their answers, we get a general profile that reflects good familiarity with the legislation. The vast majority declare to be very familiar with the legislation.

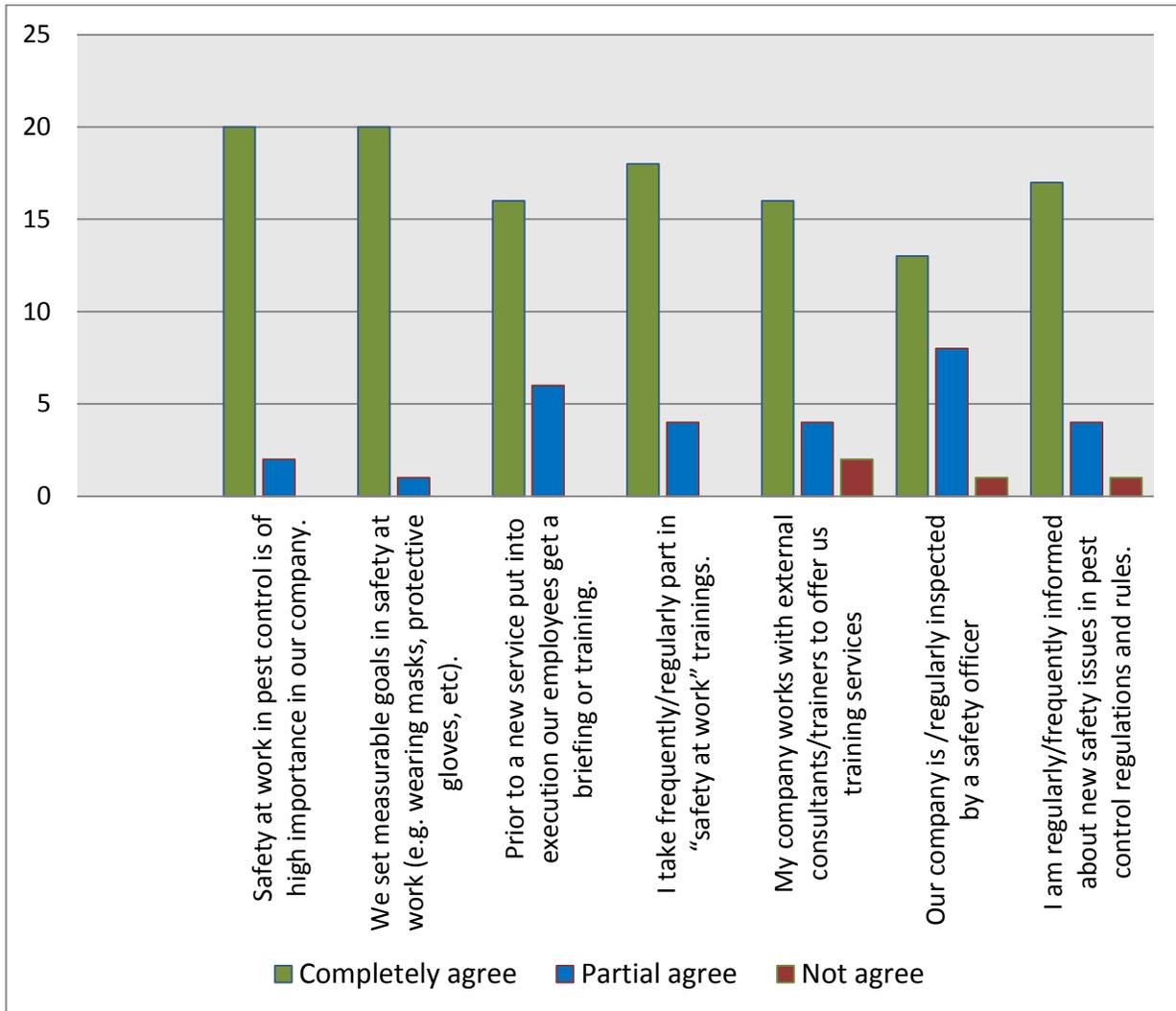


The next question focuses on safety issues training and the majority (77%) answered that they have been offered a course in the last 5-10 years that focuses on safety issues. This probably reflects the current legislation in Italy that obliges companies to have a formal representative on safety issues. Five respondents say that have

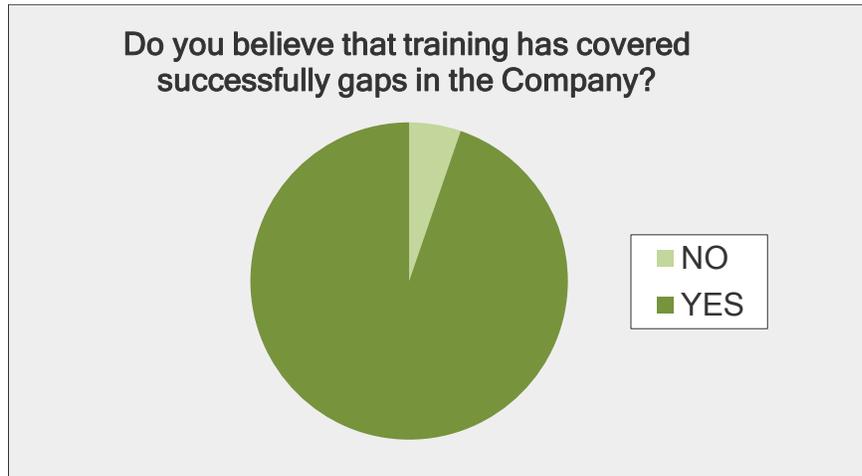
attended courses from ANID (the National Association for Pest Control in Italy) while the rest declare to have participate in internal training courses.



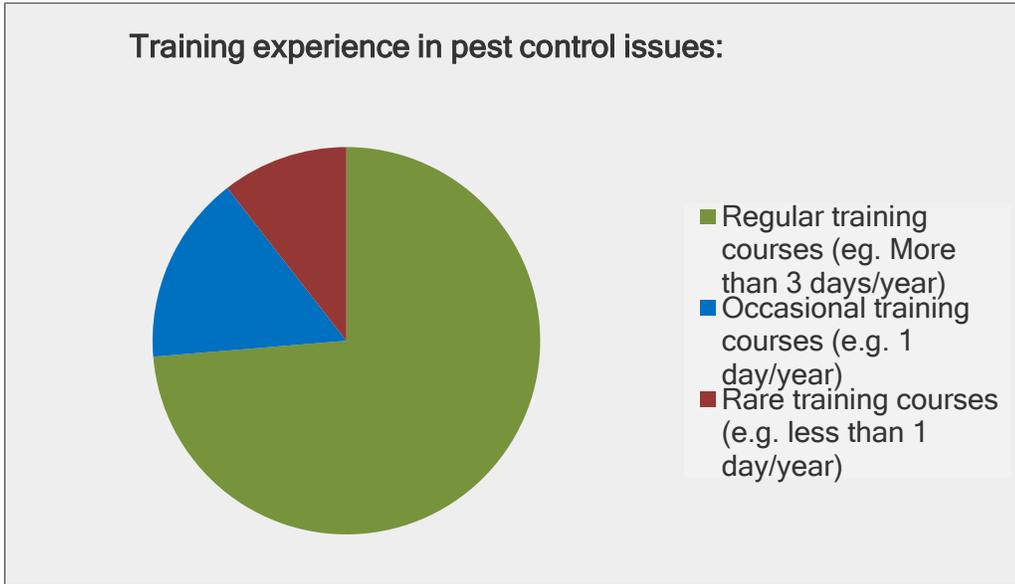
Regarding their awareness on safety issues, most of the respondents declare to have good awareness on safety issues. The use of an external expert as a consultant on safety measures is a common practice to follow the legislation requirements. A high percentage of the respondents declares to be involved in some type of inspections regularly. They also declare to be well aware of the necessity to adopt personal protection measures.



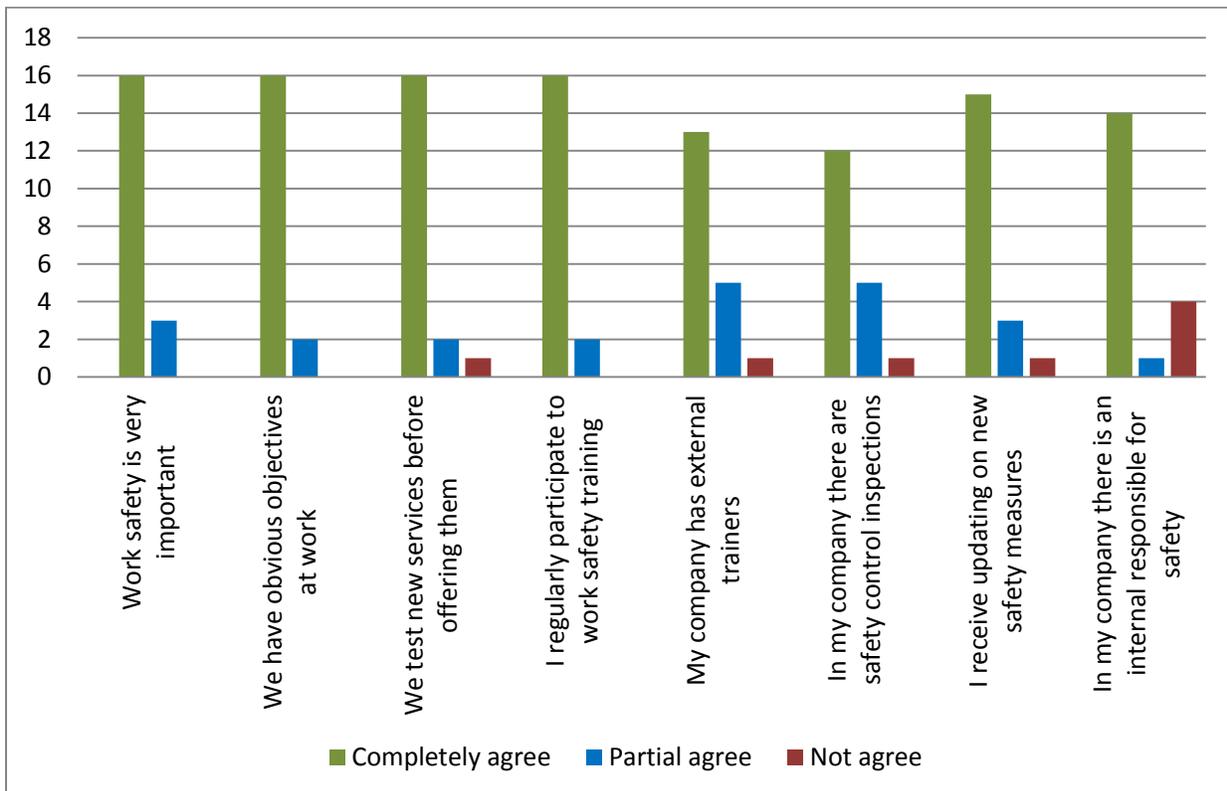
The next questions were mainly focused on PCO' technical directors. Many of the respondents (86%) declared to have offered some kind of safety training to the company employees. This was mostly (84%) an initiative of the pest control company. They also say that the offered training has efficiently covered their needs. More than 89% consider that the training courses have been useful for their professional life.



Most of the respondents (73%) declare to be regularly involved in professional training courses.



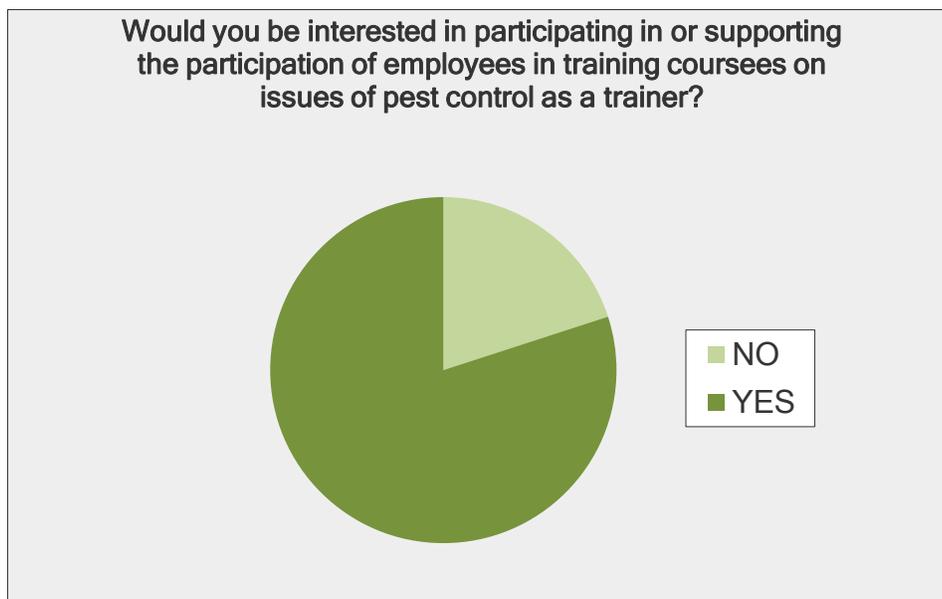
The participants were asked to rate their agreement with some statements. According to the results, they agree with the necessity to be well aware on safety issues in the working environment, and on the necessity to be continuously updated on safety and prevention issues.



Moreover, the 60% of the respondents declare to be available to act as a trainer in pest management courses.



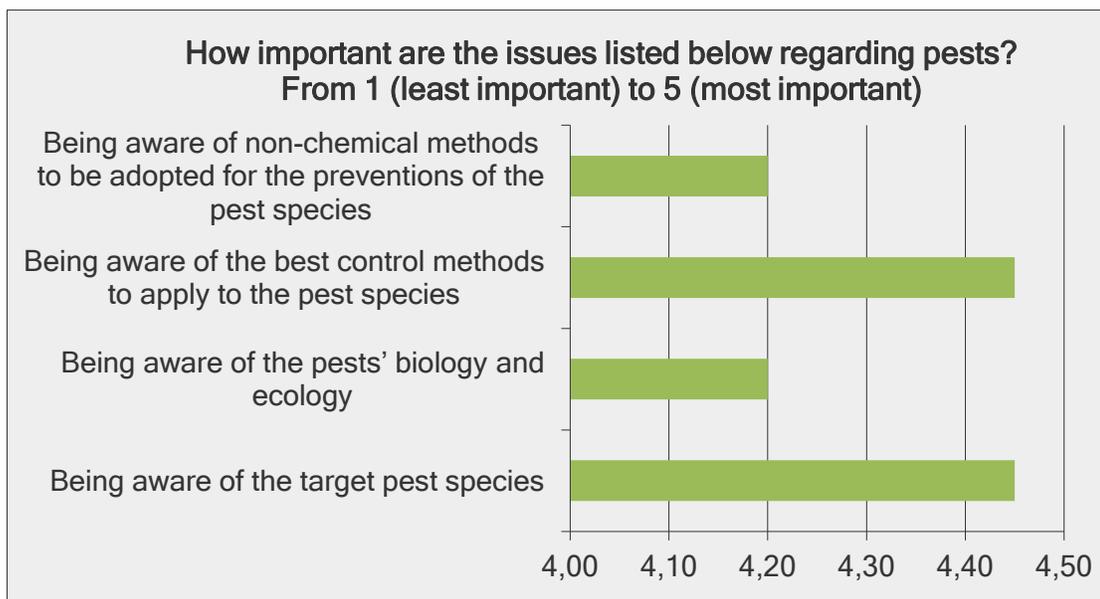
The 80% of the respondents declare to be interested to participate directly or indirectly in such courses (through their employees in the pest management courses).



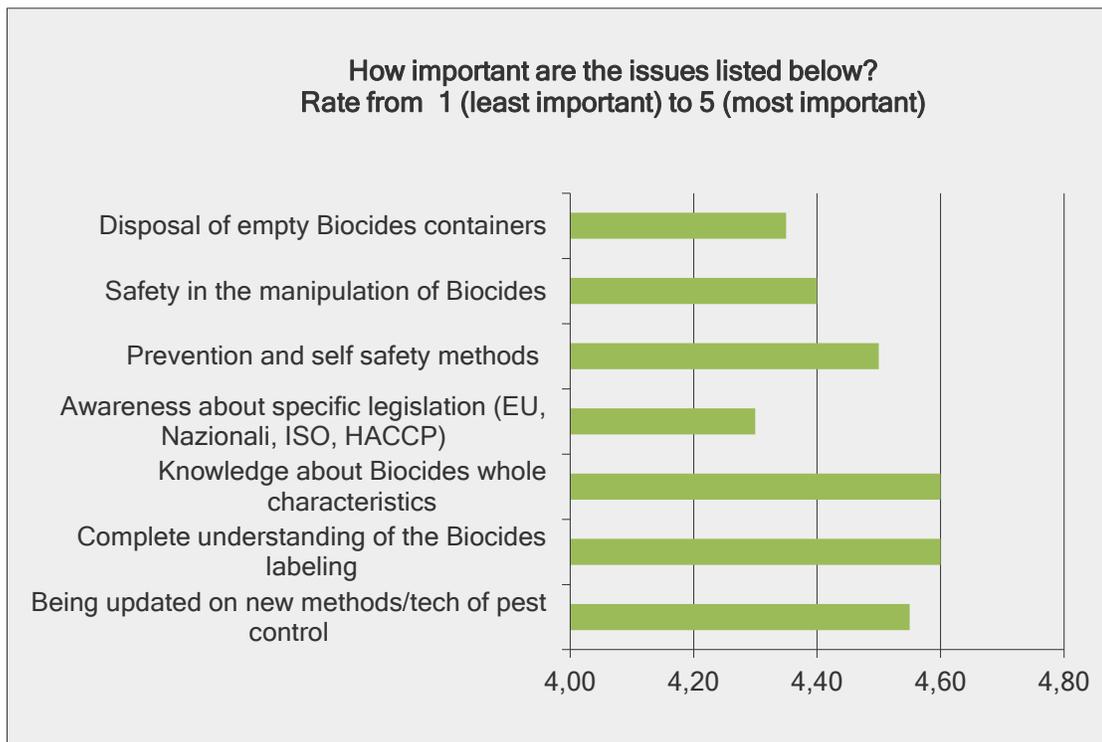
When asked to rank their opinion on the most useful training method, they define as their first choice, the workshops training courses. The second choice was classroom training while other approaches/methodologies were less considered.



Concerning the content of the possible training courses, they declare the most important is to be aware of the best control methods to be applied to the target pest species. Being aware of the specific biology of the target species was also rated high in their choices. A good rank was also achieved by the necessity to be aware of prevention and non-chemical methods.



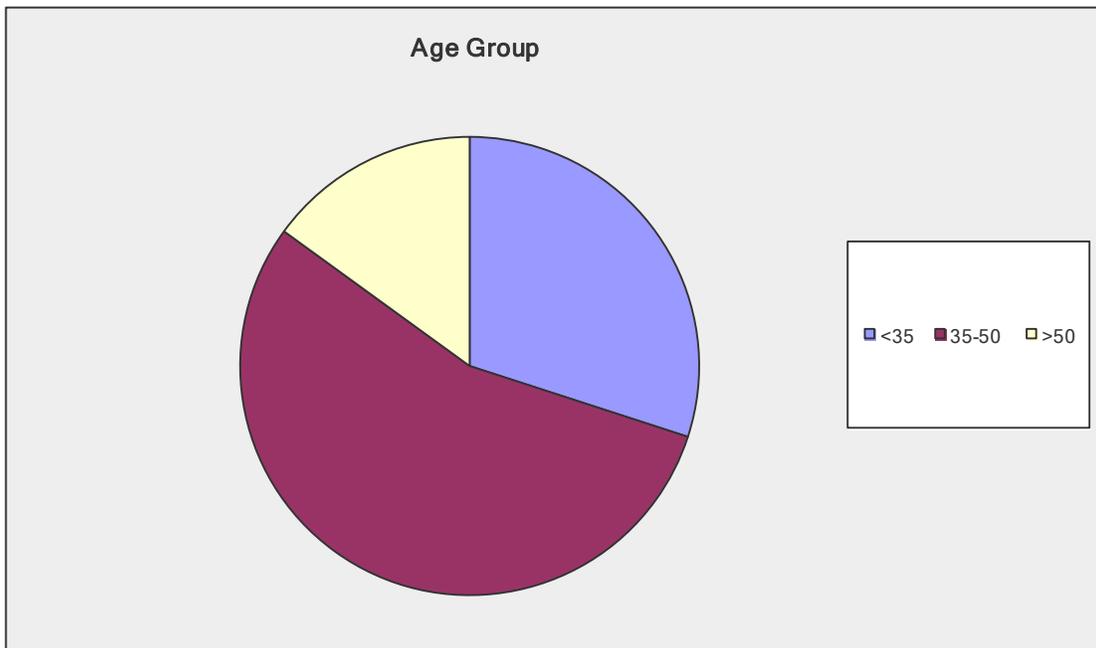
Their opinion about different aspects to be included in the future training modules is asked in the following question. The capacity to understand biocides labeling was ranked first, and the knowledge about biocides' characteristics was also considered a main requirement. Also, considerable attention was made for new methods of prevention and pest management.



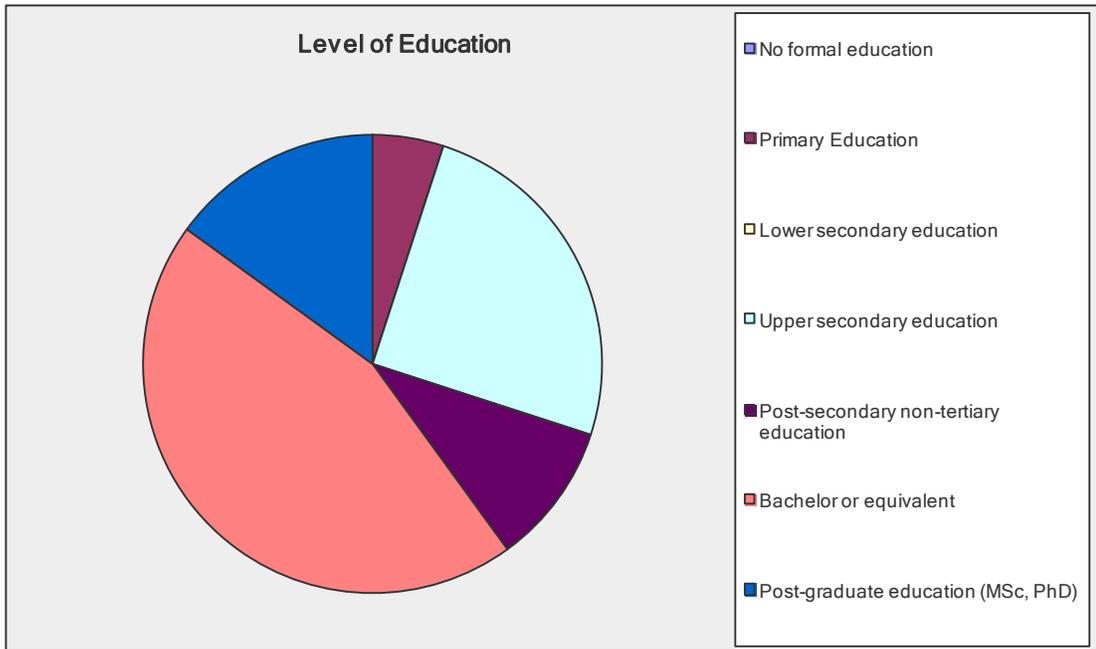
Results of the survey for Cyprus:

Demographic Information

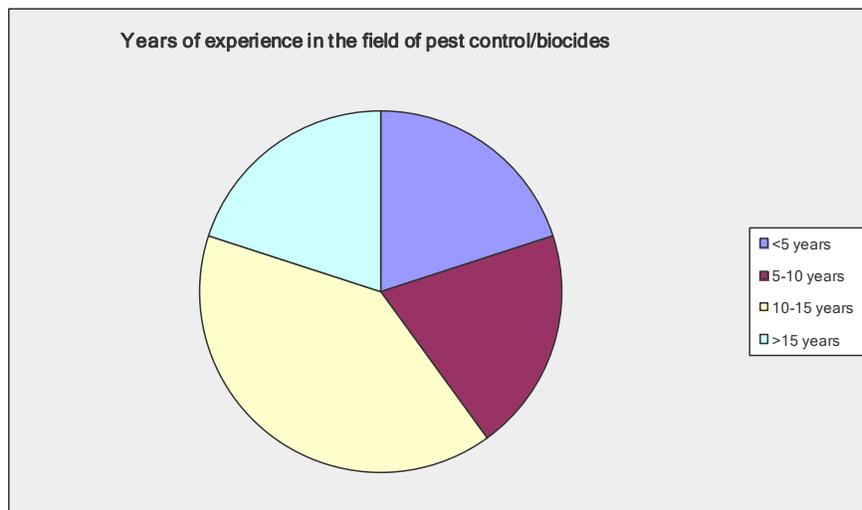
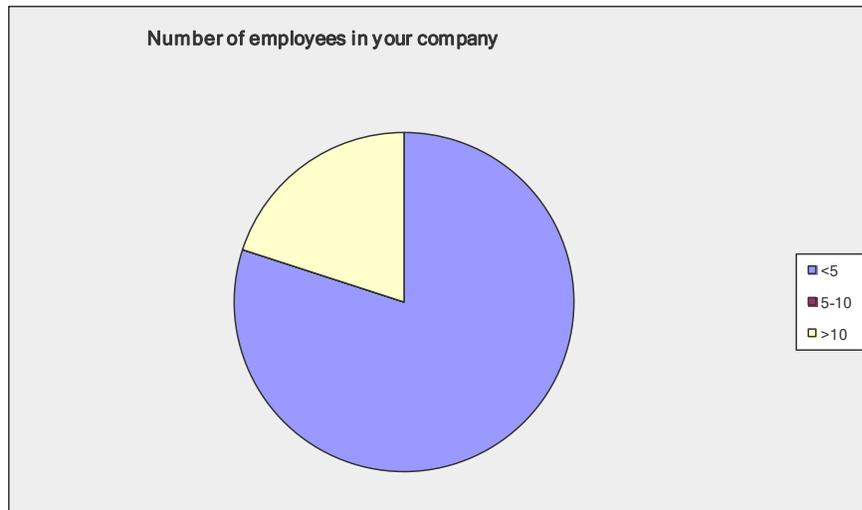
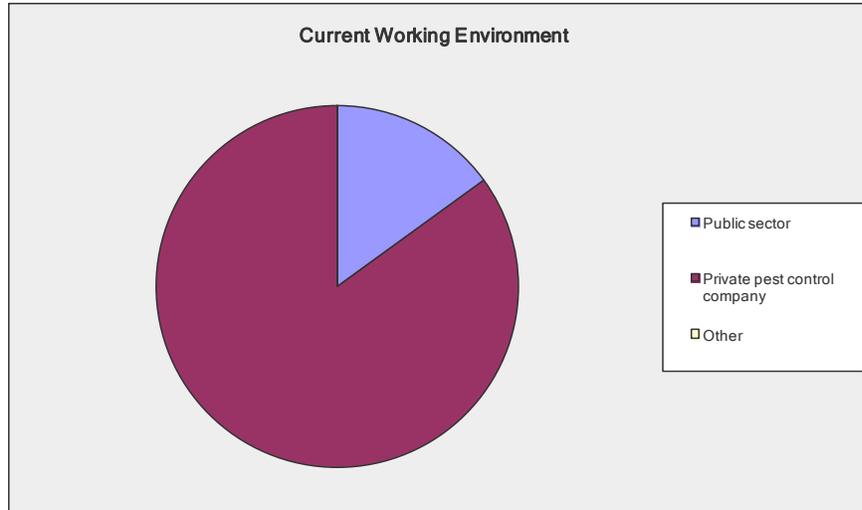
The anonymous Survey was completed by twenty professionals in the field of Pest Control in Cyprus, most of them members of the local pest controllers association and it is representative of the field. The majority of the respondents 55% were between the age of 35-50 years old, the 30% younger than 35 years old and the 15% older than 50 years old.



Out of the sample 45% had University Education whereas only the 5% had Basic Education. Most of the rest, 25%, had upper secondary education, 10% had Post-secondary non-tertiary education and 15% had Post-graduate education. It is important to note that most of the participants have at least a secondary level of education and some 60% a bachelor's degree or higher which validates the statement that most of the professionals have a high educational background.

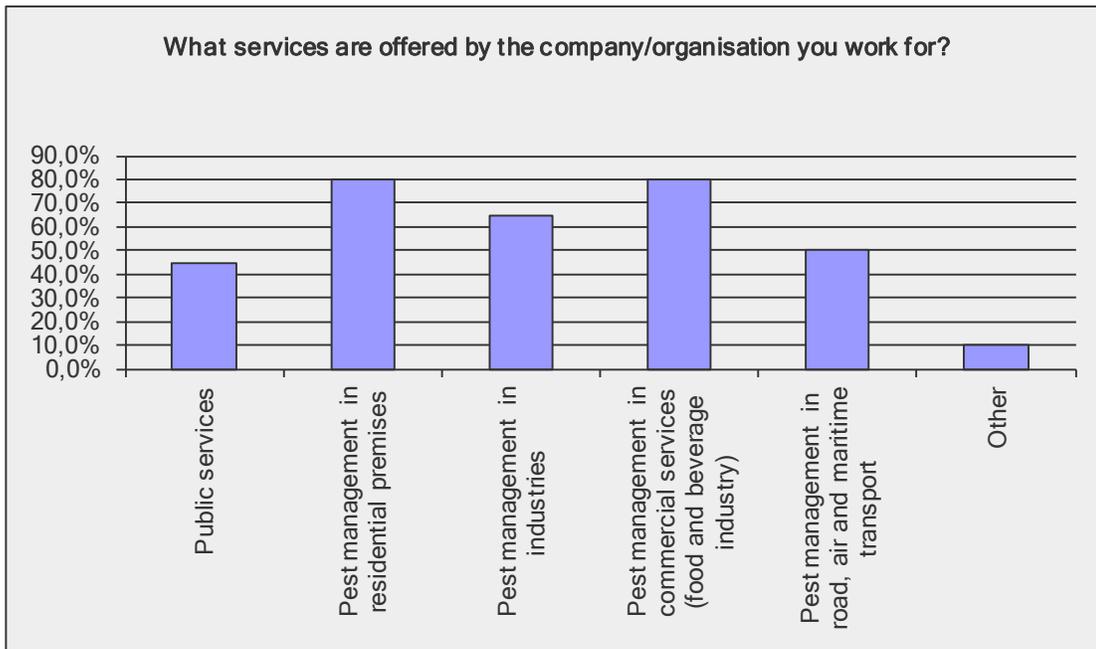


The 85% works in a private pest control company whereas the 15% works in the public domain. The 85% corresponds to the 17 Pest control companies that are registered in Cyprus. The 15% corresponds to public services (Department of Agriculture, State's Health Services). The 80% of the respondents noted that less than 5 professionals are employed at their company/service and only the 20% noted that more than 10 professionals are employed at their company/service. Most of the respondents, 40%, work between 10-15 years in the field of pest control, whereas the rest of the responders are divided equally at a percentage of 20% respectively for each category between less than 5 years, 5-10 years and more than 15 years.



Services offered by the Pest Control Companies/Organisations

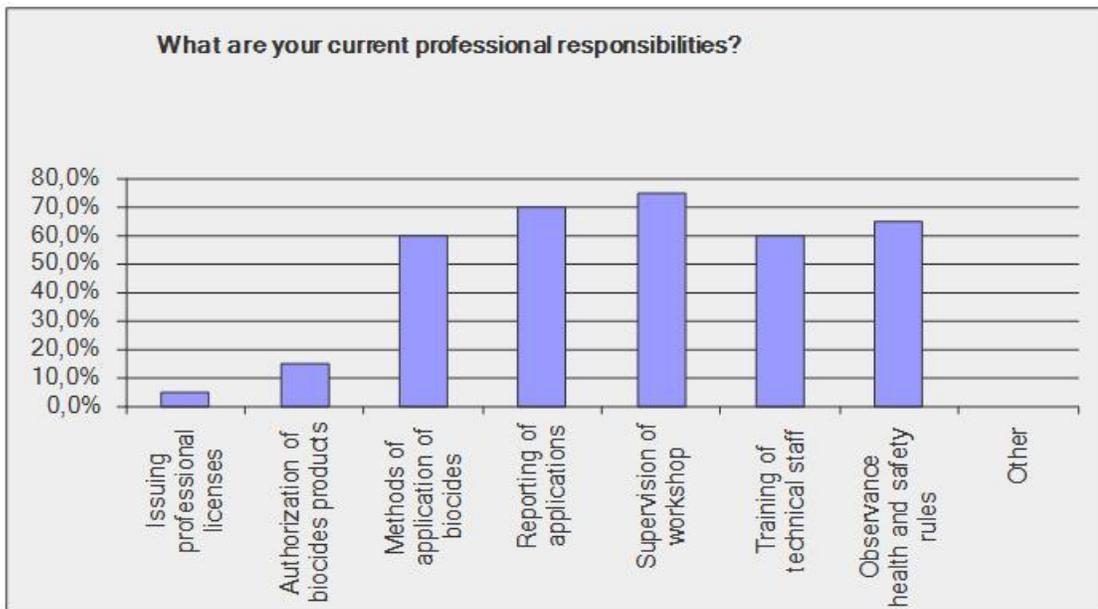
In relevance to the services that are offered by the company/organisation that the interviewees work for, the majority, 80%, noted that “Pest Management in residential premises” and “Pest Management in commercial services (food and beverage industry)” respectively were offered by their company. “Pest Management in industries” was noted as a service that was offered on a slightly less percentage, 65%, by the companies, then “Pest Management in road, air and maritime transport” followed with a percentage of 50% and “Public Services” with a percentage of 45%. We can assume that the latter percentage is due also to the smaller percentage of respondents that works for the public services. 10% noted that other services were offered by their company but have not specified what these were. This was a multiple-answer question.



Main Professional Responsibilities of the Job Position

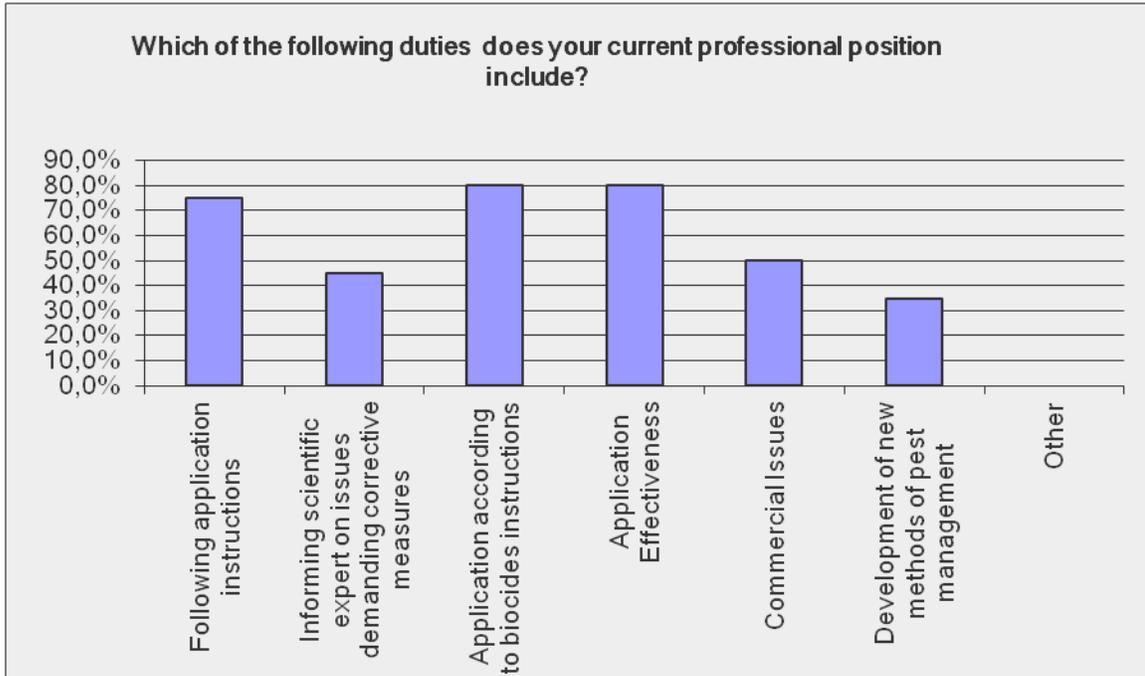
As a response to the question of what were the current professional responsibilities of their job position, 75% noted “Supervision of workshop”, 70% noted “Reporting application”, 65% noted “Observance health and safety rules”, 60% noted “Methods of application of biocides” and “Training of technical staff”, 15% noted

“Authorization of biocides products” and only 5% noted “Issuing professional licenses” –we can assume that the latter two answers were provided by the respondents working in the public sector, as this is a public sector’s responsibility. This was also a multiple-answer question.



Professional Position Duties

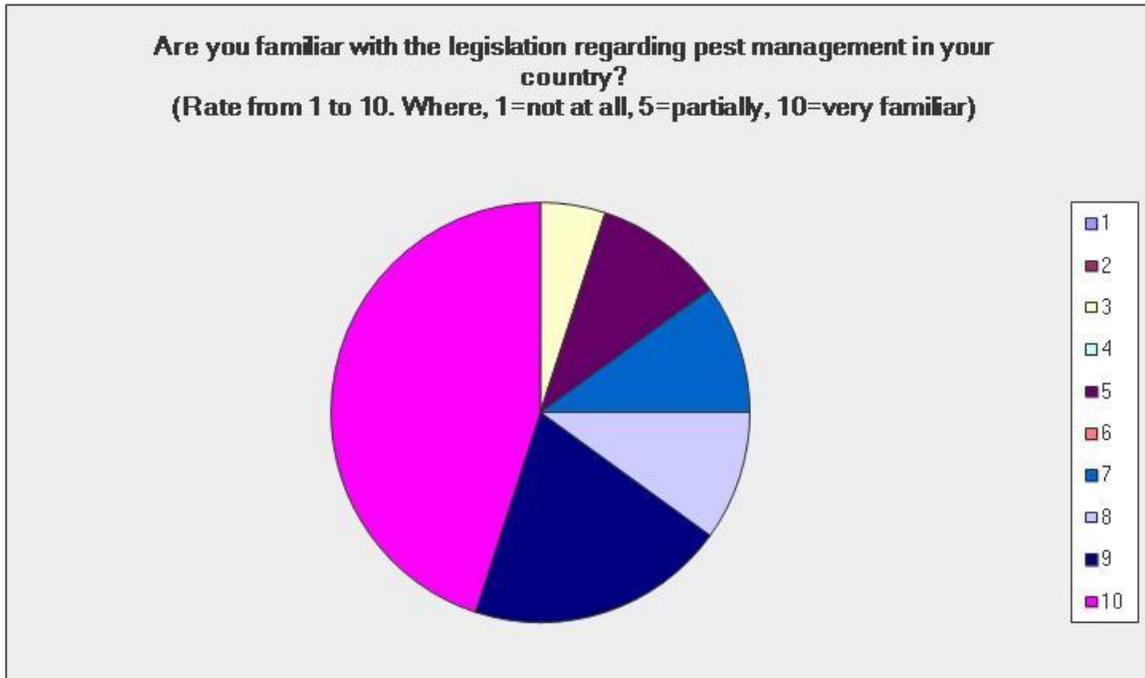
The main duties of the respondents’ professional position was the “Application based on the instructions provided by the producer of the biocide” and the “Efficiency of implementation” on a percentage of 80% respectively. The “Compliance with instructions of application” was noted at a rate of 75%, “Trading, marketing and sales issues” at a rate of 50%, “Updating the scientific officer for issues/observation for taking corrective measures” at a rate of 45% and the “Development of new methods of pest management” at a rate of 35%. This was also a multiple-answer question.



TRAINING EXPERIENCE

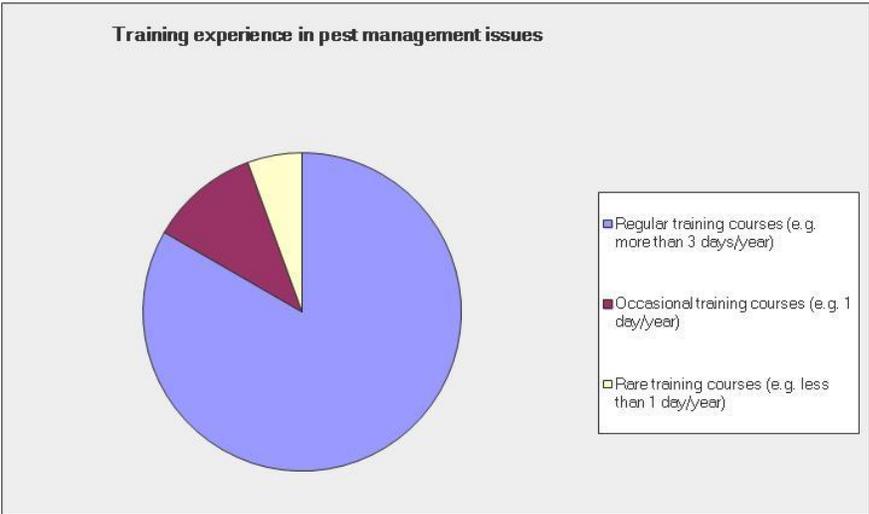
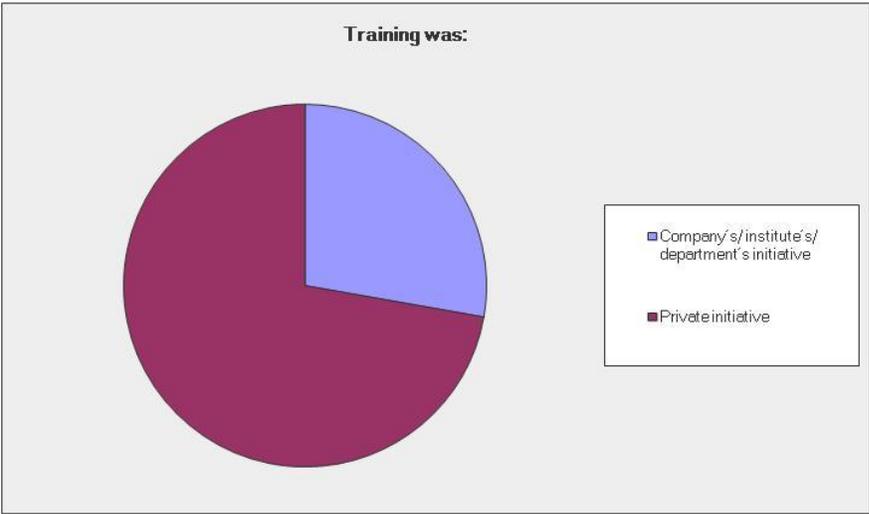
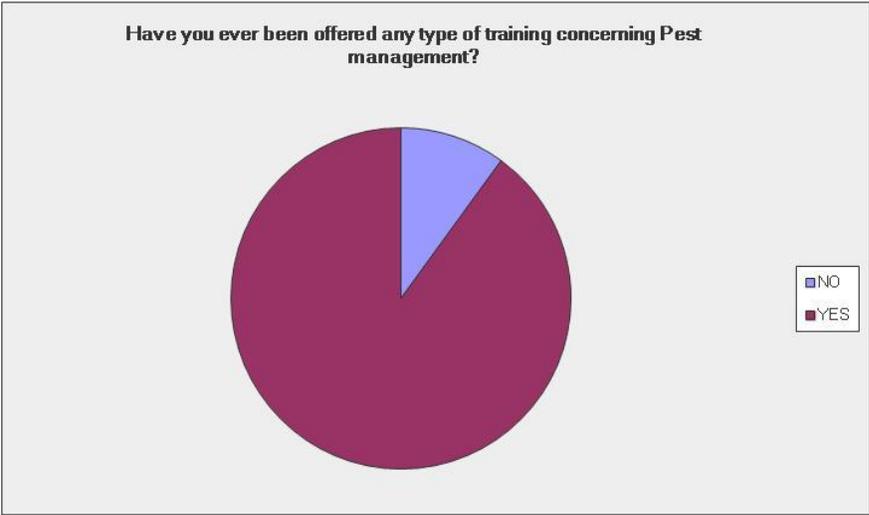
Familiarity with the Legislation regarding Pest management in Cyprus

Regarding the familiarity of the respondents with the legislation regarding pest management in Cyprus, nearly half of the respondents seems that are very familiar with the specific legislation. On a scale from 1-10, where 1= not at all, 5=partially and 10=very familiar, 45% noted 10, 20% noted 9, 10% noted 8, 7, and 5, respectively, and only 5% noted 3.



Training Experience concerning Pest Management

90% of the respondents noted that they have been offered a type of training concerning pest management. 10% percent noted that they haven't. This validates the fact that the majority is somehow trained and also their need for training. Of those who have been offered the training, that is the 90%, for the 72.2% the training was based on "personal initiative" whereas the 27.8% was the "Company's/ institute's/ department's initiative". In relevance to the evaluation of their training, on a scale from 1-10, where 1= not at all, 5=partially and 10=very adequate, in relevance to the sufficiency of the training for their professional activity, 40% noted 10 as in very adequate, 26.7% noted 8, 20% noted 9, and 6.7% noted 7 and 5 respectively. Three of the respondents that have been offered a type of training had skipped the question. The 83.3% noted that the training they have received referred to "Regular training courses (e.g. more than 3 days/year)", 11.1% noted that they have received "Occasional training courses (e.g. 1 day/year)" and 5.6% noted that they have received "Rare training courses (e.g. less than 1 day/year)". This shows that the majority had a regular training.

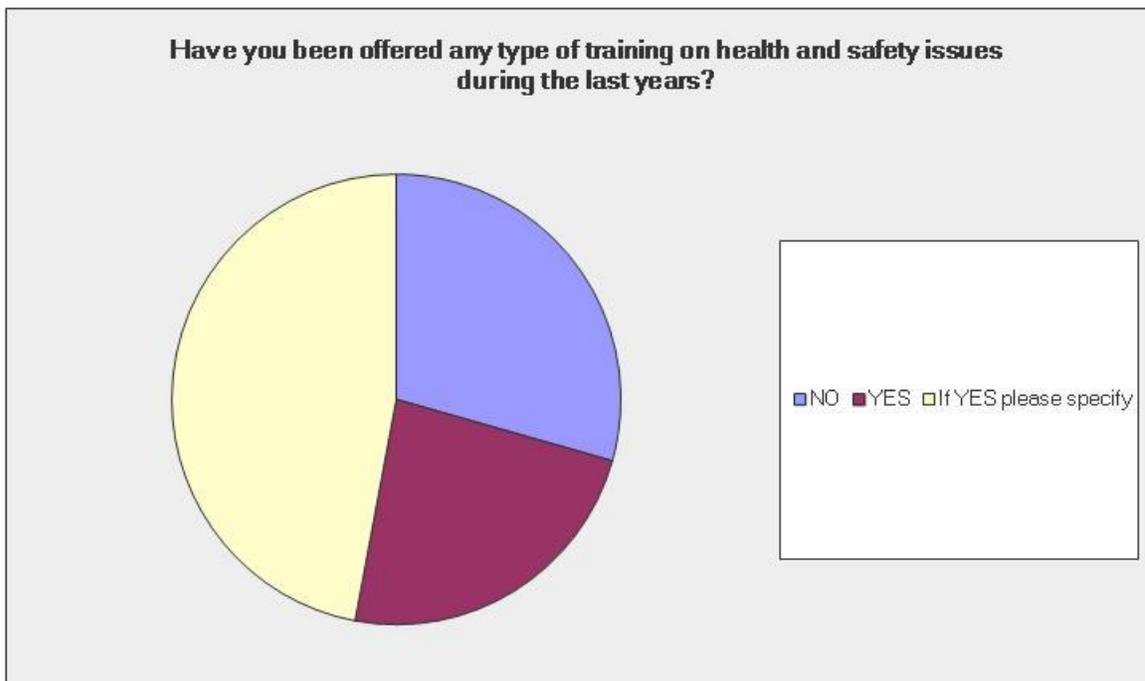


CURRENT WORKING ENVIRONMENT

For the third section of the questionnaire, 85% noted that they work for a Pest Control Company and 15% noted that they do not. This 15% corresponds to the professionals that work at the public sector.

Health and Safety

Out of the 85% that answered that they work for a pest control company, 70.6% have received training on health and safety issues whereas 29.4% answered that they haven't received any such training. The fact that the majority has received such training reveals the importance of this aspect for the training of the specific profession. From those who answered the question, 93.8% percent answered to the question if they had experienced any health problems that could be attributed to lack in safety measures at their work with "No" and 6.3% answered with "Yes". Only one skipped the question. If their statements are true, this is a very positive fact from which we can also assume that the health and safety training has contributed to following health and safety measures.



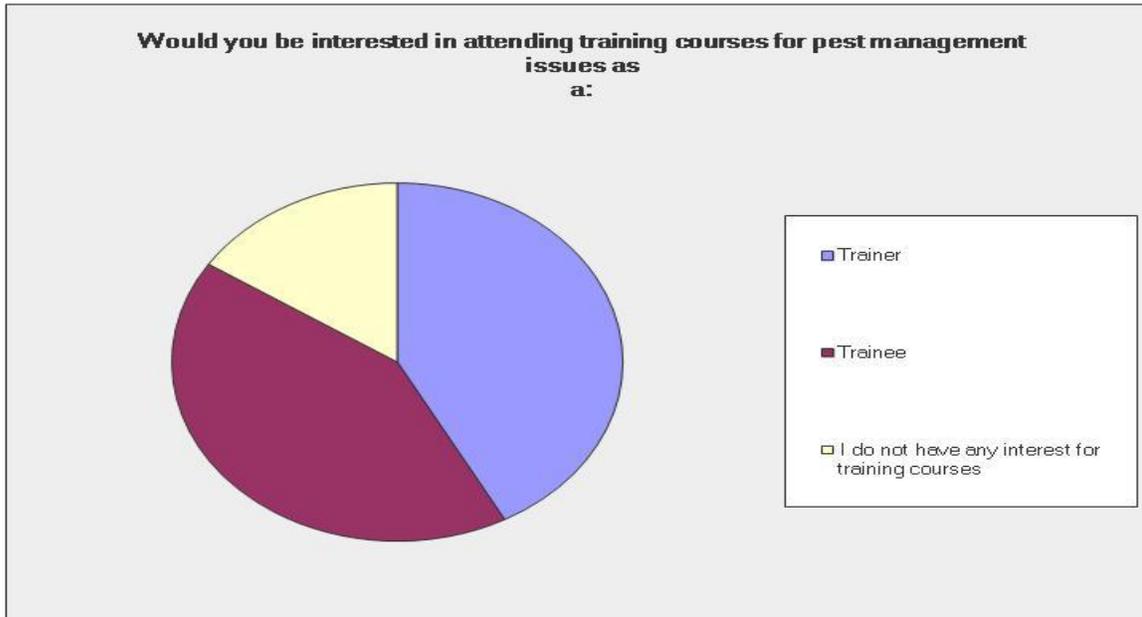


The respondents that work for private pest control companies were asked to evaluate on a Likert scale with levels of agreement statements on health and safety issues in relevance to their work. All of the respondents noted that they fully agree with the following statements: “Safety at work in pest management is of high importance in a pest control company”; “Safety guidelines are required for those working in sites where Pest Control operations are implemented”; “Information / staff training is required on issues relative to safety at work; “Information / staff training is required for new services / methods”; “Information / staff training is required on the safe use of biocides for public health and the environment” . Out of the sample, 64.7% fully agree with the statement “Cooperation of Pest Control companies with external consultants / trainers is required (experts on specialized issues)”, 17.6% partially agree, 11.7% neither agree nor disagree, and 5.9% partially disagree. Along the same lines 70.6% fully agree with the statement “Every Pest Control company should have a responsible (person) for health and safety issues”, 5.9% partially agree, 17.6 neither agree nor disagree and 5.9 partially disagree. The numbers show that health and safety issues in relevance to their profession are very important to the majority of the respondents showing that they realize the significance of this aspect for their profession. The lowest percentage of agreement

referred to the statement “Cooperation of Pest Control companies with external consultants / trainers is required (experts on specialized issues)”.

TRAINING EXPECTATIONS

All of the pest control professionals answered the question referring to whether they would be interested in attending training courses for pest management either as a trainer or as a trainee. 40% noted that they would be interested in attending training courses as a trainer and 40% as a trainee. 20% noted that there aren't interested in attending any courses.



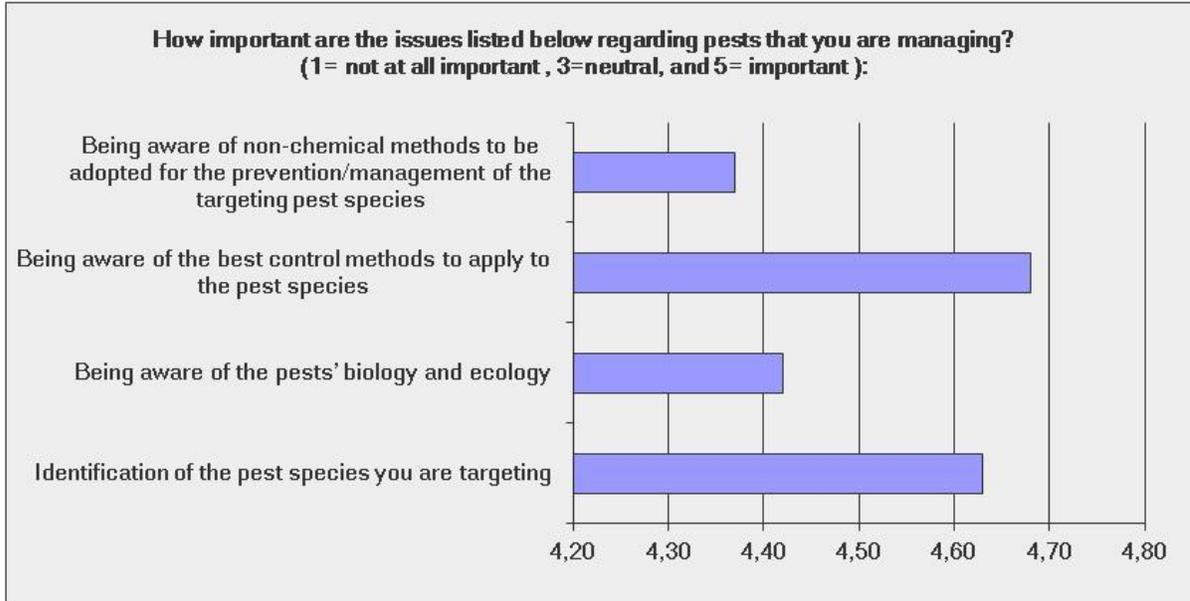
Perceptions on appropriateness of the specific Training Methods

On a scale from 1 to 5, where 1= inappropriate, 3= neutral and 5= Excellent, all of the pest control professionals were asked to rate the appropriateness of each training method. The most appropriate method was noted to be “Field training (demonstration of the available measures/methods)” with 94.5% rating it with 5 and 4. The next most appropriate method seems to be “Blended learning (Classroom and Web-based training)” with a percentage of 79 % rating it with 4 and 5 and then “Participation to scientific workshops/conferences” with a total percentage of 61.1% rating it with 4 and 5. Next, as the least appropriate method seem to be

“Classroom training (Instructor Led)” and “Web-based training” methods with a both a percentage of 57.9%, respectively, rating it with 4 and 5 in total. Only one respondent skipped the question.

Perceptions on the Importance of Issues regarding Pest Agents that the professionals manage

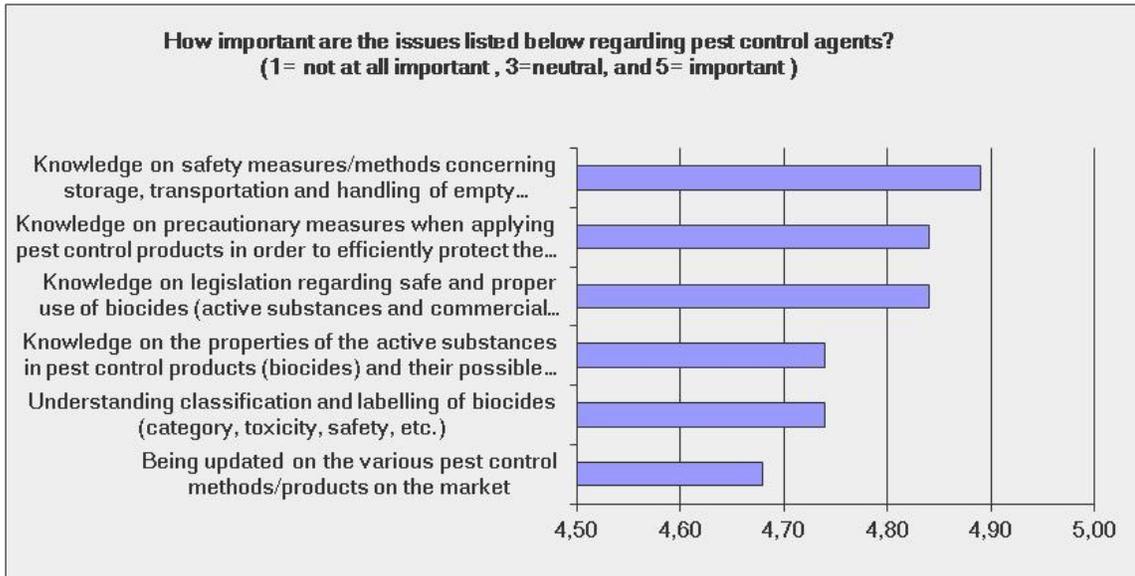
On a scale from 1 to 5 where 1=Not at all important, 3=Important and 5= Necessary, in relevance to the pests that they are managing, most of the respondents consider these issues very important to necessary. As very important to necessary were noted “Identification of the pest species you are targeting” and “Being aware of the best control methods to apply to the pest species” both at a percentage of 94.7%, respectively. “Being aware of the pests’ biology and ecology” appeared as the next most important issue at a percentage of 84.3% and then “Being aware of non-chemical methods to be adopted for the prevention/management of the targeting pest species” at a percentage of 78.9%. Only one respondent skipped the question. The above results show the great importance of all of the issues regarding pest management and this is a very important factor which will facilitate the promotion of the trainings. Identification of Pest species and being aware of the best control methods to apply to the pest species” were noted to be the most necessary issues in pest management which is part of the basis of pest management.



Perceptions on the Importance of Issues regarding the methods and the means of Controlling Pest Control Agents

On a scale from 1 to 5 where 1=not at all important, 3=Important and 5=Necessary, all of the methods and means of controlling pest control agents were rated at a high rate as Necessary or Very Important showing the awareness of the great importance of these issues for controlling pests. Most of these were rated at a percentage of 100% as very important and necessary. "Knowledge on safety measures/methods concerning storage, transportation and handling of empty packaging of biocides", "Knowledge on precautionary measures when applying pest control products in order to efficiently protect the pest control operator, the non-users and the environment" and "Knowledge on legislation regarding safe and proper use of biocides (active substances and commercial products) and operation of pest control companies" were rated at a slight higher percentage referring to "necessary". Only "Being updated on the various pest control methods/products on the market" was rated at the very small percentage of 5.3% as "slightly important" and "Knowledge on the properties of the active substances in pest control products (biocides) and their possible effects on human health and

the environment” as “neutral” on a percentage of 5.3%. The rest of the respondents have rated them though, as said above, as of great importance and necessity. Only one respondent skipped the question also.



The above results concerning pest management show the awareness of the professionals regarding issues of pest management revealing also their training expectations. This is a very positive fact in planning the promotion of the training material/trainings. As noted above, most of the respondents are interested in attending a training course, enhancing in this way the perception that they acknowledge the importance of training for their profession.

Conclusions

The aim of WP3 was to identify in detail the transferable content and methodology of LABITAS and analyze its blending and adaptation needs. Afterwards, based on the results of the created questionnaires, the next target was to specify the current needs of the target groups in regard to the tools and methods to be transferred. In particular, the relevant curricula and VET-Vocational Educational Training) practices.

The transfer of existing knowledge (LABITAS) was the initial concern of the consortium when designing the questionnaires. A number of questions concerning work safety were transferred from the respective questionnaire of LABITAS provided by the German partner. Moreover, a consistent number of questions were adapted accordingly in order to focus on the particular needs of pest management professionals. In particular, section three of the questionnaire was designed with a strong linkage to LABITAS in terms of issues concerning safety at work; Furthermore, many questions were adopted accordingly in order to apply to the working environment of the pest management professionals.

The outcomes of the desktop research revealed that there are some VET systems in the target countries (GR, CY, IT) offering training for pest management professionals. Still, in each country the consortium was faced with a different status quo. In Italy, the existent offered seminars are provided by an organized professional category Association dealing in a public initiative frame, whereas in Cyprus and Greece the offered seminars are a completely private initiative. Moreover, the bilateral meetings revealed that the legislative framework in Italy is adequately formed whereas in Greece and Cyprus the consortium found themselves in the middle of a legislative reformation for pest management and pest management professionals.

The questionnaires were distributed to a large number of recipients, including pest management professionals, stakeholders and researchers. In Greece and Cyprus where the relevant legislation is currently under reform, the point of view of the various stakeholders is considered crucial by the consortium in order to define the particular needs of the pest management professionals. Still, the pest management professionals who received the questionnaire outnumbered other stakeholders in order to offer a better representation of the business sector. In Greece and Cyprus we asked from entomologists (officers in the relevant ministries of Agriculture to participate in the survey, due to the legislative reformation currently active in these two countries. Moreover, in Greece, an external collaborator, Prof. Christos Athanasiou, was asked to participate in the survey since he is the main tutor in the respective existent seminars offered in Greece and Cyprus. Prof. Athanasiou, has also signed a contract of voluntary services with BPI, in order for the consortium to take full advantage of his experience and scientific knowledge.

The results of the questionnaires will be used in order to develop the training course (WP4). The main conclusions of the **Greek questionnaires** include the following:

- A large percentage of the participants were offered in the past a training course on pest management, and in more than 67% the training was a private initiative. The pest professionals in Greece according to the relevant legislation framework are professionals with a bachelor's degree on Agriculture, Biology, Chemistry, etc). Though, the results of the questionnaires reveal that they seek for further training and this need is not imposed by their companies but it is a private initiative which amplifies their need for expanding their knowledge and skills.
- It is quite significant that more than 89% of the participants attend training courses regularly or occasionally, which means that they recognize the need for continuous education on the field.
- Field training emerges as the most appropriate training method, which is a point that should be taken into account for the design of the curriculum (WP4). Therefore, a particular module for case studies could be incorporated in the curriculum.
- A large percentage of the participants (48.3%) replied that they would be interested in attending training courses as a trainer. This is a fact that could be also taken into account in the design of the curriculum. Thus, the owners of pest management companies could train themselves their employees.
- Important issues regarding pests were also defined by the participants and should be considered when developing the modules of WP4. These issues were, in descending order:
 - Being aware of the best control methods to apply to the pest species
 - Identification of the pest species you are targeting
 - Being aware of non-chemical methods to be adopted for the prevention/management of the targeting pest species
 - Being aware of the pests' biology and ecology
- Important issues regarding pest control agents were also defined by the participants and should be considered when developing the modules of WP4. These issues were, in descending order:
 - Knowledge on precautionary measures when applying pest control products in order to efficiently protect the pest control operator, the non-users and the environment
 - Knowledge on legislation regarding safe and proper use of biocides (active substances and commercial products) and operation of pest control companies

- Knowledge on the properties of the active substances in pest control products (biocides) and their possible effects on human health and the environment
- Being updated on the various pest control methods/products on the market
- Understanding classification and labeling of biocides (category, toxicity, safety, etc.)
- Knowledge on safety measures/methods concerning storage, transportation and handling of empty packaging of biocides

The main conclusions of the **Italian questionnaires** include the following:

The questionnaires resulted well focused to assess the awareness, the interest and the possible gaps to be fulfilled by the future course. The size of the audience of respondents, which resulted well above the pre-fixed target, demonstrated a significant interest in the Pest Control operators about the specific themes afforded by the Project.

- The age composition of respondents resulted strongly represented by middle age experienced people which require updated and well tailored training “not for beginners”.
- The education resulted largely of high profile with mostly of the respondents covering a technical role in the Pest Control companies for 10-15 years.
- The profile of PCO is in the SME sector with the majority of them occupying less than 10 employees.
- The services offered by the PCO cover quite homogeneously all the market segments areas from residential to food industries to area wide.
- The self evaluation on the legislation knowledge and awareness showed a general profile of good familiarity with the mandatory legislation.
- Training on health and safety issues resulted well performed by the majority of respondents, also considering the current legislation in Italy that obliges companies to have a formal representative on safety issues and internal plan for safety measures management.

- Awareness regarding safety measures adoption and continuous updating and control in the working environment indicates the need for implementing appropriate actions to cover this demand.
- The declared availability to actively participate, as trainers or as training, in future initiatives aimed at the work safety promotion, also specifying their appreciation for some methodologies will be a concrete useful indication assisting during the next phases of the project organization.
- The prominent contents to be included in the training activity were well evidenced by respondents which showed a high degree of professional knowledge in the specific pest management field. To be considered is also the need to focus on new methods of prevention and pest management as a way to reduce the risk of biocides produced risks.

The main conclusions of the **questionnaires from Cyprus** include the following:

- The results concerning pest management in Cyprus show the awareness of the professionals regarding issues of pest management revealing also their training expectations. This is a very positive fact in planning the promotion of the training material/trainings.
- According to the current relevant legislation framework/Regulations in Cyprus, the employer hires trained staff or provides relevant training to their staff after hiring unless they are qualified according to criteria set by a three-member committee (received training covering a pre-set thematic area). According to the survey results, a large percentage of the participants were offered in the past a training course on pest management (90%), and in more than 70% the training was a private initiative. The 83.3% noted that the training they have received referred to "Regular training courses. Besides this, the results of the questionnaires reveal that they seek for further training showing the understanding of the importance of this practice for their field in line with the relevant legislation. More specifically, 80% of the respondents are interested in receiving training (either as a trainer or trainee).

- Field training was revealed to be the most appropriate method for the respondents
- A large percentage of the participants (80%) replied that they would be interested in attending training courses. 40% respondents to training for trainers and 40% for trainees. This is a fact that could be also taken into account in the design of the curriculum.
- Health and safety issues in relevance to their profession are very important to the majority of the respondents in relevance to their health, public health and the environment. The majority of the respondents have received training in this field which reveals the importance of this aspect for the training of the specific profession also by the state and the professionals.

References

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.