



# The PIPAH Study Newsletter

## January 2018



**This year has seen the PIPAH study develop in a variety of ways. Firstly, the study grew a little bigger as we welcomed new members into the study. Continually growing in this way is really important because it means that the study includes men and women at all stages of their careers. Then we had a first for the PIPAH study when we began working on joint projects with other researchers. Developing these partnerships has many benefits in terms of advancing the science and in sharing the costs of research, but it also ensures that we get the maximum benefit from the information you generously give to the study. We have continued to develop our methodology for assessing your use of pesticides with the aim of simplifying the process for you. Finally, we reached a major milestone with the publication of our first peer-reviewed article. You can read about these developments in our newsletter below.**

### Why are we interested in pesticides?

The PIPAH study is trying to better understand the health problems that may occur with regular pesticide use, and how to keep people who use these safe and healthy at work. The use of pesticides is very important to our lives in many ways, and we are really keen to make sure that when they are used, they are used safely.

### Our fifth year.....

During the past year we have continued with our focus on exposure, in particular the potential for exposure to pesticides in the course of your work and how we can make better assessments of this. For three years, we tested a detailed questionnaire on the use of pesticides with small groups of study participants. Using their responses to the questions and their feedback on the questionnaire, we finally reached the stage when the questionnaire was ready to send to all of our study participants. So at the beginning of our fifth year, we invited everyone to complete this questionnaire on their use of pesticides during 2016. We were delighted with the response to our invitation: just under 1500 participants completed and returned the lengthy questionnaire. We are hugely grateful to everyone who completed the questionnaire in 2017, and to all of you who helped develop the questionnaire in the previous years. In *Behind the scenes.....* below we explain how we will use the information we received from you.



The Buxton laboratory

### On-going recruitment

Since 2013 when we first invited all the members of NRoSO (<https://www.nroso.org.uk/>) and NAsOR to take part in the PIPAH study, we have also been inviting new members of NRoSO to join the study. We do this with the help of City & Guilds who send the study invitation packs to new NRoSO members on our behalf. Men and women who decide to take part in the PIPAH study, complete the study consent form and questionnaire, and then post them direct to the study team. Contacting potential new members in this way ensures the confidentiality of the new NRoSO members.

For the first three years of the study, City & Guilds sent a study invitation pack to new NRoSO members soon after they joined NRoSO. This meant that some NRoSO members were receiving their invitations at their busiest time of the year. This year we have changed the timing; during January 2018 City & Guilds are sending the invitation packs to all of the men and women who joined NRoSO in 2017. We think that this may be a better time of year for them to take a look at the study documents.



### Spreading the word

An important part of a research study is to publicise its findings, and we have reached the stage where we could do this in a variety of ways. Firstly, we published a description of the PIPAH study in BMJ Open, which is an online, open access journal. It is one of the British Medical Journal's online journals. In this article we describe the study and provide a summary of the characteristics of the study participants. No individual is identifiable in this summary because only grouped information is presented. The article is called 'The Prospective Investigation of Pesticide Applicators' Health (PIPAH) Study, a cohort study of professional pesticide users in Great Britain', and because it is 'open access' anyone can read it online free of charge (<http://bmjopen.bmj.com/cgi/content/full/bmjopen-2017-018212?ijkey=fXdzQmvrGoMshc0&keytype=ref>).

One of HSE's medical researchers, Chris Barber, is a consultant respiratory physician. During the year, Chris has been working

with the study team on an area of particular interest, namely farmer's lung disease. We used the information in the questionnaire that you completed on joining the study, to carry out an analysis of the occurrence of farmer's lung disease among members of the PIPAH study. In September, Chris presented the findings at the European Respiratory Society congress in Milan, Italy. This is the largest meeting of respiratory professionals in the world. Over 22,000 delegates from all over the world attended the congress this year. Chris is now writing up the findings for a journal publication. A copy of the poster Chris prepared for the congress is available on the PIPAH study website (<http://www.hsl.gov.uk/resources/major-projects/pipah>). Our study medical officer, David Fishwick, is planning to present these findings on farmer's lung disease at the International Congress on Occupational Health in Dublin next year.

### Cereals 2017

David Fox, Gillian Frost and Belinda Oakley attended Cereals 2017 in Boothby Graffoe. David and Gillian are researchers working on the PIPAH study, and Belinda provides administrative support. Sharing a stand with NRoSO at the Cereals event provides an excellent opportunity to meet our members and to discuss the study with them and the wider community attending Cereals. An important topic of discussion this year was the questionnaire on pesticide use, which we sent to you in January 2017. Although our members agreed that we have to collect information about which pesticides you have used, many of them mentioned that the questionnaire took quite a long time to complete. We noted these comments and the feedback we received in the completed questionnaires, and as a result we have changed this year's questionnaire to a shorter one.



### International collaborations

The PIPAH study was designed to be a national resource for researchers investigating the health of men and women who use pesticides as a part of their job. In the past year, the PIPAH study has begun contributing to two international collaborative projects. The first project was established by a partner in the AGRICOH consortium (<http://agricoh.iarc.fr/>). The project aims to study the occurrence of chronic obstructive pulmonary disease (COPD). COPD is a group of long-term lung conditions that cause breathing difficulties. The PIPAH study, along with other studies in the consortium, has provided a summary of the characteristics of the men and women who have COPD and those who do not have COPD. The data provided by the PIPAH study were totally anonymous and no individual could be identified in the results. Only those participants who agreed in their consent forms to share their data with other researchers were included in the summary data. By pooling data from many studies, the researchers can investigate particular health conditions in a much larger group of people. These large pooled studies are usually in a stronger position to provide evidence, or just as importantly no evidence, of an effect on health than smaller individual studies.

The second collaboration is in its early stages, and is between the Institute of Occupational Medicine (Edinburgh), the University of Manchester, the Institute of Risk Assessment Sciences (Utrecht, Netherlands), and the GB Health & Safety Executive. This is a three-year collaborative project funded by the European Crop Protection Association and its aim will be to improve the methods of assessing exposure to pesticides in epidemiological studies such as the PIPAH Study (<http://www.impress-project.org/>). This fits in perfectly with our recent focus on estimating exposure to pesticides and the project will provide recommendations which are highly relevant to the PIPAH study. We will be contributing data already collected to this project. As with the AGRICOH collaboration, only data from people who agreed to share their data will be used and all data will be anonymised so that individuals cannot be identified. In addition to this, the project is planning to collect new data. In order to do this, after obtaining approval from the Research Ethics Committee, we will contact a number of our PIPAH study participants and invite them to take part in this new piece of research. As is the case with any invitation, those who are invited will be free to choose whether they take part or not.

### Behind the scenes....

#### Developing the questionnaires

In the 2017 Newsletter<sup>1</sup>, we described how we could assess your exposure to pesticides using a Crop-Job Exposure Matrix. This matrix is essentially a tool which can be used to estimate an individual's use of pesticides, provided we have some basic information about their job. An important benefit of this tool is that it will remove the need for lengthy questionnaires on pesticide use.

The questionnaire on the use of pesticides, which we sent to everyone in January 2017, has a critical role in developing the Crop-Job Exposure Matrix. The information from the questionnaire, along with the Field Traceability Reports some participants were able to send us, will be used to check the accuracy of the Crop-Job Exposure Matrix method.

During the year we have developed the method for three main areas of pesticide work, namely cereals, grassland or fodder crops and orchard crops. Over time we will extend this to cover all of the main areas of pesticide work you have reported in your questionnaires, including non-crop areas.

<sup>1</sup> The 2017 Newsletter is available on the PIPAH study webpage: <http://www.hsl.gov.uk/resources/major-projects/pipah>.

### What's next?

The development of the Crop-Job Exposure Matrix to cover all of the main areas of pesticide work will continue for some years to come. Investing time into this aspect of the study is vital, because we can only begin to investigate whether there are any links between use of particular pesticides and health if we know who has or has not used them.

In 2017 we began investigating farmer's lung disease, one of the lung conditions we asked you to report on in the general questionnaire which you completed on joining the study. Staying with respiratory health, in the questionnaire this year we have included a set of more detailed questions on respiratory health, which will enable us to investigate respiratory health within the PIPAH study. With the information gathered from this set of questions, we will be in a position to describe the overall respiratory health of our participants, and to compare it with the respiratory health of the general population and other occupational groups.

In January 2019 we will invite you to complete the follow-up General Questionnaire, which we originally planned to send to you this year. We changed our plans in the light of your feedback on last year's pesticide use questionnaire and decided to wait a year before inviting you to complete this less complicated but still quite lengthy questionnaire. The main purpose of the General Questionnaire will be to give us an update on your health and on the many factors which can affect your health, including diet and other lifestyle factors.



### Farmer's lung disease

Although a link between agricultural exposures and breathing problems has been known about for several centuries, the condition of Farmer's Lung Disease (FLD) was first described in Britain in the 1930s. It was not until the 1960s that Jack Pepys, a research doctor in London, identified that FLD was an allergy caused by breathing in spores from mouldy hay. Since then, a wide-range of other agricultural and farming dusts have also been reported to cause similar health problems, examples including Malt Worker's Lung, Mushroom Worker's Lung, baggasosis (from sugar cane exposure) and Birdbreeder's Lung.

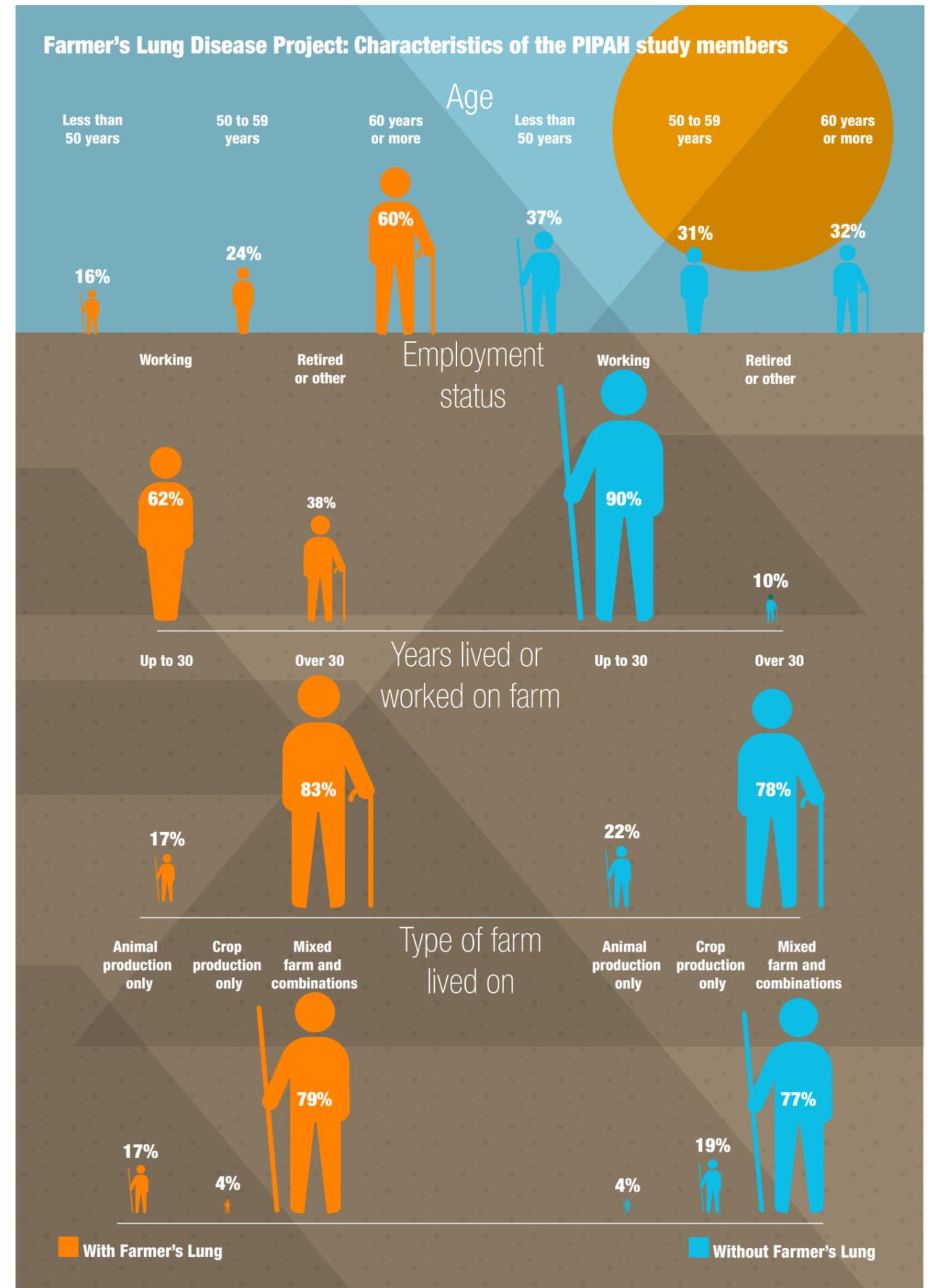
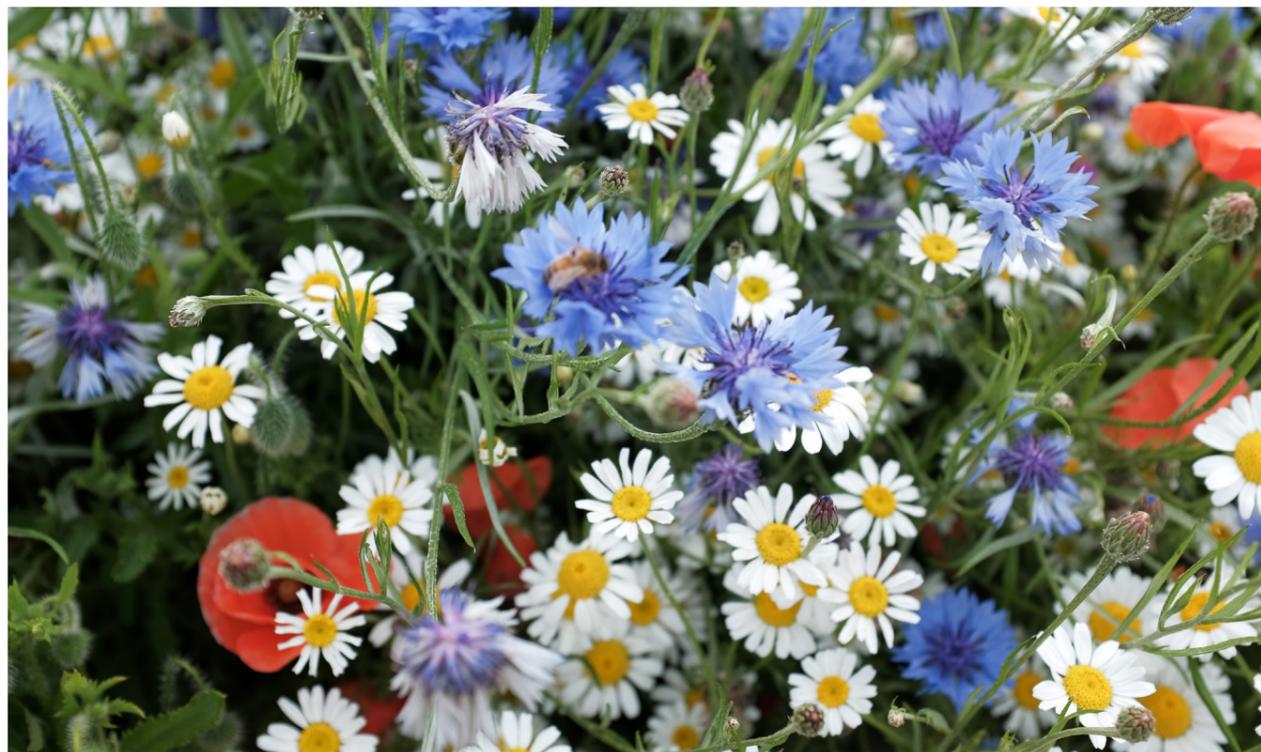
Over the years, our knowledge of these diseases has improved greatly. Researchers have carried out studies of groups of workers at risk of this illness, particularly FLD in Scandinavia and France. One important example of this is the finding that only a small proportion of workers exposed to a cause will ever develop FLD, suggesting that an individual's genetic make-up may be important.

In 2007 the findings from a very large study of FLD in around 50,000 agricultural workers in the USA were published. They reported that farmers handling silage and using certain

pesticides were at an increased risk of FLD. PIPAH study members work in many different sectors, but the majority of members work in agriculture. The PIPAH study offers a unique opportunity to study FLD in a large group of agricultural workers. The information collected by the PIPAH study represents the first British data on FLD for several decades.

The results from our research were presented in September 2017 at an international meeting of lung doctors held in Italy. We found an overall rate of 5 cases per 1000 farmers. This figure is similar to that reported from studies in other countries. The average age that individuals had been diagnosed with FLD was 35 years of age, although the age range was quite broad from 16 to 62. In terms of risk factors, there was a suggestion that working in animal production increased the chance of having FLD.

Further research is planned to look at other risk factors for FLD including pesticide exposure, and also to consider different types of lung disease such as asthma, chronic bronchitis and emphysema. This work is only possible thanks to the information that you have already provided by taking part in the PIPAH study - a big thank you from our research team!





Once again, we would like to thank you for taking part in the PIPAH study and hope you continue to remain members of it. We certainly can't do without you and we look forward to sending you another update. In the meantime, please don't hesitate to contact us either by email [PIPAH@hsl.gsi.gov.uk](mailto:PIPAH@hsl.gsi.gov.uk) or by freephone 0800 093 4809 if you have any queries, want to discuss any aspect of the PIPAH study with us, or if you would like to update your current contact information.

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**Visit our webpage** <http://www.hsl.gsi.gov.uk/resources/major-projects/pipah>

