

Statement of Purpose

Close to 200 million pounds of pesticide are used each year in California's 30 billion dollar agriculture industry. Agricultural pesticide use has raised concerns in a number of areas, including groundwater and surface water quality, endangered species exposure risks, farm worker safety, pesticide resistance, and in the ag-urban interface. In 1990, the California Department of Pesticide Regulation (DPR) implemented full use-reporting in 1990 under the Food Safety Act of 1989 (AB2161). Since then, comprehensive pesticide use data has been collected by DPR. These data provide a solid foundation for analysis of pesticide impacts on health and the environment.

DPR's pesticide use report (PUR) system is the largest and most complete database on pesticide use in the nation. The database contains 32 data fields including the amount of products/active ingredients used, commodities/crops that received the application, application date and methods, geographic location of the application, and the operator identification (CDPR, 2000). Data are reported to county agricultural commissioners' offices by the pesticide applicators and/or growers, and counties subsequently submit data to the DPR for compilation. Compiled data are then iteratively reviewed and error checked by county biologists, DPR scientists, and DPR error-checking software before distribution to the public.

The PUR is used by regulators, researchers, educators, and commodity groups to promote integrated pest management, identify successful alternative pest management systems, promote reduced-risk pesticides, protect endangered species, and establish use limits for some pesticides on air and water quality, as well as protect human health. However, working with the PUR is difficult and proper data analysis requires an understanding of the intricacies. The sheer size of the PUR database is imposing, comprising 2.5 million records per year going back to 1990. Data summaries are available on the Web but more detailed analysis requires a significant investment in computing infrastructure. Researchers are confronted with a variety of data quality problems and much effort has been recently invested in understanding and resolving these issues. Thus, the PUR database is a powerful research tool but challenging to use. A workgroup would facilitate use of the PUR within UC by promoting a shared understanding of the database's problems and potential.

The proposed workgroup will bring together people who share a common interest in pesticide use issues to promote effective communication and interaction among the members. Potential members include faculty, extension specialists, and farm advisors in the UC, - PUR analysts in state agencies, and commodity groups. The specific objectives of the PUR workgroup are:

1. Form a network to discuss use of the PUR in research, government regulation, and the farm-related community, and to exchange information on the best way of using the PUR for various purposes.
2. Provide a forum for members to exchange insights and experiences in PUR analysis in their work and research.

3. Discuss specific measures of pesticide use, pounds active ingredient applied, acres treated, number of applications, weighted index of use, and other potential measures of pesticide use, and the impacts of using the different measures for various purposes.
4. Encourage members to collaborate and publish PUR analysis and methodology, and disseminate PUR-related information through a website and other appropriate avenues.

The proposed workgroup addresses the priorities of UC ANR. Pest management is among ANR's highest priorities in agricultural resources. The PUR has been used to some extent in pest management research but potentially could play a more important role in this and related areas. Through the workgroup, members can exchange insights and experiences relating to pesticide use analysis. Group communication and interaction will improve pesticide use data analysis and pest management, and potentially reduce adverse impacts of pesticide use on the environment.

Furthermore, ANR Target Issues 2002 also highlights the reduction of non-point source pollutants in agricultural and urban landscapes (Target Issues #7) and non-point source water pollution (Target Issues #5/6) as the research priority. Pesticide use data are available at a fine spatial and temporal resolution. The PUR workgroup can help researchers address issues relating to pesticide non-point source pollution and pesticide TMDL (Total Maximum Daily Load) assessment. Promoting PUR analysis through this workgroup can provide a foundation for establishing potential future reporting systems and/or for providing the useful information to other states that wish to set up similar pesticide use report system.

Accurate analysis requires an understanding of the data's intricacies. Currently, there is little standardization in PUR analysis methodology. It would be beneficial to have a common understanding of the database. Moreover, it is useful to share and document information on limitations of the data and how to use the information properly. This workgroup can facilitate/enhance the communication about the PUR analyses among its members and provide a forum for information exchange.

The workgroup will use four outlets for communication: workgroup meetings, workshops, newsletters, and the website:

1. Workgroup meetings (two per year). First meeting: discuss issues relating to workgroup schedules and activities, and exchange PUR analysis experiences; Second meeting: further discussion of past and current PUR related projects. Meetings will be organized around both presentation and discussion.
2. The yearly thematic seminar/workshop will feature presentations by workgroup members or invited speakers. This will be an extended activity of one of the regular workgroup meetings.
3. Information sharing via published papers or newsletters. A major goal is to publish papers regarding collaborative efforts of workgroup members in order to extend information about the PUR to a wider audience.

4. Workgroup website for the members to present their results and to exchange their experiences in PUR analysis. The website will also serve to promote activities and information developed by the workgroup to a wider audience. We will also establish an email list of the workgroup members for information exchange.

There are at least five ways for members to become involved in workgroup activities:

1. Participate in the workgroup meeting and share opinions.
2. Participate in thematic workshops, either by presenting information related to PUR analysis or by learning from others in the workshop.
3. Submit results of PUR analysis to workgroup newsletter editors for publication. A newsletter can share the PUR activities with all the members.
4. Discuss workgroup issues through the email list to facilitate a common understanding regarding PUR analysis issues.
5. Obtain information about the PUR workgroup and related information via from the workgroup website.