

## **Human Exposure to Pesticides**

*Belinda Clarke and Dr. Andrea Ferro*

Since people spend most of their time in buildings, indoor air quality is of enormous importance to human health. Ambient particulate matter (PM) concentrations have been positively correlated with human respiratory and cardiovascular disease. However indoor and outdoor air compositions vary. Therefore understanding the association of indoor particulate matter with human health is important

A two story, single family test house is used for this study. Scripted activities are performed to simulate a normal indoor activity cycle. Particle monitors placed indoors and outdoors measure real-time particulate matter and collect an integrated filter sample for particulate matter less than 10um (PM-10). SF<sub>6</sub> concentration is measured by a multigas monitor after a daily, 1-hour release to determine the air exchange rate at the house. Indoor and outdoor temperature and relative humidity are monitored because particulate matter monitoring is affected by environmental conditions.

Differences recorded between PM-10 concentrations as measured by the indoor monitor and PM-10 concentration measured by the outdoor monitor are correlated with human activity. Results from days when there is no activity are compared to results from days when there is activity. Emission rates for the human activity are estimated using a mass balance model based on the assumption of uniform indoor mixing.

Conclusion is made as to how particulate matter concentration is affected by indoor human activity.