

All Interested Parties. Chronic Exposure from Low Doses of Common Agricultural Pesticides Linked to Future Health Problems (Thursday 01/31/2008 12:00PM)

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A new study published in the Journal of "Environmental Health Perspectives" investigated pesticide residuals on common produce, and if these residuals could be transmitted to children who ingested these foods. Children who ingested organic products did not have a detectable level of the agricultural pesticides 'malathion' or 'chlorpyrifos'. However, children who ingested produce from non-organic sources had low doses of these pesticides present in their urine and saliva.

This study verified chemical residuals in many non-organic produce including:

- 96.6% of all peaches
- 93.6% of all apples
- 92.3% of all strawberries
- 68% of all lettuce

Pesticide residuals found on local produce is not a surprise, however the rates of pesticide contamination are higher than many would expect. The disparity between children ingesting organic versus non-organic produce is indicative of not only its quick delivery to children, but its quick elimination from the body if the child's diet was switched to organic foods. As with any pesticide or chemical, it is the dose that makes a chemical either dangerous or benign. A chemical's presence in a child's body doesn't indicate dire results. EPA has established thresholds which would indicate that the acute and chronic effects from such low doses of these chemicals would be negligible on children.

Keep in mind, high levels of organophosphates are linked to death or other serious health problems. The effects of low dose, chronic exposures over a period of years are much harder to determine. A recent animal study demonstrated that persistent cognitive impairment occurred in rats after chronic dietary exposure to chlorpyrifos. In addition, an agricultural health study has recently released some interesting results on this subject.

Agricultural Health Study

In an on-going study conducted with more than 90,000 private applicators, the long term consequences of low dose exposures to various pesticides were assessed. The research suggests that low doses of many pesticides over long periods of time cause detrimental effects. Private applicators that used methyl bromide, aldrin, chlorpyrifos, coumaphos, and permethrin showed a significant increase in prostate cancer. Applicators that used paraquat, parathion, malathion, or chlorpyrifos over many years also had a significantly higher incidence of wheezing (asthma like symptoms).

All findings are being further investigated. The suggestion that chronic-low doses of chlorpyrifos may cause problems to applicators years later combined with low levels found in children are a cause for concern. Children

are more susceptible to pesticides due to their body weight, higher metabolic rate, and developing nervous systems.

Pesticides are an invaluable tool for the agricultural industry that must be used to support our planet's rising populations, fight pest outbreaks, and minimize insect vectored diseases. Using these pesticides judiciously while minimizing unnecessary exposure to not only ourselves but our children should be a priority. Using common sense while practicing good judgment will help minimize any unknown detrimental effects that may occur years later through low dose / long term exposures.

FOR FURTHER INFORMATION CONTACT: For further information on these findings review the following short news article "[Complete News Story](#)", or you may see the full research publication at "[Environmental Health Perspectives](#)". Contact the MSU Pesticide Safety Education Program office (406-994-5067 or email: ctharp@montana.edu) if you have any further questions regarding.