

FACT SHEET

ORCHARDS

Spraying of orchards with various arsenic compounds was introduced to New Zealand around 1880.

Lead arsenate was the most common. Application was variable in time and between operators and the resulting contaminant pattern varies as well. Spraying from a truck or horse drawn cart often resulted in massive hotspots in places where the truck or cart got stuck. Letting the spray fluid out onto the ground was often the only way to get unstuck. Hydrant systems (using a network of high pressure piping over the whole site) often had leaks where fluid spilled into the soil every year.

Worse contamination is found where broken apple crates were burned as in the ashes the wood treatment chemicals (again arsenic combined with copper and chromium) have accumulated to extreme concentrations (see box below). Lead from lead paint is found in glass houses (inside painted annually with white lead-oxide paint) as well as around old houses and sheds.



Using a hose connected to a hydrant system each time the hose was disconnected fluid leaked into the soil.

They sprayed, you pay? Spraying of arsenical pesticides on apple orchards was routine from the late 1800s through the 1940s. Lead arsenate was not banned, however, until 1988. images: Library of Congress

The arsenic and lead in the dust walked into the house causes continuous exposure to the people and kids living (and crawling) on such a site. Low level contamination can sometimes be remediated by soil mixing, however once high concentration hot spots are mixed in as well the mixing will have only made matters worse.

An experienced person can check for the presence of arsenic or lead in an orchard prior to purchase or for the presence of arsenic or lead in the house dust in a couple of hours. To check for DDT or modern pesticides samples will need analysis in a laboratory.

If you have any doubt about the presence of a dip site, own a wool- or shearing shed, use the free question service on this website to get more information specific to your situation.

Main contaminants (found at 100 – 50% of original concentration mg/kg)			
	Lead	Arsenic	DDT
Period used	1880 – 1988	1880 – 1988	1945 – 1961
NZ background level	10 – 40	4 -- 10	0.00001
Lifestyle /residential guideline level	400	30	8.4
Levels in hot spots	80 – 2000	20 – 500	5 – 150
Levels near spray shed	4000	>1000	>100
Levels in glass house	10,000	50 – 500	10 – 50
Levels burning place of apple crates	>30,000	>100,000	5 - 50
(levels found in actual orchards surveyed (total orchards surveyed : 30)			