

URBAN AGRICULTURE

Lead contamination in leafy greens

Landscape Urban Plan. **177**, 38–46 (2018)



Credit: Josef F. Stuefer/Contributor/Moment Mobile/Getty

Urban soil has been the focus of increasing research on lead pollution from both car and industrial activity, with soil contamination linked to factories and freeways rather than other types of land use. Whether vegetables grown in urban soil pick up this lead has been an unresolved question.

Chan Yong Sun and Cheon-Bo Park, at Hanbat National University in the Republic of Korea, studied 84 urban gardens near industrial complexes at three sites in Daejeon, Korea — two of which had extensive history of heavy industry while the third was only recently developed into a high-tech centre. The authors found that while 94% of gardeners surveyed believed their crops to be safe, a quarter of the leafy vegetables on these sites had lead concentrations that exceeded Korean safety standards.

The connection to the industrial complexes was the key issue, as the authors

compared site-scale indicators that applied to the gardens themselves versus landscape-scale variables that affected the region around the gardens. The impact of industrial sources far outweighed that of site-scale variables in regards to lead concentration in the leafy vegetables, and the older industrial sites had a wider impact-distance on nearby gardens than the newer complex. As lead accumulates in soil over time, long-term industrial and car use may lead to legacy effects that can impact urban produce, despite perceptions by gardeners that their organic vegetables are not contaminated. Furthermore, the authors note that root vegetables may be even more at risk than the leafy vegetables they studied.

Ryan Scarrow

Published online: 2 July 2018
<https://doi.org/10.1038/s41477-018-0206-x>