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Plant Tissue Sampling

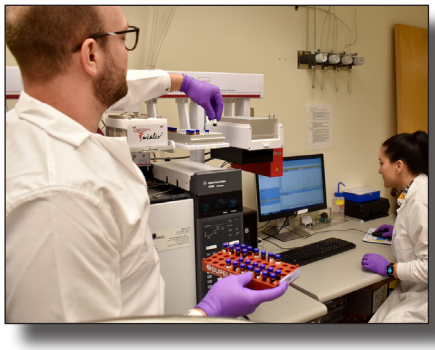
Interpreting the Results

Plant tissue samples were analyzed by The Ohio State University using USEPA Method 8270E with modified extraction protocols to accommodate plant tissue testing. A full sampling protocol and final testing results can be viewed at ema.ohio.gov.

What This Means for Producers

The data produced from scientific research at The Ohio State University and in partnership with the Ohio Department of Agriculture, shows that plant materials from agricultural sites in the East Palestine area are not contaminated with semi-volatile organic compounds (SVOCs). The findings from final testing results on plant tissue included winter wheat, pasture grasses, malting barley, and forage covers.

Samples collected and tested closest to the derailment site (inner radius) were considered most likely for potential contamination, and plant tissue samples collected farther from the derailment site (background radius) were tested to serve as a baseline comparison. OSU's analysis did not find reportable levels of SVOCs in the inner radius.



This information confirms that plant materials are not a source of SVOC exposure which is consistent with SVOC analysis of air, soil, and water samples collected by the USEPA from other locations.

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Plant Tissue Sample Results

All samples were analyzed for the same 26 selected SVOCs the USEPA has been testing for in soil samples.

Table: Plant tissue analysis for selected semi-volatile organic compounds (SVOCs) from actively growing plants in agricultural fields of Columbiana County following the Norfolk Southern train derailment. Samples were collected between April 10 – 12, 2023.

Analyte	CAS No.[1]	Reporting Level (ppm)[2]	Inner-Radius Range[3] (ppm)	Background-Radius[4] Range (ppm)
2,4,5-Trichlorophenol[5]	95-95-4	0.42	<0.42	<0.42
2,4,6-Trichlorophenol[5]	88-06-2	0.40	<0.40	<0.40
2,4-Dichlorophenol	120-83-2	0.43	<0.43	<0.43
2-Chlorophenol	95-57-8	0.31	<0.31	<0.31
2-Methylnaphthalene	91-57-6	0.66	<0.66	<0.66
4-Chloro-3-methylphenol	59-50-7	0.59	<0.59	<0.59
4-Chlorophenyl phenyl ether[5]	7005-72-3	0.48	<0.48	<0.48
Acenaphthene[5]	83-32-9	0.21	<0.21	<0.21
Acenaphthylene[5]	208-96-8	0.69	<0.69	<0.69
Anthracene	120-12-7	0.36	<0.36	<0.36
Benzo[a]anthracene	56-55-3	0.29	<0.29	<0.29
Benzo[a]pyrene	50-32-8	0.15	<0.15	<0.15
Benzo[b]fluoranthene	205-99-2	0.28	<0.28	<0.28 - 0.37[6]
Benzo[g,h,i]perylene	191-24-2	0.20	<0.20	<0.20
Benzo[k]fluoranthene	207-08-9	0.26	<0.26	<0.26
Chrysene	218-01-9	0.25	<0.25	<0.25
Dibenz(a,h)anthracene	53-70-3	0.41	<0.41	<0.41
Fluoranthene	206-44-0	0.36	<0.36	<0.36
Fluorene[5]	86-73-7	0.79	<0.79	<0.79
Hexachlorobenzene	118-74-1	0.28	<0.28	<0.28
Indeno[1,2,3-cd]pyrene	193-39-5	0.41	<0.41	<0.41
Naphthalene	91-20-3	0.70	<0.70	<0.70
Pentachlorophenol	87-86-5	0.74	<0.74	<0.74
Phenanthrene	85-01-8	0.24	<0.24	<0.24
Phenol	108-95-2	0.34	<0.34	<0.34
Pyrene	129-00-0	0.32	<0.32	<0.32

(1) A unique number assigned by the Chemical Abstracts Service, a division of the American Chemical Society to identify a specific compound.

(2) ppm =µg/g

(3) 13 Inner-radius Samples

(4) 18 Background-radius Samples

(5) Only spike-recovery used

(6) 2 of 18 background-radius samples were above the reporting limit. Detection is not believed to be associated with train derailment.