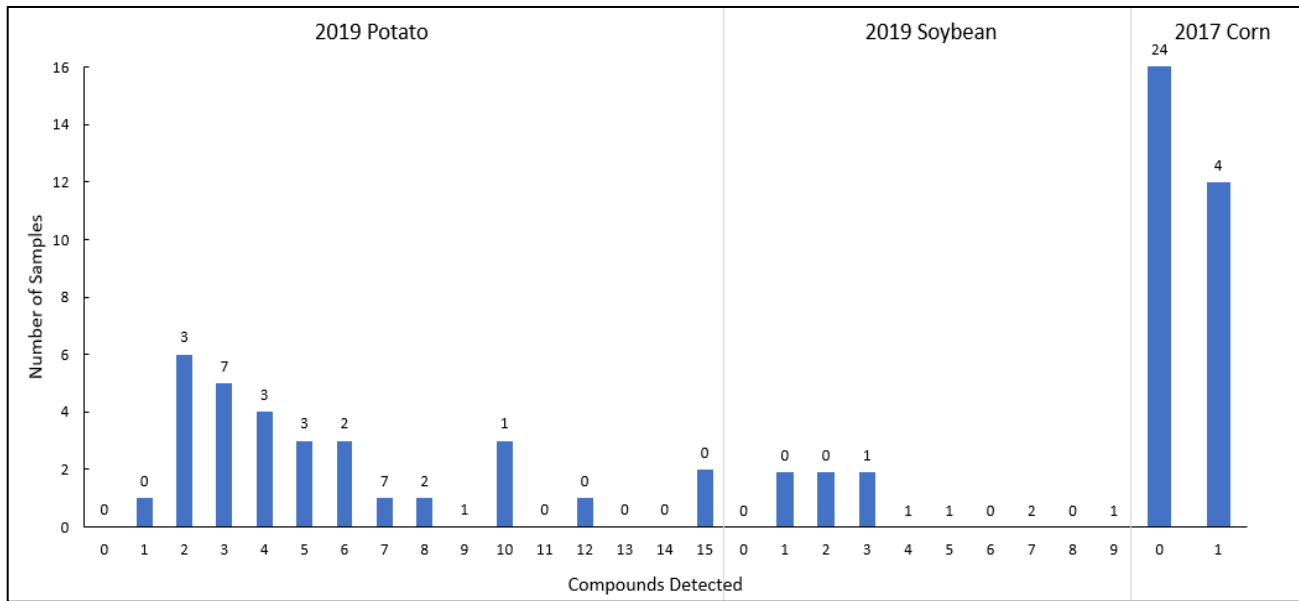


Pesticide residue on flowering habitat near crops in rural Minnesota

Every plant tested for pesticide residue contained at least 1 pesticide and up to 15 pesticides

Flowering nectar and pollen plants were hand collected from 8 different habitat sites adjacent to crops in rural Minnesota: Potato (3 sites in Big Lake, Hastings during 2019), corn (4 sites in Alexandria during 2017), soy (1 site in North Branch during 2019). Leaves and flowers were analyzed for the presence of pesticide residues.

Number of wild plant samples possessing a given number of pesticide compound residues. Data labels indicate the number of additional samples for which trace amounts of pesticides were detected.



Results: All samples were processed by the USDA AMS Gastonia, NC (2020). Potato samples (n = 30) Soybean samples (n = 6), Corn samples (n = 28). **100% of potato and soy habitat site samples contained pesticides. 40% of corn habitat site samples contained the pesticide atrazine.**

	soybean		potato		corn		
	ppb	trace	ppb	trace	ppb	trace	
Insecticide							
clothianidin*	0	2	7/3, 3, 4, 4, 4, 4, 4	8	0	0	Insecticide Neonic
coumaphos	0	1	0	0	0	0	Insecticide OP
lambda cyhalothrin	0	0	0	17	0	0	Insecticide Pyrethroid
DDE p,p'	0	0	0	9	0	0	Insecticide chlorinated hydrocarbon
DEET	0	0	2/16, 21	10	0	0	Insecticide
diflubenzuron	0	0	6/4, 4, 4, 4, 4, 4	0	0	0	insecticide growth regulator
malathion	0	0	11/2040, 2550, 27,	4	0	0	insecticide

			3000, 34, 37, 383, 39, 4130, 49, 543 1166.55 (+428.34)				
novaluron	0	6	18/1050, 1110, 116, 1190, 1430, 155, 184, 1850, 215, 219, 258, 3540, 399, 448, 68, 739, 923, 931 823.61 (+195.64)	4	0	0	insecticide growth regulator
methidathion	0	2	0	0	0	0	insecticide
permethrin	0	0	6/1020, 1550, 2310, 2900, 4030, 5850 2943.33 (+659.82)	0	0	0	insecticide
thiamethoxam*	0	0	3/6, 7, 7 6.67 (+0.27)	11	0	0	insecticide
phorate	0	2	0	3	0	0	insecticide OP
propargite	0	0	0	1	0	0	insecticide/miticide organosulphite
Insecticide total		13	53	67	0	0	
	Herbicide						
acetochlor	2/116, 133 124.5 (+6.01)	4	0	16	0	0	herbicide
atrazine	4/12, 7, 7, 8 8.5 (±1.03)	2	23/62, 50, 65, 64, 10, 10, 3, 37, 38, 6, 7, 7, 7, 12, 8, 19, 6, 8, 8, 3, 3, 6, 4, 13, 9, 3, 4 19.04 (+4.41)	2	11/8, 10, 19, 5, 7, 8, 16, 7, 12, 11, 11 10.36 (+1.19)	3	herbicide
carbenzadim	0	0	0	2	0	0	herbicide
chlorthal- dimethyl	0	1	0	2	0	0	herbicide
dimethenamid	0	0	0	2	0	0	herbicide
metribuzin	0	0	6/14, 14, 16, 17, 21, 24 17.67 (+1.50)	10	0	0	herbicide
pendimethalin	0	0	4/25, 26, 26, 28 26.25 (+0.54)	3	0	0	herbicide
thymol	0	0	0	0	1/83	thymol	0
Herbicide total	6	7	33	37	12	3	
	Fungicide						
azoxystrobin	0	5	7/13, 13, 14, 14, 16, 3, 8 11.57 (±1.58)	3	0	0	fungicide

chlorothalonil	6/30, 31, 34, 35, 35, 36 33.5 33.5 (± 0.91)	0	28/108000, 129000, 136, 186, 267, 29, 30, 30, 30, 30, 31, 31, 31, 33, 34, 35, 35, 37, 39, 40, 51700, 54, 54, 58, 67300, 73900, 82, 91200 18658.29 ($+7101.51$)	0	0	0	fungicide
difenoconazole	0	0	2/99, 119 109 109 ($+7.07$)	0	0	0	fungicide
diphenylamine	0	4	1/3 3 (± 0)	17	0	0	fungicide
famoxadone	0	3	16/1180, 1410, 151, 171, 172, 179, 199, 216, 323, 425, 469, 555, 60, 68, 85, 87 359.38 ($+95.81$)	6	0	0	fungicide
fluopyram	0	0	10/185, 2, 210, 220, 331, 4, 4, 41, 5, 65 106.7 (± 35.83)	5	0	0	fungicide
fluxaproxad	0	0	0	2	0	0	fungicide
mandipropamide	0	0	2/129, 135 132 ($+2.12$)	0	0	1	
metalaxyl	0	0	0	2	0	0	fungicide
metconazole	0	0	1/12 12 (± 0)	3	0	0	fungicide
					0	0	
metolachlor	0	5	0	14	0	0	herbicide
propiconazole	0	0	6/11, 8, 15, 13, 11, 15 12.17 ($+1.01$)		0	0	fungicide
pyraclostrobin	0	0	6/10, 14, 15, 21, 27, 8 15.83 ($+2.64$)	1	0	0	fungicide
pyrimethanil	0	0	6/1150, 925, 512, 524, 37, 76 537 ($+165.80$)		0	0	fungicide
trifloxystrobin	0	0	0	4	0	0	fungicide
Fungicide	6	17	85	57	0	1	
total	12	37	171	161			

