ONLINE SUPPLEMENTARY MATERIAL

Hearing loss in agricultural workers exposed to pesticides and noise

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Table S1. Multivariable linear regression model of the average hearing threshold (in units of dB HL) among full cohort of all farmers (n=335 subjects) for the low and high-frequency bands in the right and left ear.

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
Right ear	AIC 2371.123			AIC 2703.735		
Intercept	11.406	2.623	<0.001*	3.506	4.308	0.416
Years using pesticides	0.082	0.047	0.076	0.223	0.077	0.004*
Years using agricultural machinery	-0.099	0.056	0.076	0.201	0.093	0.031*
Age (years)	0.185	0.058	0.001*	0.345	0.095	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	0.633	1.048	0.546	4.207	1.722	0.015*
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-0.223	1.163	0.848	4.510	1.911	0.018*
Current	4.314	1.915	0.024*	8.878	3.147	0.005*
Left ear	AIC 2452.380			AIC 2715.032		
Intercept	8.725	2.961	0.003*	-3.232	4.382	0.461
Years using pesticides	0.011	0.053	0.836	0.223	0.078	0.004*
Years using agricultural machinery	-0.131	0.063	0.138	0.261	0.092	0.004*
Age (years)	0.334	0.066	<0.001*	0.543	0.097	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	-0.011	1.183	0.992	2.862	1.751	0.102
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-0.568	1.313	0.665	4.327	1.943	0.026*

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
Current	2.757	2.162	0.202	9.610	3.200	0.003*

*Significant at p-value 0.05

Table S2. **Multivariable linear regression model of the average hearing threshold (in units of dB HL) predicted by cumulative insecticide exposure (score-years) and cumulative noise exposure (dB(A)-years) among subcohort of conventional farmers (n=163 subjects) for the low and high-frequency bands in the right and left ear**.

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
Right ear	AIC 1145.985			AIC 1322.232		
Intercept	8.901	3.977	0.025*	-3.231	6.829	0.636
Cumulative insecticide exposure (score-years)						
None	0.00	-	-	0.00	-	-
0.07-0.945	1.888	1.676	0.260	1.767	2.877	0.125
0.946-2.407	-0.051	1.668	0.976	4.396	2.865	0.125
>2.407	0.575	1.736	0.740	7.115	2.981	0.015*
Cumulative noise exposure (dB(A)-years)						
0-72.4	0.00	-	-	0.00	-	-
72.4-88.9	0.256	2.241	0.909	5.728	3.808	0.133
>88.9	3.124	2.218	0.159	9.118	3.849	0.018*
Age (years)	0.209	0.064	0.001*	0.490	0.110	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	-0.547	1.608	0.734	5.926	2.760	0.032*
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-0.507	1.427	0.723	1.294	2.450	0.597
Current	12.031	3.224	<0.001*	15.705	5.536	0.005*
Left ear	AIC 1208.659			AIC 1324.361		
Intercept	5.335	4.820	0.268	-13.743	6.873	0.046*
Cumulative insecticide exposure (score-years)						
None	0.00	-	-	0.00	-	-

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
0.07-0.945	3.082	2.031	0.129	4.001	2.896	0.167
0.946-2.40	0.266	2.022	0.895	1.544	2.883	0.592
>2.407	1.117	2.104	0.595	7.091	3.001	0.018*
Cumulative noise exposure (dB(A)-years)						
0-72.4	0.00	-	-	0.00	-	-
72.4-88.9	1.500	2.688	0.577	5.985	3.833	0.118
>88.9	-1.473	2.717	0.588	9.280	3.874	0.017*
Age (years)	0.349	0.078	<0.001*	0.709	0.111	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	-1.341	1.948	0.491	4.386	2.779	0.114
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-2.153	1.730	0.213	1.612	2.466	0.513
Current	6.471	3.908	0.098	12.341	5.572	0.027*

*Significant at p-value 0.05

Table S3. **Multivariable linear regression model of the average hearing threshold (dB HL) predicted by cumulative organophosphate exposure (score-years) and cumulative noise exposure (dB(A)-years) among subcohort of conventional farmers (n=163 subjects) for the low and high-frequency bands in the right and left ear**.

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
Right ear	AIC 1142.503			AIC 1311.738		
Intercept	9.533	3.922	0.015*	0.756	6.591	0.909
Cumulative Organophosphate exposure (score-years)						
None	0.00	-	-	0.00	-	-
0.09-1.118	2.632	1.591	0.138	3.450	2.674	0.197
>1.118	2.223	1.886	0.239	10.588	3.170	0.001*
Cumulative noise exposure (dB(A)-years)						
0-72.4	0.00	-	-	0.00	-	-
72.4-88.9	3.014	2.194	0.169	5.420	3.687	0.142
>88.9	0.023	2.236	0.992	7.461	3.757	0.047*
Age (years)	0.195	0.064	0.002*	0.432	0.107	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	-0.628	1.591	0.693	5.292	2.674	0.048*
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-0.462	1.419	0.745	0.832	2.385	0.727
Current	11.145	3.181	<0.001*	12.704	5.347	0.017*
Left ear	AIC 1208.076			AIC 1318.043		
Intercept	5.609	4.796	0.242	-11.019	6.719	0.101
Cumulative Organophosphate exposure (score-years)						
None	0.00	-	-	0.00	-	-
0.09-1.118	1.979	1.946	0.309	3.577	2.726	0.189

Variables	Low frequency (0.5-2 KHz)			High frequency (3-6 kHz)		
	β	SE	p-value	β	SE	p-value
>1.118	-0.321	2.307	0.889	10.330	3.232	0.001*
Cumulative noise exposure (dB(A)-years)						
0-72.4	0.00	-	-	0.00	-	-
72.4-88.9	1.815	2.683	0.499	5.919	3.759	0.115
>88.9	-0.819	2.734	0.765	8.560	3.830	0.025*
Age (years)	0.347	0.078	<0.001*	0.678	0.109	<0.001*
Industrial noise ever						
Never	0.00	-	-	0.00	-	-
Ever	-1.414	1.946	0.467	4.465	2.726	0.101
Cigarette smoking						
Never	0.00	-	-	0.00	-	-
Former	-1.910	1.735	0.271	0.875	2.431	0.719
Current	6.885	3.890	0.077	11.252	5.451	0.039*

*Significant at p-value 0.05