Original article

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Prostate cancer risk among French farmers in the AGRICAN cohort [1]

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[1] *Supplementary material*

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Supplementary materials S1: Agricultural tasks related to animal breeding and prostate cancer risk in the AGRICAN cohort

A. Duration

	Ever			0-9 years			10-19 years			20-29 years			30-39 years			≥40 years			
	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	p[c]
Cattle																			
Animal care	909	1.15	0.98-1.35	148	**1.35**	**1.09-1.68**	93	1.11	0.86-1.42	64	1.02	0.77-1.36	133	1.11	0.89-1.39	214	1.15	0.94-1.40	0.84
Milking	723	1.14	0.97-1.34	79	1.26	0.96-1.64	59	1.13	0.84-1.52	45	1.05	0.76-1.46	74	1.15	0.88-1.50	92	1.17	0.91-1.51	0.36
Insecticide use	485	**1.20**	**1.01-1.42**	26	1.28	0.85-1.93	36	1.35	0.95-1.94	49	1.22	0.89-1.67	75	1.19	0.91-1.56	53	1.14	0.84-1.54	0.22
Disinfection of barns	470	**1.21**	**1.02-1.44**	41	**1.70**	**1.21-2.39**	28	1.13	0.76-1.68	30	0.95	0.64-1.39	57	1.15	0.85-1.55	42	1.10	0.78-1.53	0.74
Milking equipment disinfection	407	1.15	0.96-1.37	34	**1.55**	**1.07-2.24**	29	0.96	0.65-1.42	46	1.13	0.82-1.56	54	1.18	0.87-1.60	23	0.88	0.57-1.35	0.86
Hogs																			
Animal care	320	1.10	0.96-1.25	66	1.26	0.98-1.63	59	1.25	0.96-1.63	27	0.90	0.61-1.32	28	1.21	0.83-1.76	17	0.79	0.49-1.28	0.96
Insecticide use[a]	86	1.06	0.85-1.33	10	1.39	0.75-2.60	11	1.13	0.62-2.05	11	1.31	0.72-2.37	12	1.09	0.62-1.94		-	-	0.40
Disinfection of barns	166	1.09	0.92-1.29	23	1.27	0.84-1.92	21	1.12	0.73-1.73	15	1.13	0.68-1.88	15	1.50	0.90-2.51	7	0.88	0.42-1.85	0.31

B. Number of animals raised[b]

	Ever			I			II			III			IV			V			
	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	p[c]
Cattle																			
Animal care	909	1.15	0.98-1.35	153	1.11	0.89-1.38	140	1.06	0.85-1.33	163	1.09	0.88-1.34	72	1.26	0.96-1.66	48	1.20	0.87-1.65	0.11
Milking	723	1.14	0.97-1.34	131	1.24	0.99-1.56	86	1.17	0.90-1.51	43	1.00	0.71-1.39	8	0.92	0.45-1.86	9	**1.97**	**1.01-3.86**	0.20
Insecticide use	485	**1.20**	**1.01-1.42**	26	1.12	0.74-1.68	33	1.16	0.80-1.68	46	1.05	0.76-1.45	30	**1.57**	**1.07-2.31**	22	**1.59**	**1.02-2.48**	**0.01**
Disinfection of barns	470	**1.21**	**1.02-1.44**			NA			NA			NA			NA			NA	
Milking equipment disinfection	407	1.15	0.96-1.37			NA			NA			NA			NA			NA	
Hogs																			
Animal care	320	1.10	0.96-1.25	34	1.03	0.73-1.45	43	1.00	0.73-1.35	59	1.28	0.98-1.67	31	**1.55**	**1.08-2.21**	11	1.35	0.74-2.45	0.09
Insecticide use	86	1.06	0.85-1.33	5	1.31	0.54-3.15	8	1.48	0.74-2.96	13	**1.73**	**1.00-3.00**	9	1.21	0.63-2.34			-	0.43
Disinfection of barns	166	1.09	0.92-1.29			NA			NA			NA			NA			NA	

Abbreviations: HR, Hazard Ratio; CI, confidence interval; n, number of exposed cases; NA, not applicable.
Statistically significant values (P <0.05) are in bold;
Reference group: men never involved in the activity.
[a]: Duration: 0-9 years, 10-19 years, 20-29 years; ≥30 years.
[b]: Categorized in exposed subjects involved in the activity according to 25th, 50th, 75th and 90th percentile: Cattle I ≤24, II 25-49, III 50-99, IV 100-149, V ≥150; Hogs: animal care I ≤4, II 5-19, III 20-99, IV 100-499, V ≥500; Hogs: insecticide use I ≤4, II 5-19, III 20-99, IV ≥100.
[c]: p for trend.

Supplementary materials S2: Agricultural tasks related to crops and prostate cancer risk in the AGRICAN cohort

A. Duration

	Ever			0-9 years			10-19 years			20-29 years			30-39 years			≥40 years			
	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	p[d]
Grassland																			
Herbicide use	310	1.14	0.96-1.34	31	**1.51**	**1.04-2.19**	36	**1.43**	**1.01-2.03**	44	1.16	0.84-1.60	57	0.97	0.73-1.30	34	0.86	0.60-1.23	0.62
Haymaking	857	**1.18**	**1.02-1.36**	88	1.13	0.88-1.44	89	**1.36**	**1.07-1.74**	63	1.30	0.99-1.72	107	1.21	0.96-1.51	175	1.14	0.94-1.39	0.15
Vineyard																			
Re-entry tasks	345	0.91	0.80-1.04	44	0.98	0.72-1.33	46	1.14	0.84-1.53	20	0.69	0.44-1.08	46	1.04	0.77-1.40	69	0.86	0.67-1.11	0.26
Pesticide use	279	0.95	0.83-1.10	24	1.04	0.69-1.57	42	**1.53**	**1.12-2.08**	21	0.81	0.52-1.25	36	0.95	0.68-1.33	45	1.00	0.74-1.35	0.95
Grape harvesting	383	0.90	0.79-1.02	46	1.05	0.78-1.41	42	1.12	0.82-1.52	19	0.73	0.47-1.16	41	1.04	0.76-1.43	60	0.84	0.65-1.10	0.25
Working in wine cellars	229	**0.86**	**0.74-1.00**	24	0.94	0.62-1.41	26	1.12	0.76-1.66	11	0.61	0.34-1.10	22	0.79	0.52-1.21	29	**0.68**	**0.47-0.98**	**0.01**
Green spaces maintenance	116	1.08	0.89-1.32	6	0.70	0.31-1.55	18	**2.11**	**1.32-3.36**	6	0.84	0.38-1.88	12	1.10	0.62-1.95	18	1.17	0.73-1.87	0.28
Wheat/Barley																			
Seed treatment	373	**1.16**	**1.01-1.34**	43	1.34	0.97-1.83	52	**1.37**	**1.03-1.83**	24	0.76	0.51-1.15	54	1.09	0.82-1.45	52	1.06	0.80-1.42	0.73
Sowing	582	1.12	0.99-1.27	47	1.19	0.88-1.61	46	1.14	0.84-1.55	45	1.06	0.78-1.44	89	1.01	0.80-1.28	88	1.13	0.89-1.42	0.43
Pesticide use	471	**1.17**	**1.03-1.34**	35	**1.74**	**1.23-2.46**	36	1.21	0.86-1.70	54	1.12	0.84-1.49	80	0.97	0.76-1.23	66	1.28	0.99-1.67	0.26
Harvesting	638	1.13	1.00-1.28	74	**1.32**	**1.03-1.69**	57	1.21	0.92-1.60	36	0.86	0.61-1.21	80	1.03	0.81-1.31	102	**1.27**	**1.02-1.58**	0.18
Sunflower																			
Seed treatment	13	0.71	0.41-1.23	2	-	-	3	-	-	1		-	2	-	-	1	-	-	-
Sowing[a]	91	1.09	0.88-1.36	15	1.04	0.62-1.73	21	1.34	0.87-2.06	12	1.15	0.65-2.04	8	1.13	0.56-2.26		-	-	0.26
Pesticide use[a]	89	1.19	0.96-1.48	16	1.17	0.71-1.92	19	1.30	0.82-2.04	13	1.41	0.82-2.45	7	1.17	0.55-2.45		-	-	0.12
Harvesting[a]	88	1.12	0.90-1.39	12	0.98	0.55-1.73	18	1.35	0.85-2.16	14	1.59	0.93-2.69	7	1.13	0.54-2.38		-	-	0.09
Rape																			
Seed treatment[b]	22	0.80	0.52-1.22	7	0.86	0.41-1.81	6	1.00	0.45-2.24		-	-		-	-		-	-	0.92
Sowing	110	1.04	0.86-1.27	21	1.16	0.75-1.79	19	1.19	0.75-1.87	11	0.97	0.54-1.77	8	0.89	0.45-1.79	5	1.43	0.59-3.43	0.62
Pesticide use	93	1.09	0.88-1.34	16	1.11	0.68-1.82	16	1.25	0.76-2.04	10	1.10	0.59-2.05	9	1.22	0.63-2.35	5	2.01	0.83-4.83	0.10
Harvesting[a]	110	1.04	0.86-1.27	19	1.14	0.72-1.79	17	1.17	0.72-1.89	11	1.15	0.63-2.08	14	1.25	0.74-2.13		-	-	0.24
Tobacco																			
Sowing	140	**1.26**	**1.06-1.51**	29	1.21	0.83-1.75	31	**1.68**	**1.18-2.41**	19	**1.65**	**1.04-2.59**	12	1.01	0.57-1.78	11	1.26	0.69-2.28	**0.03**
Pesticide use	85	1.24	0.99-1.54	7	0.79	0.37-1.66	15	1.58	0.95-2.62	13	**1.99**	**1.15-3.44**	7	1.01	0.48-2.13	6	1.63	0.73-3.65	**0.02**
Harvesting	140	**1.29**	**1.08-1.54**	22	1.12	0.73-1.71	20	1.42	0.91-2.22	14	**1.84**	**1.09-3.13**	7	0.87	0.41-1.82	9	1.41	0.73-2.72	0.08
Fruit-growing																			
Pruning	146	1.05	0.88-1.26	17	1.00	0.62-1.62	19	1.42	0.90-2.24	12	1.36	0.77-2.41	15	1.30	0.78-2.17	20	1.15	0.74-1.80	0.14
Pesticide use	112	1.19	0.97-1.45	8	0.76	0.38-1.52	16	1.54	0.94-2.52	10	1.32	0.71-2.47	11	1.34	0.74-2.42	11	1.20	0.66-2.17	0.13
Harvesting	209	1.13	0.97-1.32	23	1.08	0.71-1.63	18	1.17	0.73-1.86	14	1.50	0.89-2.55	16	1.20	0.73-1.98	35	1.31	0.93-1.84	**0.04**
Potatoes																			
Seed treatment	53	1.18	0.89-1.56			ND			ND			ND			ND			ND	
Sowing	247	**1.25**	**1.08-1.45**			ND			ND			ND			ND			ND	
Pesticide use	164	1.19	1.00-1.41			ND			ND			ND			ND			ND	
Harvesting	264	**1.23**	**1.06-1.42**			ND			ND			ND			ND			ND	

B. Surface area (hectares)[c]

	Ever			I			II			III			IV			V			
	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	n	HR	95% CI	p[d]
Grassland																			
Herbicide use	310	1.14	0.96-1.34	32	1.02	0.71-1.47	55	**1.41**	**1.05-1.89**	42	1.00	0.72-1.39	19	0.96	0.60-1.53	21	1.11	0.71-1.74	0.68
Haymaking	857	**1.18**	**1.02-1.36**	122	**1.37**	**1.10-1.70**	132	**1.26**	**1.02-1.55**	107	1.10	0.88-1.38	41	1.11	0.80-1.54	44	**1.52**	**1.10-2.09**	0.06
Vineyard																			
Re-entry tasks	345	0.91	0.80-1.04	77	0.95	0.75-1.21	31	1.18	0.82-1.69	24	0.81	0.54-1.22	15	0.92	0.55-1.53	13	1.15	0.66-1.99	0.87
Pesticide use	279	0.95	0.83-1.10	56	1.18	0.90-1.54	20	1.17	0.75-1.83	22	1.05	0.69-1.61	12	1.02	0.58-1.81	9	1.00	0.52-1.93	0.82
Grape harvesting	383	0.90	0.79-1.02			NA			NA			NA			NA			NA	
Working in wine cellars	229	**0.86**	**0.74-1.00**			NA			NA			NA			NA			NA	
Green spaces maintenance	116	1.08	0.89-1.32	14	1.20	0.70-2.03	9	1.13	0.59-2.19		-	-		-	-		-	-	0.63
Wheat/Barley																			
Seed treatment	373	**1.16**	**1.01-1.34**			NA			NA			NA			NA			NA	
Sowing	582	1.12	0.99-1.27	52	1.17	0.87-1.56	124	1.20	0.98-1.47	65	1.20	0.93-1.57	30	0.81	0.56-1.17	10	0.83	0.44-1.55	0.55
Pesticide use	471	**1.17**	**1.03-1.34**	33	1.33	0.93-1.90	93	**1.27**	**1.01-1.59**	55	**1.37**	**1.03-1.81**	29	0.98	0.67-1.43	11	1.09	0.60-1.98	0.47
Harvesting	638	1.13	1.00-1.28	47	1.16	0.86-1.57	112	**1.29**	**1.05-1.59**	53	1.18	0.89-1.57	29	0.87	0.60-1.27	17	1.11	0.68-1.80	0.74
Sunflower																			
Seed treatment	13	0.71	0.41-1.23			NA			NA			NA			NA			NA	
Sowing	91	1.09	0.88-1.36	13	1.29	0.74-2.22	19	1.57	1.00-2.48	13	1.02	0.59-1.76	5	0.56	0.23-1.36		-	-	0.55
Pesticide use	89	1.19	0.96-1.48	11	1.38	0.76-2.49	21	**2.01**	**1.31-3.10**	12	1.17	0.66-2.08	6	0.80	0.36-1.78		-	-	0.61
Harvesting	88	1.12	0.90-1.39	11	1.54	0.85-2.79	17	**1.93**	**1.20-3.13**	12	1.35	0.77-2.39	6	0.74	0.33-1.66		-	-	0.71
Rape																			
Seed treatment	22	0.80	0.52-1.22			NA			NA			NA			NA			NA	
Sowing	110	1.04	0.86-1.27	21	1.14	0.74-1.76	18	1.14	0.71-1.82	10	0.65	0.35-1.22	5	1.27	0.53-3.05		-	-	0.96
Pesticide use	93	1.09	0.88-1.34	16	1.52	0.93-2.49	18	1.50	0.94-2.39	6	0.90	0.40-2.01	8	0.90	0.45-1.81		-	-	0.66
Harvesting	110	1.04	0.86-1.27	15	1.20	0.72-2.00	12	1.06	0.60-1.87	9	1.42	0.73-2.74	5	0.91	0.38-2.18	7	1.59	0.76-3.35	0.17
Tobacco																			
Sowing	140	**1.26**	**1.06-1.51**	59	**1.58**	**1.21-2.05**	15	**1.79**	**1.07-2.98**	9	0.96	0.50-1.85		-	-		-	-	0.76
Pesticide use	85	1.24	0.99-1.54	25	1.44	0.97-2.15	5	1.05	0.44-2.53	7	1.98	0.94-4.17		-	-		-	-	**0.04**
Harvesting	140	**1.29**	**1.08-1.54**	36	1.36	0.98-1.90	9	1.52	0.79-2.93	6	1.14	0.51-2.53		-	-		-	-	0.42
Fruit growing																			
Pruning	146	1.05	0.88-1.26	25	1.42	0.95-2.12	13	0.98	0.56-1.69	8	1.56	0.78-3.14	6	1.62	0.72-3.61		-	-	0.12
Pesticide use	112	1.19	0.97-1.45	17	1.48	0.92-2.40	7	0.74	0.35-1.57	6	1.50	0.67-3.36	7	**2.28**	**1.08-4.80**		-	-	**0.02**
Harvesting	209	1.13	0.97-1.32	28	1.25	0.86-1.82	25	1.23	0.82-1.83	7	1.19	0.57-2.51	7	1.97	0.94-4.16		-	-	0.05
Potatoes																			
Seed treatment	53	1.18	0.89-1.56			ND			ND			ND			ND			ND	
Sowing	247	**1.25**	**1.08-1.45**			ND			ND			ND			ND			ND	
Pesticide use	164	1.19	1.00-1.41			ND			ND			ND			ND			ND	
Harvesting	264	**1.23**	**1.06-1.42**			ND			ND			ND			ND			ND	

Abbreviations: HR, Hazard Ratio; CI, confidence interval; n, number of exposed cases; NA, not applicable; ND, no data.

Statistically significant values (P <0.05) are in bold.

Reference group: men never involved in the activity.

[a]: Duration: 0-9 years, 10-19 years, 20-29 years; ≥30 years.
[b]: Duration: 0-19 years, ≥20 years.
[c]: Categorized in exposed subjects involved in the activity according to 25th, 50th, 75th and 90th percentile: Grassland I ≤9, II 10-19, III 20-39, IV 40-59, V ≥60; Vineyard re-entry tasks and pesticide use I ≤4, II 5-9, III 10-19, IV 20-39, V ≥40; Vineyard green spaces maintenance; I ≤4, II ≥5; Wheat/barley I ≤4, II 5-14, III 15-29, IV 30-74, V ≥75; Sunflower I ≤4, II 5-9, III 10-19, IV ≥20; Rape sowing I ≤4, II 5-9, III 10-29, IV ≥30; Rape pesticide use I ≤4, II 5-9, III 10-14, IV ≥15; Rape harvesting I ≤4, II 5-9, III 10-14, IV 15-29, V ≥30; Tobacco I ≤1, II 2-4, III ≥5; Fruit growing I ≤1, II 2-9, III 10-24, IV ≥25.
[d]: p for trend