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# Cancer incidence in the agricultural health study

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## Abstract

**Objectives:** This large, prospective cohort study of private applicators, commercial applicators, and spouses of farmer applicators was undertaken to ascertain the etiology of cancers elevated in agriculture.

**Methods:** The participants were matched to cancer registry files in Iowa and North Carolina. Incident cases were identified from enrollment through 31 December 2002. Standardized incidence ratios (SIR) were used to compare the cancer incidence of the participants with that of the total population in the two states.

**Results:** The overall cancer incidence among farmers [SIR 0.88, 95% confidence interval (95% CI) 0.84-0.91] and their spouses (SIR 0.84, 95% CI 0.80-0.90) were significantly lower than expected, particularly for respiratory and urinary cancers. Commercial pesticide applicators had an overall cancer incidence comparable with the expected (SIR 1.01, 95% CI 0.84-1.20). Smoking prevalence was significantly lower than the national average. Prostate cancer was elevated among private applicators (SIR 1.24, 95% CI 1.18-1.33) and commercial applicators (SIR 1.37, 0.98-1.86). Excess ovarian cancer was observed for female applicators (SIR 2.97, 95% CI 1.28-5.85), but not for female spouses (SIR 0.55, 95% CI 0.38-0.78). Female spouses had a significant excess of melanoma (SIR 1.64, 95% CI 1.24-2.09), which was not observed among pesticide applicators.

**Conclusions:** Low overall cancer incidence rates seem to be a result of low overall smoking prevalence and other lifestyle factors, while excess cancer of the prostate and ovaries among applicators may be occupationally related. The excess risk of melanoma observed among spouses was unexpected.

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