

Senthilselvan A, McDuffie HH, Dosman JA. Asthma in farmers: Association with cholinesterase inhibiting insecticides.

Senthilselvan A, Dosman J, Pahwa P. Respiratory symptoms and alterations in pulmonary function tests in poultry producers: Results of a survey of farmers.

Pahwa P, Senthilselvan A, McDuffie HH, Dosman JA. Statistical modelling of longitudinal data.

Chen Y, Horne SL, McDuffie HH, Dosman JA. Synergistic effect of grain farming and smoking on lung function and the prevalence of chronic bronchitis.

Chen Y, Reeder B, Young K, Joffers M. Comparison of body mass index and waist/hip ratio between rural and urban adult residents in prairie Canada.

Brunt H, Reeder B, Chen Y. The Hutterite and Rural Saskatchewan Heart Health Surveys: A comparison of physical and laboratory measures.

Zejda JE, Gomez S, Hurst T, Barber E, Rhodes

C, McDuffie HH, Dosman JA. Respiratory health of swine producers working in livestock confinement buildings.

Genest M, Dosman JA, McDuffie HH, Pahwa P. Stress and its consequences among rural Saskatchewan residents: A pilot investigation.

Reesal M, Hagel L, Pahwa P, Domoney D, Dosman JA, McDuffie HH. Hearing loss in farmers in rural Saskatchewan.

Zasada M, Pahwa P, McDuffie HH, McNeill G, Dosman JA. Results of a survey on Saskatchewan farm accidents.

Pahwa P, McDuffie HH, Zasada M, McNeill G, Dosman JA. Use of path analysis to analyze factors which influence severity of farm injuries.

Semchuk KM, McDuffie HH. An historical cohort study of Parkinson's Disease and other neurodegenerative diseases in grain farmers, grain workers, and other selected Saskatchewan residents.

McDuffie HH, Pahwa P, Robson D, To T. A test of Cohen's hypothesis using grainworkers'

pulmonary function data.

McDuffie HH, Pahwa P, White DF. Saskatchewan women and agricultural exposures: Any relationship to tumour incidence?

McDuffie HH, Chen Y. Atopy related to lung cancer: Risk factor or outcome?

McDuffie HH, Towstego L, Pahwa P. Similarities and differences among men and women with non-Hodgkin's lymphoma (NHL) or multiple myeloma (MM).

Sparovek G, de Freitas R, Silva P, Lawrence J, McDuffie HH, McDuffie NM. Effects of heptachlor insecticide use in the Ceveiro Micro Basin, Brazil.

Hagel L, Thiessen I, Dosman JA, McDuffie HH. A respiratory health maintenance program for farmers.

Dosman JA, McDuffie HH, Thiessen I, Hagel L. The Agricultural Health and Safety Network: Where we have been and where we are going.

Semchuk KM, Love EJ, Lee RG. Herbicide use and Parkinson's disease: A test of the multifactorial hypothesis.

CENTRE REPORT '92 -'93

ANNUAL REPORT AND SUMMARY OF ACTIVITIES

CENTRE FOR AGRICULTURAL MEDICINE, DEPARTMENT OF MEDICINE, COLLEGE OF MEDICINE, UNIVERSITY OF SASKATCHEWAN



The Third International Symposium: Issues in Health, Safety and Agriculture, May 10-15, 1992, was a highlight of our year. Some of the speakers are shown here.

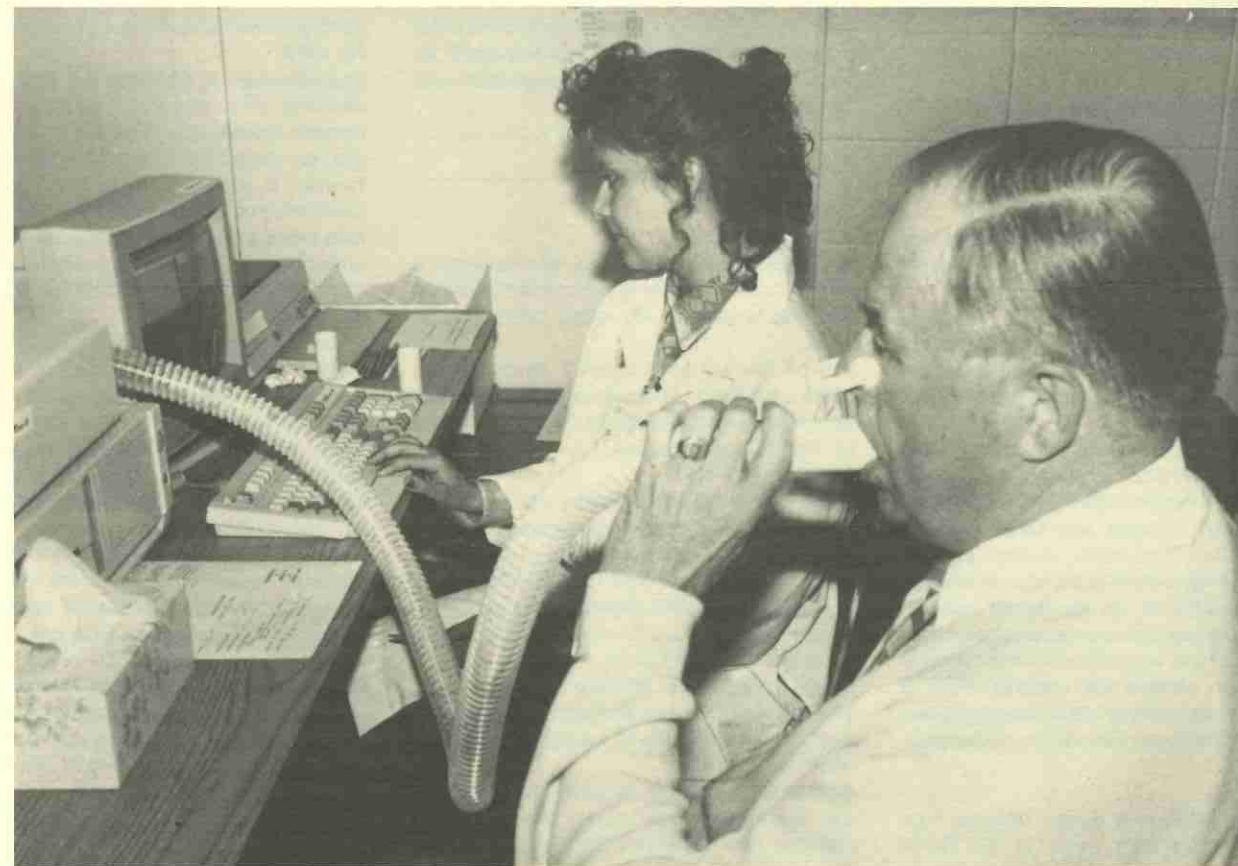
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|---|---|
| (1) I.M. McDonald, Dean, College of Medicine, University of Saskatchewan | (8) A. Nissinen, University of Kuopio, Finland |
| (2) H.H. McDuffie, Centre for Agricultural Medicine, University of Saskatchewan | (9) M. Gillis-Cipywryk, Centre for Agricultural Medicine, University of Saskatchewan |
| (3) H.B. Schiefer, Toxicology Research Centre, University of Saskatchewan | (10) J. Stewart, President, Scientific Committee on Problems of the Environment (Scope) |
| (4) S. Gerberich, University of Wisconsin | (11) S. Olenchok, NIOSH, United States Public Health Service |
| (5) A. Blair, National Cancer Institute of the United States | (12) R. Greenberg, Dean, School of Public Health, Emory University, Atlanta, GA |
| (6) N. Gerrard, Saskatoon Mental Health Clinic | (13) Hon. W. McKnight, Minister of Agriculture, Government of Canada |
| (7) J.A. Dosman, Centre for Agricultural Medicine, University of Saskatchewan | (14) K. Donham, Institute of Medicine and Occupational Health, University of Iowa |

Message from the Chair: Towards a Common Agenda

In this, my seventh and last report as Chair of the Board of Directors of the Centre for Agricultural Medicine, I would like to point out how the growth of the Centre in our College of Medicine has paralleled an increasing recognition of the importance of this area for society in Saskatchewan and beyond. For those who were involved in the formation of the Centre in 1986, it was an experiment in whether this area of research and prevention was important both for Saskatchewan and for the broader Canadian community. In the experience of the last seven years, it has become clear that the scientific basis for an important area of study and research is present, and that medical and social problems in this area will require the creativity of various segments of society. During the last year, the Centre has initiated a process aimed at defining the scientific scope and social necessity of agricultural safety and rural health issues in Saskatchewan and in Canada. Commencing with the "Third International Symposium: Issues in Health, Safety and Agriculture" - May 10-15, 1992 - in which the world-science was defined, our Centre then took the recommendations and summaries of the scientific findings to the farmers, rural people, as well as various professionals and officials by means of a follow up conference in Regina entitled "Our Future" An Action Conference on Agricultural Safety and Rural Health" - June 10-11, 1992. Several events transpired as a result of the Regina Conference: (1) a group of Senators led by Senator E.W. Barootes returned to Ottawa and established a special study of agricultural safety and rural health by the Standing Senate Committee on Agriculture and Forestry in September, 1992, which is now proceeding; (2) our Centre invited all attendees from the Saskatoon and Regina conferences, as well as other parties, to a National meeting entitled "Agricultural Safety and Rural Health: Building Coalitions" in Saskatoon on December 10, 1992, at which time both a Saskatchewan Coalition and a National Coalition for Agricultural Safety and Rural Health were established; and (3) in order to bridge the gap between recommendations from the June, 1992, Regina conference, and the potential policy issues, a coalition of agencies including the Centre for Agricultural Medicine, the National Coalition for Agricultural Safety and Rural Health, the Saskatchewan Coalition for Agricultural Safety and Rural Health, and the Canadian Federation of Agriculture, hosted "Agricultural Safety and Rural Health: Towards a Common Agenda", June 10-11, 1993, in Saskatoon. It is our hope that the recommendations from this event will lead to a Canada-wide program and a specific Saskatchewan program aimed at support for research as well as preventive activities in Saskatchewan and in Canada.

In seven years, our Centre for Agricultural Medicine has joined hands with multiple agencies to establish the scientific validity of this area and to provide the framework for policy action in Canada. My best wishes to all!

Sincerely,
I.M. McDonald, Dean, College of Medicine
Chair, Board of Directors, Centre for Agricultural Medicine



Wally Herman, right, was the first official participant in the Third Humboldt Lung Study. Lori Lockinger, left, was nurse in charge of testing for the study. (Humboldt Journal Photo).

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Our Mandate

The Centre for Agricultural Medicine is continuing its goal-oriented program of research, prevention, service and teaching related to agriculture and related industries.

Third International Symposium: Issues in Health, Safety and Agriculture, Chaired by H. H. McDuffie, J. A. Dosman and S. Olenchok. May 10-15, 1992.

This six-day scientific symposium was presented by the Centre for Agricultural Medicine in co-operation with the United States National Institute for Occupational Safety and Health and the Scientific Committee on Occupational Health in Agriculture of the International Commission on Occupational Health. The Symposium was composed of three simultaneous tracks with a total of 28 workshops focusing on major issues related to farming and sustainability in agriculture. An additional feature was a two-day educational event entitled "Clinical Issues in Occupational Medicine" for Occupational Health Nurses and Physicians. Approximately 350 scientists from Canada, the United States and 9 other countries attended the Symposium. These scientists used one afternoon to discuss and formulate recommendations for innovative, co-operative, multi-disciplinary research priorities.

The conference proceedings will be published by Lewis Publishers, Chelsea, Michigan, in a book entitled "Human Sustainability in Agriculture: Health, Safety, Environment" which will be the world update in this important area. The co-editors are H. McDuffie, J.A. Dosman, K. Semchuk, S. Olenchok and A. Senthilselvan. The co-chairs of workshops formed the editorial committee which provided major international input.

The titles of the Workshops are listed below. We can provide limited information on each topic by request.

- Mechanisms of Dysfunction in Organic Occupational Exposures.
- Grain Dust and Health.
- Occupational Asthma.
- Lung Dysfunction in Animal Confinement Workers.
- Respiratory Problems in Farmers.
- Industrial Hygiene and Engineering Controls.
- Cardiovascular Health in Rural Populations.
- Empowering the Rural Community: Theory, Research and Practise in Farm Stress.
- Sustainable Agro-Ecosystems: Essential for Rural Health.
- Injuries and Safety.
- Rehabilitation Measures for Injured Farmers.
- Rural Health Delivery.
- Rural Health Promotion.
- Occupational Hearing Loss in Agriculture.
- Surveillance Programs and Preventive Strategies.
- Skin Problems.
- Health Issues for Migrant Workers.
- Ecogenetics.
- Preventive Strategies for Health Risks in Rural Women.
- Pesticides.
- Neurological and Behavioral Effects of Pesticides.
- Epidemiological and Statistical Methods.

Cancer Risks in Agriculture.

We recognize and thank the Symposium Sponsors listed below.

National Institute of Occupational Safety and Health (USPHS)
 Health and Welfare Canada
 Northwest Area Foundation
 Heart and Stroke Foundation of Saskatchewan
 Saskatchewan Workers' Compensation Board
 Massey-Ferguson Inc.
 Western Grain Elevator Association
 Saskatchewan Wheat Pool
 IPSCO
 Agriculture Canada Federally Assisted Program (Projet d'Aide Fédérale d'Agriculture Canada)
 Labour Canada

Our Future: An Action Conference on Agricultural Health and Safety. June 10 and 11, 1992.

Farmers are nearly five times more likely to be killed or suffer disabling injuries than are workers in other major industries. Farmers and their families are at risk because of exposures to dusts, chemicals, microbes, gases, and noise. The farm family is under unprecedented stress, and rural health delivery is changing. At this action conference, farmers, rural residents, policy makers, and agricultural, community, and health representatives discussed the scientific recommendations from the International Symposium and proposed policy approaches on exposures (dusts, chemicals, etc.), prevention (dust reduction, safe chemicals management, accident control, noise abatement), rural health delivery, surveillance, and community action.

Action Plan of the "Our Future" Conference.
 Overview and Mandate: Dr. James Dosman.
 Empowering the Rural Community: Action on Stress and Mental Health Issues: Dr. Nikki Gerrard.

Rural Health Delivery: Dr. Brian Habbick.
 Disabling Injuries and Accidental Death. Dr. Geoffrey Johnston.
 Why We Established the Farm Stress Line: Hon. Berny Weins, Minister, Saskatchewan Agriculture and Food.
 How We Got the Ball Rolling on Soil Conservation: Sen. Herb Sparrow.
 Why I Believe in Agricultural Safety and Rural Health: Lorne Nystrom, MP.
 The U.S. Farm Injury and Preventive Act: Sen. Staff Barootes.
 The Realities of Cancer in Farming: Dr. Aaron Blair.
 Farm Chemicals: Dr. Helen McDuffie.
 The Saskatchewan Farm Family Survey of Health and Safety Views: Dr. J. A. Dosman.
 The Wellness Model: Working Together for Better Health: Hon. Louise Simard, Minister, Saskatchewan Health.
 What I Did When My Son Was Killed on Our Farm: Mrs. Marilyn Adams, Farm Safety 4 Just Kids.

Panel A: "Empowering the Rural Community: Stress and Mental Health Issues"
Panel B: "Rural Health Delivery: Professionals, Hospitals, Services"
Panel C: "Lung Problems in Farmers: Issues and

Options"

Panel D: "Disabling Injuries and Accidental Death"
Panel E: "Partnerships in Outreach and Prevention"

Panel G: "Structuring Research Priorities"
Panel H: "Building Coalitions for Future Action"
Sharing views and Building Coalitions: A discussion led by Mrs. Linda Pipke and Dr. Howard Morrison.

We recognize and thank "Our Futures" Conference sponsors:
 Agriculture Canada
 Health and Welfare Canada
 Northwest Area Foundation
 Massey-Ferguson Inc.

Building Coalitions. December 10, 1992. Following one of the recommendations of the "Our Futures" Conference, Saskatchewan and National Coalitions for Agricultural Safety and Rural Health were formed in December, 1992. Individuals and organizations interested in becoming part of this growing movement are invited to request further information from Dr. J. Dosman, Centre for Agricultural Medicine.

The Senator Norman M. Paterson Visiting Professorship



Dr. Margaret Becklake of McGill University is the first recipient of The Senator Norman M. Paterson Visiting Professorship. Her visit to our Centre and to the Division of Respiratory Medicine was co-sponsored by the Royal College of Physicians and Surgeons. She presented three seminars, "Spirometric Test Failure: Disease or Disinclination", "Environmental Determinants of Asthma in Children" and "COPD: An Occupational Disease?"

Research Scholar

Dr. Karen Semchuk is a recipient of the prestigious Research Scholar award as a result of a National Competition sponsored by Health and Welfare Canada. This award recognizes her exceptional research abilities and is one of only six awarded in Canada this year.

Research Projects

The Third Humboldt Study will be conducted in 1993 including all residents aged 7 to 74 years. Questionnaire administration, lung function

testing, blood pressure and weight measurements will be conducted. Sex-related effects of smoking and passive smoking on lung health, obesity, and familial resemblance of lung function, body mass index and blood pressure will be determined. (Health Services Utilization and Research Commission).

Prevalence Study of Asthma in Saskatchewan, 1981-1990. The hospital admission rates and mortality rates of asthma in Saskatchewan are among the highest in Canada. This study will enable us to estimate the period prevalence of asthma in adults and children, to study the trend in the prevalence of asthma, to investigate the differences in the prevalence of asthma between rural and urban populations, to examine the seasonality in asthma episodes and to estimate the incidence of asthma in young children (Health Services Utilization and Research Commission).

Radon Exposure and Primary Lung Cancer in Females. (Saskatchewan Health Research Board).

Lung Dysfunction in Swine Producers. The three year study was completed on schedule. (Health and Welfare Canada).

Canadian Study of Pesticide Use and Health. Continuation of a case-control study of rare tumours. (National Health Research and Development Program).

Prostate Cancer and Pesticide Exposure: Any Relationship? (Cliff Lee, B.Sc. Medicine Dean of Medicine Project, 1992-93).

A Second Test of Cohen's Hypothesis. Is cancer risk related to lung dysfunction? (Manisha Raja, Dean of Medicine funded student project, 1993).

Agricultural Occupational Exposure to Pesticides: A Historical Cohort Study of Parkinson's Disease and Other Neurodegenerative Diseases in Grain Farmers, Grain Workers, and Other Selected Saskatchewan Residents. Earlier studies suggested that agricultural occupational pesticide exposure results in an increased risk for Parkinson's disease and other neurodegenerative diseases. We have assembled a large cohort of Saskatchewan workers with variable levels of exposures to pesticides to further investigate this theory. (The Parkinson Foundation of Canada).

Service

Agricultural Health and Safety Network. The Network membership grew to 53 Rural Municipalities, more than 12,000 farm families. A manager, Mrs. Louise Hagel, was appointed to conduct the business of the Network and to develop and deliver programming to its members.

The Respiratory Health Program for Farmers continues to be a popular program. In 1992/93 the program was provided in the R.M.'s of Aberdeen, Redburn, Wallace and Sliding Hills. Over 300 farmers and their spouses participated in the program delivered by Louise Hagel, B.S.N., Shelley Kirychuk, B.S.N., and Lori Lockinger, B.S.N. The Yorkton Area Program was supported in part by the Saskatchewan Lung Association.

The theme for Network activities this year was "Spray Safe 2000", a program aimed at heightening awareness about the safe handling of farm chemicals. The program components included packages of educational materials for each member farm family, posters for use in the farm shop and the home laundry area, a video entitled "Don't Gamble with Pesticides", and pesticide safety seminars focusing on user safety. Pesticide safety equipment is being provided to R.M.'s through the SARM Trading Division.

Grainworkers' Respiratory Health Maintenance Program. The Centre continues to provide service on a contractual basis to grain workers employed by Pioneer Grain Company, United Grain Growers, Parrish & Heimbecker, Paterson Grain Company and Cargill Ltd. This program is organized and conducted on behalf of the Centre by Shelley Kirychuk, B.S.N.

As part of a Master's level Clinical Practice Course in the College of Nursing, University of Saskatchewan, in collaboration with the Rosetown Health Region, we developed a health promotion program on Farm Safety for School Children. The program was developed by J. Radsma and K. M. Semchuk and implemented in co-operation with Beechy and Mildred schools.

Publications

Papers

Semchuk KM, Love EJ, Lee RG. Parkinson's disease and exposure to agricultural work and pesticide chemicals. *Neurology* 1992;42:1328-1335.

Wang F, Semchuk KM, Love EJ. An assessment of the usefulness of demographic data provided by surrogate respondents in a case-control study of Parkinson's disease. *J Clin Epidemiol* 1992;45:1219-1227.

Zejda JE, Pahwa P, Dosman JA. Decline in spirometric variables in grain workers from start of employment: differential effect of duration of follow up. *Br J Indust Med* 1992;49:576-580.

Zejda J, McDuffie HH, Dosman JA. Respiratory effects of grain dust. Seminars in Respiratory Medicine 1993;14(1):20-30.

Zejda JE, Hurst TS, Rhodes CS, Barber EM, McDuffie HH, Dosman JA. Respiratory health of swine producers: Focus on young workers. *Chest* 1993;103:702-709.

Gomez SR, Parker R, McDuffie HH, Dosman JA. Respiratory health effects of alkali dust in residents near dewatered Old Wives Lake. *Arch Env Health* 1993;47(5):364-369.

Zejda J, McDuffie HH, Dosman JA. Epidemiology of health and safety risks in agriculture and related industries: Practical applications for the rural physician. *Western J Med* 1993;158:56-63.

Dosman JA, Pahwa P, McDuffie HH. Healthy worker effect in grain workers. *J Occup Med* 1992;34:593-594.

Senthilselvan A, McDuffie HH, Dosman JA. Association of asthma with use of pesticides: Results of a cross-sectional survey of farmers. *Am Rev Respir Dis* 1992;146:884-887.

Chen Y. Maternal age and Caesarean delivery

rate in Shanghai (letter). *Am J Pub Health* 1993;83:287-288.

Horne SL, Chen Y, Cockcroft DW, Dosman JA. Risk factors for reduced pulmonary function in women: A possible relationship between Pi phenotype, number of children and pulmonary function. *Chest* 1992;102:158-163.

Chen Y, Pederson LL, Lefcoe NM. Father's educational level, adults' smoking status and children's smoking behaviour in Shanghai. *Health Values* 1992;16(2):51-56.

Abstracts and Presentations

McDuffie HH, White D, Robson D, Tan L. Breast cancer incidence and "The Pill." *Presented Annual Meeting of American Association of Cancer Researchers, San Diego, May, 1992.*

Chen Y, Horne SL, Dosman JA. Smoking cessation and weight gain: Cross-sectional and longitudinal observations. *Clin Invest Med* 1992;15(4):suppl A16. *Am Rev Respir Dis* 1992;145(suppl):A684.

Senthilselvan A. Association of asthma with use of pesticides: Results of a cross-sectional survey of farmers. *National Workshop on Asthma and the Environment, Montreal, Quebec, October 22-24, 1992.*

Senthilselvan A, Dosman JA. Biological and chemical determinants of allergic rhinitis in farmers: Results of a respiratory health survey. *Am Rev Respir Dis* 1992;145(suppl):A533.

Reeder B, Chen Y, Young K, Joffers M. Comparison of body mass index and waist/hip ratio between rural and urban adult residents in prairie Canada. *Proceedings of the International Heart Health Conference, Victoria, BC, May 24-28, 1992.*

Chen Y, Horne SL, Dosman JA. Weight gain related to longitudinal decline of pulmonary function: A six-year followup study. *Am Rev Respir Dis* 1992;145(suppl):A197.

Chen Y, Horne SL, Dosman JA. Increased susceptibility to lung dysfunction in female smokers. *Respiratory Diseases Digest* 1992;1:30-31.

Semchuk KM, Love EJ, Lee RG. Etiology of Parkinson's disease: A test of the multifactorial hypothesis. XXVIII Meeting of the Canadian Congress of Neurological Sciences, Winnipeg, June, 1992. *Can J Neurol Sci* 1992;19(2):251.

Wang F, Semchuk KM, Love EJ. An assessment of the usefulness of demographic data provided by surrogate respondents in a case-control study of Parkinson's disease. *Clinical Digest Series: Parkinson's/Alzheimer's Digest.*

Semchuk KM, Love EJ, Lee RG. Parkinson's disease and exposure to rural environmental factors: A population based case control study. *Clinical Digest Series: Parkinson's/Alzheimer's Digest.*

HH McDuffie. Tumour clusters in first degree relatives of probands with rare tumours. Genetics in Cancer meeting of the American Association of Cancer Research. Hilton Head, S.C.

The following were presented at the 3rd International Symposium: Issues in Health, Safety and Agriculture, Saskatoon, May, 1992.

Pahwa P, McDuffie HH, Dosman JA. Longitudinal estimates of pulmonary function decline in grain workers.