

WESTERN FORUM ON PEST MANAGEMENT
November 1, 2003
Grand Okanagan Lakefront Resort and Conference Centre
Kelowna, British Columbia

Julie Soroka, Chairperson
Lori-Ann Kaminski, Secretary Treasurer

Minutes of the Annual Meeting
Saturday, November 1, 2003

Chairperson Julie Soroka called the meeting to order at 8:00 AM.

1 Introduction of the attendees:

The WFPM meetings were well attended. Following is the list of registered members.

Ashfaq, Muhammed	Hartman, Murray	Rashid, Khalid
Beauchamp, Pierre	Herbison, Yvonne	Retzlaff, Randy
Bedford, Karen	Hynes, Russell	Rupners, Ilze
Benard, Dee Ann	Jespersion, Gayle	Sadleier, Jodie
Berstrom, Karla	Joshi, Vippen	Scholberg, Peter
Bessell, Jim	Kaminski, Lori-Ann	Sharma, Paul
Blashko, Layton	Kharbanda, Prem	Skevington, Jeff
Bouchard, Patrice	Kutcher, Randy	Soroka, Julie
Braun, Lorraine	Labun, Ted	Spencer, Robin
Carcamo, Hector	Laflamme, Paul	Summers, Bill
Clark, Kerry	Lange, Ralph	Tekautz, Andy
Costello, Bob	Lynn, Carl	Terry, Allen
Cronkwright, Lynne	MacDonald, Scott	Topinka, Keith
Currey, David	Mason, Peter	Turkington, Kelly
Dolinski, Mike	McClay, Alec	Ulmer, Bryan
Dosdall, Lloyd	McLeod, Rod	van den Berg, Kees
Elliott, Bob	Meyers, Trish	Vernon, Bob
Foster, Shawn	Morrall, Robin	Volney, Pete
Franke, Coreen	Nailor, Brenda	Wagner, Neil
Friday, Todd	Northover, Philip	Wagner,
Fry, Ken	Olfert, Owen	Walsh, Peter
Gabert, Keith	Olivier, Chrystel	Wilkin, Irene
Gavloski, John	Otani, Jennifer	Wise, Ian
Gibson, Gary	Patzer, Kelly	Witonyk, Brian
Goulet, Henri	Pearse, Penny	Wise, Ian
Hammond, Derwyn	Philip, Hugh	Zeleny, Kim
Hartley, Scott	Pidskalny, Ron	

2 Thank you to Sponsors and organizing committee

Sponsors are as listed below, organizing committee lead by Hugh Philip and Gail Jespersen.

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3 Acceptance of / Additions to Agenda

J. Soroka informed the meeting that a coffee break would be included as close to 10:00 A.M. as possible, and that the order of the technical speakers would be adjusted to accommodate other commitments.

Motion to accept the agenda as amended moved by **K. Rashid**/ seconded by **I. Wise**
CARRIED

4 Adoption of the minutes of Last Meeting

Motion that the minutes of the Western Forum on Pest Management meeting annual meeting October 5, 2002 are adopted as circulated and presented.

Moved by **H. Philip** / seconded by **J. Gavloski** **CARRIED**

5 Business arising from the 2002 minutes.

5.1 *Western Forum Website Development:*

K. Fry reported the findings of the 3-member committee (R. Lange, K. Fry and D. Johnson). The committee recommends that the WFPM use a private hosting company, that the WFPM website editor have direct access, and that the costs be shared 1/3 each by Western Committee on Plant Disease, Western Committee on Crop Pests and WFPM.

Motion to accept the proposal of the Website committee (as above) to establish a WFPM website at a cost not to exceed \$700.00 and that WCPD and WCCP editors also be granted direct access with bills to be forwarded to the WFPM secretary/treasurer.

Moved by **H. Philip** / seconded **J. Otani** **CARRIED**

5.2 *Inter-Provincial Monitoring Program:*

O. Olfert reported that a proposal to include a Tri-Provincial Insect Monitoring Program under the Reduced Risk Strategies of the Agricultural Policy Framework was turned down. The project "Co-ordinated monitoring, forecasting and risk warning for insect pests of field crops in Canada" was accepted for funding by Canola Council of Canada with joint funding from Alberta Canola Producers Commission, Saskatchewan Canola Development Commission.

5.3 *CCA Certification:*

J. Soroka reported that this meeting has been accredited by the Canadian Society of Agronomy (CSA) for continuing education credits towards Certified Crop Advisor (CCA) status. The WFPM Chairperson will seek CSA accreditation on an annual basis.

6 Nominations Committee

K. Turkington and H.Philip were appointed to the Nominations Committee

7 Resolutions Committee

J. Gavloski and S. Hartley were appointed to the Resolutions Committee.

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8 Treasurer's Report

The final statement for the year 2002 was distributed with the minutes. K. Fry presented the audited 2002/2003 Financial Statement. L. Kaminski presented a 2003 meeting update based on the organizing committee's projected cost estimate, and sponsorship and registration revenues. Both statements are appended below.

Motion that the Treasurers' reports be accepted moved by **A. Tekautz** / seconded **B. Gossen**
CARRIED

9 New business

10 Committee Chair's Reports

10.1 WCCP Report

H. Philip chairperson of the 43rd annual meeting of the WCCP reported that there were 46 in attendance on October 31, 2003. Report appended below.

Motion to accept WCCP report moved by **H. Philip** / seconded **H. Carcamo...CARRIED**

10.2 WCPD Report

K. Turkington chairperson of the 28th annual meeting of the WCPD reported that attendance at the October 31, 2003 meeting was 35 individuals. Report appended below.

Motion to accept WCPD report moved by **K. Turkington** / seconded **K.Rashid.**
CARRIED

11 Technical Reports

11.1 *West Nile Virus Surveillance in Canada: The Continuing Saga:*

Robin Lindsay, Research Scientist, National Microbiology Laboratory, Heath Canada, Winnipeg, MB.

11.2 *West Nile Virus in Saskatchewan:*

Phil Currie, Saskatchewan Department of Heath, Regina, SK Report attached below.

11.3 *AAFC National Program for the Development of Reduced Risk Pest Control Strategies:*

Gary Whitfield, AAFC, Harrow, ON

11.4 *Development of an IPM Program for Insect and Mite Pests of Grapes in BC:*

Tom Lowery, Research Assistant, AAFC, Summerland, BC

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12 Technical Reports from Associated Agencies

12.1 *Canadian Food Inspection Agency*

J. Allan Garland, Canadian Food Inspection Agency, Science Branch, Laboratories Directorate, Centre for Plant Quarantine Pests, Nepean, ON. For D.J. Parker, report attached below

12.2 *AAFC, Eastern Cereal and Oilseeds Research Centre, Ottawa, ON*

Peter Mason, report attached below

12.3 *Pest Management Regulatory Agency*

Pierre Beauchamp, Senior Evaluation Officer and Luc Pelletier, Insecticides Section, Ottawa, ON

12.4 *Canola Council of Canada*

Jim Bessel, Saskatoon, SK.

12.5 *Crop Life Canada*

Bill Summers, Dupont

13 Election of Chair

The nominations committee put forward **B. Gossen** as the candidate for Chairperson (term to expire after the 2004 meeting).

Moved by **K. Turkington** / seconded by **K. Fry**

CARRIED

14 Resolutions

Whereas the success of the 2003 annual meetings of the WFPM and its Constituent Western Committees can be attributed in large part to the comfortable meeting facilities and room accommodations, the helpful and friendly staff, the excellent refreshments and food and the overall hotel amenities in general,

Therefore be it resolved that the chair of the 2004 Western Forum send a letter to the appropriate facility managers at the Grand Okanagan Lakefront Resort and Convention Centre expressing the appreciation and gratitude of the members.

Moved by **J. Gavloski** / seconded by **K. Fry**

CARRIED

15 Location of the 2004 meeting

Motion: that the location for the 2004 WFPM meeting will be in Saskatoon, SK.

Moved by **S. Hartley** / seconded **P. Pearse**

CARRIED

16 Adjournment

Motion: That the 2003 annual meeting of the WFPM be adjourned.

Moved by **H. Philip**

CARRIED

**Western Forum on Pest Management
Annual Meeting Sponsorships
2003**

Syngenta

Dupont

Gustafson

BC Ministry of Agriculture, Food and Fisheries

Engage Agro

BASF

Bayer CropScience

Growers' Supply Co. Ltd.

Dow AgroSciences

Bartlett Inc.

Arvesta

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Preliminary Financial Statement for the Inter-meeting Period 2002-2003

Revenue

Sponsors	\$4,850.00	
Registration (89@ \$25)	\$2,225.00	
WCPD Guide (36 @ \$10)	\$360.00	
Bonus	\$11.32	see note 1

Total Revenue	\$7,446.32	
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Expenses

Food Service	\$3,874.40	
Meeting Rooms	\$600.00	
Meeting Supplies	\$19.56	
ECIPM Meeting Travel	\$278.20	
To WCPD (Guide Revenue)	\$308.12	see note 2
WF Speaker	\$0.00	

Total Expenses	\$5,080.28	
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Balance for the 2002 Meeting	\$2,366.04
Mutual Fund Interest	\$153.99
Opening Balance	\$7,443.32
Closing Balance	\$9,963.35

Note 1: \$5.00 unclaimed change at registration desk, \$6.31 overpayment from traveler's cheque in US currency

Note 2: \$360 less photocopy charges

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Western Forum on Pest Management
Kelowna, BC
November 1, 2003
Preliminary Meeting Statement

Revenue

Sponsors \$3,650.00

Registration (80@ \$20+2
guests @ \$10) \$1620.00

Total Revenue **\$5,270.00**

Expenses

Food Service \$3,558.50

Meeting Rooms \$495.22

Total Expenses **\$4,053.72**

Balance for the 2003 Meeting **\$1,216.28**

WESTERN COMMITTEE ON CROP PESTS
43RD ANNUAL MEETING
October 31, 2003
Grand Okanagan Lakefront Resort
Kelowna, British Columbia

Business arising from 2002 minutes - Archival material of WCCP is presently being stored at Agriculture Canada, Saskatoon. M. Dolinski requested Owen Olfert to notify the WCCP of what is missing.

The provincial **insect pest reports** were presented from each of the western provinces;
 Hugh Philip for British Columbia,
 Kim Zeleny for Alberta,
 Scott Hartley for Saskatchewan,
 John Gavloski for Manitoba

Provincial Entomological Research Summaries were given by;
 Bob Vernon for British Columbia,
 Jennifer Otani for Alberta,
 Martin Erlandson for Saskatchewan and
 Ian Wise for Manitoba

WCCP Guide Section Editors 2004 will be:

- Cereal crops and grain cornJ. Gavloski, O. Olfert
- Oilseed crops I. Wise, J. Gavloski
- Forage crops J.Soroka, J. Otani
- Special crops S. Hartley, O. Olfert
- Household pests J. Byer, K. Zeleny
- Home vegetable crops S. Barkley, R. Spencer
- Commercial vegetable cropsR.S. Vernon, B. Elliott
- Greenhouse crops R. Costello, K. Fry
- Interior plantscapes and house plants K. Fry
- Mushrooms R. Costello
- Berry crops K. Fry, B. Elliott
- Tree fruits H. Philip, B. Elliott
- Shelterbelts, ornamental trees and shrubsTBA
- Seasoned wood and timber structures H. Philip
- Turf G. Byrtus
- Warehouse and farm-stored grainP. Fields, N.D.G. White
- Hazards of applying insects to crops in bloom. J. Soroka

A motion was passed to have the WCCP align with the Western Forum and the WCPD to form a joint Web site in which the WCCP pays an equal share of the costs of the site. K. Fry was appointed as Webmaster for the new WCCP Web site. The new site would also include agenda of meetings, minutes, announcements and the Guide.

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A Canadian Food and Inspection Agency Quarantine report was presented by Jon Bell.

Luc Pelletier gave report on activities of the Insecticides Section of the Pest Management Regulatory Agency

Peter Mason gave an update from ECORC.

Industry representatives reported on

There were 3 Special Reports presented,
Tim Ebata, Forest Health Project Specialist with the British Columbia Ministry of Forests, presented information about the Mountain Pine Beetle Outbreak.

Adrian McCluskey brought us up to date on the Codling Moth Sterile Insect Release Program.

Hugh Philip presented information on the progress of the Integrated Fruit Production program Growing With Care.

The **WCCP 2004 Chair** will be **Scott Hartley**.

One resolution was brought forward at the meeting as follows;

Resolution from the Western Committee on Crop Pests regarding Grasshopper IPM Expertise Background

Whereas grasshopper infestations have been at prolonged economic levels on the Prairies; and
Whereas crop losses and costs of control continue to cause a major financial burden on farmers and ranchers; and

Whereas grasshoppers are generally associated with dry warm conditions which climate modellers predict will escalate; and

Whereas the only dedicated grasshopper research scientist in Agriculture and Agri-Food Canada is leaving the Lethbridge Research Centre.

Recommendation

Therefore be it resolved the Western Committee on Crop Pests (WCCP) recommends, as part of the succession planning for the Integrated Pest Management (IPM) theme, that Agriculture and Agri-Food Canada retain a dedicated grasshopper scientist to develop improved monitoring and control strategies to support provincial programs aimed at reducing the impact of this ongoing major pest.

**WESTERN COMMITTEE ON PLANT DISEASE
28TH ANNUAL MEETING
October 31, 2003
Grand Okanagan Lakefront Resort
Kelowna, British Columbia**

The 28th annual meeting of the Western Committee on Plant Disease was held on October 31, 2003 in Kelowna, BC.

Plant pathologists and personnel interested in plant disease management from all four western provinces attended and represented areas related to agricultural research and extension, and product development and sales. Participants from eastern Canada attended as well. Approximately, 40 individuals participated in this year's annual meeting.

Pierre Beauchamp of the PMRA spoke on the current regulatory status of numerous fungicides, both new and old to the registration system. Pierre provided an update on fungicides that were making their way through the registration system or where requests for emergency registration had been made. He also indicated that efficacy guidelines are under revision.

Several representatives of the pesticide industry gave industry updates.

Scott McDonald of BASF presented an overview including a video on the new fungicide Lance (Endura in USA horticulture crops) also known as Boscalid or BAS510.

Jodi Sadlier of the Gustafson partnership presented updates to the label and formulation for Vitaflo 280 label and indicated that Prosper is now available as a ready-to-apply (RTA) formulation.

Garth Massie from Syngenta indicated that Apron Maxx RTA is under review by PMRA and provided an overview of intended crops and active ingredients.

Karla Bergstrom from AAFRD's Ag-Info Centre provided an outline of the Centre's activities and calls for the 2003 season.

Rob Ormrod, CFIA, BC, provided updates on Chrysanthemum white rust, Eastern filbert blight, Ralstonia (bacterial wilt of geranium), and Sudden Oak Death.

The regular business of the WCPD progressed smoothly with reports provided from various editors and chapter chairs involving CPS publications, meetings, disease situation reports, research status updates, and WCPD Guideline revisions. Discussion typically ensued after each presentation.

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Disease issues of note:

- Powdery mildew in field pea in Saskatchewan and Alberta.
- Fusarium foot rot in lentil in Saskatchewan.
- Dutch elm disease and reports of new areas of infection in Saskatchewan and concern regarding the recent decision to eliminate the Provincial Dutch Elm Disease Prevention Program in Alberta.
- Reports of bronze leaf disease of poplar in southern Manitoba and fears that it may already have spread westward into Saskatchewan and Alberta.
- Black knot disease across western Canada and recent surveys from Alberta.
- The first report of clubroot of canola in Alberta in the fall of 2003.

A number of changes have occurred with the WCPD Executive, Chapter Chairs, and alternates for the 2004 meeting and are outlined as follows:

Chair	Khalid Rashid
Vice-Chair	Penny Pearse
Secretary/Treasurer	Ralph Lange
Guidelines Editor	Mardi Desjardins & Tracy Shinnars-Carnelley
Slide Set Editor	Rhonda Kurtz
Website Editor	Ralph Lange and Dee Ann Benard

Chapter Chairs/Alternates		
Chapter	Chair	Alternate
Cereals	Andy Tekauz	Kelly Turkington
Forage legumes	Sheau-Fang Hwang	David Kaminski
Grasses	Bruce Gossen	Dee Ann Benard
Greenhouse	Prem Kharbanda	Robert Spencer
Mushrooms	Jim Menzies	Danny Rinker
Oilseeds	Randy Kutcher	Khalid Rashid
Ornamentals	Vippen Joshi	Vacant
Trees	Ralph Lange	Karen Bedford
Potatoes	Fouad Daayf	Janice Elmhirst
Special crops	Penny Pearse	Debbie McLaren
Fruits	Phillip Northover	Peter Sholberg
Vegetables	Ron Howard	Kan-Fa Chang
Interiorscapes	Elizabeth Hudgins	Sima Mpfu

The nominations committee moved adoption of these changes, which were accepted.

The Resolutions Committee put forth a resolution thanking the local arrangements committee for their efforts on the 2003 meeting. In addition, The WCPD chair was requested to protest the decision by AAFRD to discontinue the Dutch Elm Disease control program.

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A special topics session was held that highlighted a variety of plant disease issues.

Dr. Janice Elmhirst gave an overview on club root disease and the experiences of BC vegetable growers with this disease.

Vippen Joshi on behalf of L.A. Wegener, and Z.K. Punja, SFU, presented an overview of recent research on blueberry scorch virus (BIScV)

Dr. Peter Scholberg presented an overview on fungicide resistance and management strategies.

The meeting was adjourned on October 31, 2003 towards late afternoon.

On behalf of the Western Committee on Plant Disease
Presented by Kelly Turkington (Chair)

Factors Contributing to Mosquito Development and WNV in Saskatchewan - 2003

Philip Curry - Saskatchewan Health - November 2003
(Presentation to Western Forum – Kelowna, B.C. Nov. 1, 2003)

Saskatchewan Mosquitoes

- 47 species recorded in SK
- Differ markedly in size, abundance, time of year they occur and by region
- Many species have a single generation per year (univoltine), over-wintering in the egg stage
- Several others can have multiple generations if conditions permit (facultative multivoltine) and others are multivoltine with 3-4 generations per year.
- Overwintered females emerge first (*Cx. tarsalis*, *Cs. inornata*, *Ano. earlei*)
- First species that hatch out in the spring are those that breed in shallow temporary water exposed to sunlight (i.e. *O. spencerii*, *O. flavescens*, *O. dorsalis*)
- Woodland and deeper water species come out later (i.e. *O. fitchii*, *O. excrucians*, *O. canadensis*)

Mosquito Distribution

- Different mosquitoes in prairie and forest; a few found in both eco-regions
- Fewer species as one moves north
- Most species in parklands
- Highest numbers in spring with peak in June
- Another peak in summer depending on heat and rainfall

Mosquito trapping

- Three types of traps used
- 150 traps in 58 locations
- Focus is on collections for speciation and live mosquito trapping for virus testing

Disease Vectors

- Some of these carry other “encephalitis” diseases (Western Equine Encephalitis, St. Louis Encephalitis and Cache Valley virus in the prairie region and California Encephalitis in the boreal forest)
- 8 species are known to carry West Nile virus but only four species are common (*Aedes vexans*, *Culex tarsalis*, *Culex restuans*, *Culiseta inornata*)
- ***Culex tarsalis* is most important vector of WNV in the west**

Other Vectors

- *Cx. tarsalis*, *Cx. restuans* and *Cs. inornata* were WNV positive in 2003
- *Cx. restuans* is found in eastern half of SK and prefers mainly bird hosts. Important as an amplification host
- *Cs. inornata* is more common and wide-spread but feeds mainly on mammals (i.e. ground squirrels, cows, horses). This might be an important source of infection in horses late in the season

Virus transmission

Risk to people increases when you have:

1. High levels of virus circulating in birds, mammals and other hosts
2. High proportions of the total number of mosquitoes that are bridging species (i.e. mosquitoes that bite birds and then humans - *Culex tarsalis*)
3. Hot weather (high daily mean temperatures - 2° above average)

High Correlation with Drought

- Outbreaks appear to follow warm winters and spring or summer drought
- In 2003, Saskatchewan, Colorado, Nebraska, North Dakota all have had droughts
- Outbreaks in the 1990s in Russia, Romania and Israel were associated with drought
- Similar with SLE where 11 of 12 of the last outbreaks have followed drought
- Need to look back at other outbreaks

Drought effects (possible reasons)

- Standing water collects in drains and catch basins, stagnating and attracting *Culex* species; populations start to “ramp-up” especially with heat and a little rain
- Sloughs and creeks dry up, reducing frogs, dragonflies and other predators but provide additional habitat for mosquitoes
- Bird hosts are concentrated at remaining sources of clean water; mosquitoes start biting nearby people as birds fledge

***Culex tarsalis* (The “Mother of All Vectors”)**

- Not common last decade; numbers increasing and expanding its range northward
- Prefers birds and mammals
- Not a strong flier; will generally only go 1-3 km depending on availability of a blood meal
- Takes multiple feeds in hot weather
- Multiple generations under ideal conditions, building up to highest numbers in late summer (> 25% of total)
- Over-winter as adult females

Breeding Habitat

- Larval sites – shallow ponds, irrigation, ditches, artificial containers (e.g. bird baths, used tires), hoof prints filled with water; prefers stagnant water with high organic matter levels
- High association with livestock watering areas, irrigation overflow areas – a rural species that can migrate to urban areas
- *Culex* species (i.e. *Culex pipiens*) in the east are more urban (breed in storm sewers, catch basins)

We are Islands in a Sea of Habitat

- *Culex* habitat is quite diffuse and spread out over a large area; many of our farms, villages and towns are truly “islands or oases” in a vast landscape

High Association with Livestock

- Many mosquito species show a high association with livestock and human habitat; *Culex tarsalis* does as well but is also attracted to birds. A particularly bad combination is a farmyard with wetland areas used for watering, house sparrows, crows and magpies, and horses in a pasture; all in close proximity to where people live and work.

High Association with Irrigation

- Back-flood systems appear to be worse than pivot irrigation
- Inadequately maintained drains and poorly drained areas become breeding sites
- Continuous and high levels of water application in times of drought
- Lush plant growth (i.e. alfalfa) provide excellent resting sites for adult mosquitoes

Urban Habitat – Living on the Edge

- Natural areas within towns and cities (parks, natural areas, creeks)
- Edges and suburbs are more of a problem
- Some of the habitat is man-made (poorly engineered or maintained drains, ditches, roads and easements, blocked culverts, catch basins, storm-water retention ponds)
- Container-habitat a problem in late summer (stagnant, ideal temperatures)

Scrap Tires – Ideal Habitat in Mid-Summer

- Research project funded by Saskatchewan Scrap Tire Corporation and Saskatchewan Waste Reduction Council
- Samples taken at 21 locations at tire dealers and recycling plants (July-Aug.)
- Six species found with *Culex restuans* the most numerous, followed by *Culiseta inornata* and *Culex tarsalis*
- Large tractor tires the worst followed by semi-truck tires

Why Did Saskatchewan Have an Outbreak of WNV?

- *Culex tarsalis* was the primary vector “driving” the outbreak in humans
- *Culex tarsalis* is a prairie species that thrives in hot weather and can adapt to a wide range of habitats
- Saskatchewan has more prairie area (and more *Culex tarsalis* habitat) than Manitoba and Alberta and had more area affected by drought in 2003
- *Culex tarsalis* was present in southern areas for longer than in more northerly parkland areas
- There were more WNV “exposure days” in southern areas. Exposure days are where minimum temperatures are > 12° C., wind speeds are < 15 km/hour and there is a lack of generalized precipitation (i.e. a calm, warm summer night)

Table 1: Area in Prairie Ecozone

Prairie Ecozone			
Total area in km² per ecoregion.			
Ecoregion	Saskatchewan	Alberta	Manitoba
Aspen Parkland	81692	59764	35077
Moist Mixed Grassland	67832	31671	NA
Fescue Grassland	NA	14889	NA
Mixed Grassland	86424	47291	NA
Cypress Upland	5020	3271	NA
Lake Manitoba Plain	NA	NA	32805
SW Manitoba Uplands	NA	NA	2128
Total	240968	156886	70010

Correlation with Flyways?

- Saskatchewan, Alberta and Great Plains states are part of the Central Flyway and to a lesser degree, the Mississippi and Pacific Flyways
- Manitoba and Ontario are part of the Mississippi Flyway, which was hard-hit with WNV in 2002
- WNV has been isolated from numerous wild birds (> 160 species)
- Birds are primary amplifier hosts and likely serve as a reservoir
- Migratory bird role in distribution and re-introduction is not well understood
- Correlation of WNV activity in the great plains states and provinces is more to do with habitat of *Culex tarsalis* rather than being a part of the Central Flyway

Testing and Reporting Practices

- 767 human cases (53 West Nile Neurological Syndromes, 704 West Nile Fever, 10 Asymptomatic)
- Most of the human cases in southern “prairie” areas of Sask. with fewer cases in parklands. No cases in north.

	Place	# of human cases (October 23)	Total Deaths
CANADA	Saskatchewan	767 **	6 *
	Alberta	256	0
	Manitoba	138	2
	Ontario	86	2 *
	Quebec	17	0
USA	Colorado	2403	46
	Nebraska	2023	19
	South Dakota	1092	8
	North Dakota	607	4
	Wyoming	356	8

WNV listed as secondary cause of death (SK = 2, ON = 2) ** As of Oct 28

WNF : WNNS Ratios (Oct 15, 2003)

- Sask 12:1
- Colorado 4:1
- South Dakota 5:1
- Alberta 5:1
- Manitoba 2:1
- USA (2003) 3:1
- USA (2002) 1:1
- If testing on 3:1 basis in SK => ~ 208 cases

Factors influencing WNV for 2004

- Temperature
- Rainfall
- Mosquito total counts
- *Culex tarsalis* – proportions
- Mosquito infection rates
- Bird immunity levels
- Public response – personal protection
- Municipal response – IPM programs
- Surveillance – case definitions

Previous WEE outbreaks - Saskatchewan

- Western Equine Encephalomyelitis
 - 1935 – first equine case in SK
 - 1938 – 50,000 equine cases => 15,000 deaths
 - 1941 –> 500 human cases encephalitis
 - -> From P.A. → south
 - -> 44 deaths
 - Every 1-10 yrs – 1 – 75 cases
 - Different level of health care & general health & nutrition 1941 vs. today => not likely

Can we have an outbreak next year?

- Yes. If conditions are similar to this year (hot/wet early; hot/dry later) or if we have a hot summer with frequent rainstorms we could have an outbreak equal to or worse than 2003. A similar situation happened in North Dakota where hot dry conditions in 2002 caused a relatively high level of WNV infection in birds, horses and humans. Similar conditions in 2003 led to an even worse outbreak many more horses and humans infected in North Dakota.

2002 PRAIRIE REGION REPORT TO ECIPM
On Behalf of the Western Forum on Pest Management

T. Kelly Turkington
Research Scientist
Agriculture and Agri-Food Canada
Lacombe Research Centre
Lacombe, AB
(turkingtonk@agr.gc.ca)

2002 Western Forum on Pest Management (WFPM)

The annual meeting of the WFPM and its subgroups, the Western Committee on Crop Pests (WCCP) and the Western Committee on Plant Disease (WCPD) was held in Winnipeg, MB from October 3-5, 2002. It began with a social evening, Thursday, October 3rd, and continued with concurrent sessions of the WCCP and WCPD on Friday, October 4th. The Western Forum on Pest Management met during the morning of October 5th, 2002. During meetings of the WCCP, WCPD, and WFPM an effort was made to have several presentations on topics of interest.

Plant pathologists, entomologists and persons interested in agriculture from all four western provinces attended the WFPM and represented areas related to agricultural research, extension, regulatory issues, and product development and sales. Approximately 89 individuals participated in the WFPM, WCCP, and WCPD annual meetings.

Regular business of the WFPM proceeded smoothly with an update on the financial status of the Forum and reports from the Western Committee on Plant Disease and the Western Committee on Crop Pests. Both Committees declared their respective meetings to be successful and had several pertinent and enlightening presentations from research and industry representatives covering issues of concern to agriculture.

Agenda items discussed by the WFPM included an update on a 2001 resolution to the Pest Management Regulatory Agency (PMRA) that measures are taken to try to gain approval from the PMRA to include provincial extension specialists in the pesticide label drafting process. There was some discussion surrounding the development of a website for the WFPM and a committee was struck to establish this site.

There was discussion of InterProvincial monitoring programs and the support of private industry and government for such activities. It was felt that the private sector should step in where the government has cut back and that any funding applications would have a better chance of success if private sector backing were obtained prior to soliciting public sector funds. It was felt that a variety of sectors could be approached to support such InterProvincial pest monitoring activities. O. Olfert will be contacted regarding federal support of the Tri-Provincial Insect Monitoring Program.

The potential of obtaining Canadian Society of Agronomy accreditation for future WFPM meetings was discussed and it was moved that that the Western Forum attain Canadian Society of Agronomy accreditation for the 2003 WFPM meeting and review the decision at the 2003 Business Meeting.

Major pest problems in the prairie region, discussed by the WCCP included:

Cutworms

Significant levels were observed, especially in Saskatchewan and Alberta where this pest exacerbated existing problems associated with poor crop emergence and establishment.

Wheat stem sawfly

Significant levels of wheat stem sawfly and related damage were observed, especially in Saskatchewan and Alberta.

Lygus bug

Significant outbreaks occurred in Alberta with overwintering populations being high and economic thresholds being exceeded in many fields. However, spraying was not commonly done due to low yield expectations as a result of the drought. Some spraying was reported in Manitoba.

Grasshoppers

Grasshoppers were one of the main problems in Alberta with significant infestations developing throughout the province, especially in the south and central regions. In Saskatchewan grasshoppers became more of an issue for a number of crops including cereals and pulses as temperatures increased into June with economic infestations occurring in crops. In Manitoba grasshoppers were the most significant insect problem faced by cereal producers, but problems were reported for a range of crops.

Major disease concerns discussed by the WCPD included:

Stem rust in cereals

Found at levels in Manitoba and eastern Saskatchewan that have not been observed for many years. If current spring wheat cultivars were susceptible to stem rust infection, a major stem rust epidemic would likely have occurred in southeastern and southcentral MB in 2002. Stem rust also was found on barley at levels that have not been seen since 1990. This was most likely due to infections by pathotype QCCJ, which has again become most prevalent in the *Puccinia graminis* f. sp. *tritici* population. The most significant rust news with the 2002 survey was the alarming increase in stem rust infection on oat. This epidemic was most likely due to pathotype NA67, which is virulent on all commercial Canadian cultivars.

Fusarium wilt in canola

Fusarium wilt was found in Manitoba in 2000 and 2001, but was observed most frequently in 2002, with some fields being severely infested. Most of the fields were located in the western and northwestern regions of the province. In Saskatchewan reports of fusarium wilt in canola were received in early August from the east-central region. It was apparent that there was a relationship to both canola variety and environmental stress. Severe fusarium wilt was identified throughout much of Alberta in 2002. The disease was most severe in the area from Elk Island National Park east to the Saskatchewan border, and south to Camrose. Prior to this year, *Fusarium avenaceum* was most frequently isolated from symptomatic plants, with occasional isolation of *F. oxysporum*. In 2002, *F. oxysporum* was isolated more frequently than *F.*

avenaceum in some surveys. However, there is some concern that more frequent isolation of *F. oxysporum* may reflect an influence of sampling time and weather conditions.

Drought conditions and cool spring conditions

Extremely dry conditions and cool spring temperatures over widespread areas of Saskatchewan and Alberta resulted in numerous reports of poor emergence and establishment problems for a variety of crops. Dry conditions in these areas also limited disease development for a number of crops.

Quality of seed intended for planting in 2003

Poor growing and harvest conditions over large areas of Saskatchewan and Alberta have raised concerns regarding the availability of quality seed for various crops for planting in 2003. Some producers began sourcing seed for the 2003 growing season even before the 2002 harvest was completed.

Featured presentations during the WFPM meeting included:

Dr. Michel Jean, Chief, Environmental Response Division, Canadian Meteorological Centre. Dorval, Quebec - From Nuclear Explosions to Butterflies: Environmental Applications of Meteorological Modelling Tools Explained.

T.C. Shinnars-Carnelley¹, D. McLaren², and B. Elliott¹. ¹Soils and Crops Branch, Manitoba Agriculture and Food; ²Brandon Research Centre, Agriculture and Agri-Food Canada. Potato Pest Management in Manitoba.

Dr. Barry Prentice, Faculty of Agriculture, University of Manitoba - Technological Changes Affecting Container Shipping: Implications for Prairie Grain Industry.

Special topics during the WCPD session included:

Dr. Marcia McMullen, North Dakota State University, Fargo, North Dakota, gave an update on research looking at fungicide management of fusarium head blight in North Dakota.

Drs. Brent McCallum and Tom Fetch, Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, Manitoba, gave an overview of cereal rusts in western Canada.

Dr. Sheau-Fang Hwang, Alberta Research Council, Vegreville, Alberta, presented an overview of the management of pulse crop seed and seedling diseases.

Dr. Tracy Shinnars-Carnelley, Manitoba Agriculture & Food, Carman, Manitoba, provided an update on Manitoba efforts related to potato disease management.

Dr. Jim Menzies, Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, Manitoba, gave an update on the karnal bunt issue in the United States.

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Dr. Jeannie Gilbert, Cereal Research Centre, Agriculture and Agri-Food Canada, Winnipeg, Manitoba, provided an overview of cooperative research looking at cultural management of fusarium head blight.

Dr. Myriam Fernandez, Semiarid Prairie Agricultural Research Centre, Agriculture and Agri-Food Canada, Swift Current, Saskatchewan, presented an overview of crop management factors related to fusarium head blight in eastern Saskatchewan.

Special topics presented during the WCCP meeting included:

Dr. Paul Fields, Agriculture and Agri-Food Canada, Winnipeg, MB - Pests of Stored Grain.

Don Dixon, Manitoba Agriculture and Food, Winnipeg, MB - Pesticides and Bees.

Neil Wagner, Peacock Industries – Grasshopper Control using Bran Baits.

George Bonnefoy, Manitoba Forage Council, Winnipeg, MB - Methods of Pocket Gopher Control.

Dr. Larry Charlet, United States Department of Agriculture, Fargo, North Dakota - Insects Damaging Sunflower Seeds.

2003 WFPM, WCCP, and WCPD meetings

It was decided to hold the 2002 Western Forum meeting on October 31 and November 1, 2003 in Kelowna, British Columbia in conjunction with the Entomological Society of Canada Annual Meeting, the Canadian Forum on Biological Control, and the Agriculture and Agri-Food Canada Biological Control Working Group

The WFPM, WCPD and WCCP executive for 2003

- WFPM: **Dr. Julie Soroka** – Chair; **Lori-Ann Kaminski** - Secretary-Treasurer
- WCPD: **Dr. Kelly Turkington** – Chair; **Dr. Khalid Rashid** – Vice-chair; **Ralph Lange** – secretary
- WCCP: **Hugh Philip** – Chair, Secretary – TBA

Industry Consolidation

Chemical – Bayer Crop Science (Bayer Inc. & Aventis Crop Science Canada)

Staff Changes in the Prairie Region

Manitoba:

Dr. Tracy Shinnars-Carnelley (pathologist) has moved into the Potato Pest Management Specialist position with Manitoba Agriculture and Food, Carman, MB. This position is new.

Dr. Philip Northover has filled the position previously held by Tracy Shinnars-Carnelley, i.e. the Plant Pathologist in the Crop Diversification Section, Manitoba Agriculture and Food, Carman, MB.

Dr. Bruce Murray, an Ag Meteorologist, has been hired at Manitoba Agriculture and Food, Carman, MB.

Saskatchewan:

Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR) have a new IPM Technician position and it has been filled by Jerod Yasinowski. Jerod will be assisting Scott Hartley (Insect Specialist) and Penny Pearse (Plant Pathologist) with pest surveys, preparation of communication materials, and will assist in disease and insect diagnostics at the Crop Protection Laboratory.

Alberta:

Dr. Ieuan Evans (pathologist) from AAFRD Edmonton – retired.

Dr. Jim Holley (pathologist) from AAFRD Brooks – retired.

Dr. Piara Bains (pathologist) from AAFRD Edmonton – retired.

Jim Jones (entomologist) from AAFRD Edmonton – retired.

Dr. Kwesi Ampong-Nyarko, (entomologist) AAFRD Edmonton – reassigned to agronomy

IPM initiatives, recent extension publications, other media, etc.

Canola IPM

The Canola Council of Canada has recently developed a series of IPM factsheets and a sweep net Insect ID card. Copies of this material can be found by going to the Canola Council of Canada website (<http://www.canola-council.org/>), then selecting the Council Publications option, followed by the IPM Fact Sheets & Sweep Net Insect ID Card (English & French) option. The files are available in pdf format.

The Canola Council of Canada has also added a Canola IPM Journal section on its website. The Journal follows nine canola growers as they tell about their own experiences with pest management and highlight the different techniques. The Canola IPM Journal can be found at the Canola Council of Canada website (<http://www.canola-council.org/>), then selecting the Council Publications option and then the Canola Growers Manual option, then the Canola Pests option, followed by the Integrated Pest Management option, and then the IPM Journal option.

Ascochyta blight in chickpeas

Significant outbreaks of ascochyta blight of chickpea have prompted a team of researchers, crop insurance, government extension and industry reps to develop “Guidelines for Disease Scouting and Foliar Fungicide Applications”. This publication is available on the Saskatchewan Agriculture, Food and Rural Revitalization (SAFRR) website at the following address: http://www.agr.gov.sk.ca/docs/crops/integrated_Pest_management/disease/AscochytaFungicides.pdf. SAFRR staff are also in the process of preparing a CD on ascochyta blight of chickpea, with a focus on IPM. For more details contact Penny Pearse, Provincial Plant Disease Specialist SAFRR, Regina, SK, Tel. (306) 787-4671, Email: ppearse@agr.gov.sk.ca.

IPM initiative by SAFRR

SAFRR has a "team" of people, including extension specialists, industry development and policy personnel that are reviewing IPM in Saskatchewan. They will be documenting the use of pesticides in the province, and determining what the adoption and/or understanding of IPM is at the producer level.

Fusarium head blight in Alberta

Continued westward appearance of higher levels of fusarium damaged kernels (FDK) caused by *Fusarium graminearum* coupled with resolutions put forward by various commodity and industry groups in Alberta have prompted Alberta Agriculture, Food and Rural Development (AAFRD) to revise and update their fusarium head blight (FHB) management plan. Currently, symptoms of FHB in the field or FDK in harvested grain are not commonly found in Alberta. In addition, results up to 2001 indicate that *F. graminearum* is not the most common pathogenic fungus associated with FDK or symptoms of FHB in the field. Surveys also indicate that it is not commonly found on cereal and grass residues. The revised plan released by AAFRD defines prevention and control strategies to reduce the risk of *F. graminearum* becoming established in Alberta. The plan provides an integrated approach using strategies that range from the use of clean healthy seed and seed treatment through to prevention of infected feed grain spillage, crop rotation and the avoidance of corn in rotation with small grain cereals. Details regarding the plan can be found at the following AAFRD website: http://www.agric.gov.ab.ca/agdex/100/110_632-3.html.

AAFRD contacts for the plan include: Shafeek Ali, Head, Pest Risk Management Unit Chair, Fusarium Action Committee, AAFRD, Tel: 780 422-4909, Email: shafeek.ali@gov.ab.ca, and James Calpas, Provincial Integrated Pest Management Specialist, Pest Risk Management Unit, AAFRD, Tel: 780 422-4911, Email: james.calpas@gov.ab.ca.

Alberta integrated crop management initiative

Different levels of government are looking at developing an integrated crop management initiative for Alberta, which would have an IPM component. Few details were available at the time of the ECIPM meeting.

Crop diagnostic field schools

Crop diagnostic field schools are typically conducted in each of the prairie provinces by either the provincial or federal governments. Topics range from identification and management of pest issues to the impact of poor fertilization placement. Provincial extension staff can be contacted for more details.

**REPORT TO THE WESTERN FORUM ON REGULATORY ISSUES
CONCERNING QUARANTINE AND BIOCONTROL IN THE ENTOMOLOGY
UNIT OF THE CANADIAN FOOD INSPECTION AGENCY**

The past year was another busy time for the Entomology Unit of the Centre for Plant Quarantine Pests. There were our traditional surveys for apple ermine moth, leopard moth, exotic bark beetles including *Hylurgopinus rufipes*, exotic *Ips*, and pine shoot beetle, dunnage insects, blueberry maggot, apple maggot, european and asian gypsy moths and oriental fruit moth. There were new surveys last year (2002-03) for brown spruce longhorn beetle, leek moth, nun moth, swede midge, and emerald ash borer. The swede midge, *Contarinia nasturtii* (Keiffer) (DIPTERA: Cecidomyiidae) was first found in 2001 in southern Ontario and to date, has been found in several counties. There are regulations concerning the movement of transplants of host material out of the infested areas. The emerald ash borer, *Agrilus planipennis* Fairmaire (COLEOPTERA: Buprestidae) was found in southwestern Ontario (Windsor area, spring 2002) and appears to have been present in Michigan for several years. It has also been recently found in Maryland. The Agency has put in place regulatory measures to limit the movement of ash trees (nursery stock and cut wood), to establish a zone around the infestation to slow the spread of this exotic ash pest. *Anoplophora glabripennis* (Motschulsky) (COLEOPTERA: Cerambycidae), the Starry Sky Beetle, was found in an industrial area of Toronto and Vaughn (Ontario) in September 2003. There is presently quarantine in the infested area and there will be destruction of infested hosts commencing soon. The CFIA is attempting to eradicate this serious pest of maple.

We received approximately 7250 submissions (Apr 02–March 03) of over 10,000 insects, mites and terrestrial molluscs. There is a backlog of unidentified specimens from the annual dunnage survey. We are in the process of trying to hire an expert in larval beetles to help with identification of immatures collected in our dunnage surveys.

We received about 300 permit applications for the importation of living organisms from insect zoos, butterfly houses, schools and universities, biocontrol companies, scientists and other citizens.

The Entomology Unit will now be requesting that biocontrol importers comply with the NAPPO (North American Plant Protection Organization) Standards for entomophagous and phytophagous insects, mites and terrestrial molluscs. Any individual wishing to import and release an exotic organism will be required to submit the information according to the guidelines before the petition is assessed. Submissions that do not follow the NAPPO guidelines will no longer be circulated within the AAFC Biocontrol Review Committee. Incomplete petitions will be returned to the petitioner with advice on how to meet the criteria for submission. Electronic versions of both standards are available on the NAPPO website. Both standards have recently been translated into French and will also appear on the website soon. The Plant Health Division recently (30/09/03) approved the release of *Eretmocerus mundus* (HYMENOPTERA: Aphelinidae). The NAPPO Biocontrol Panel is currently working on a Standard for the Construction and Operation of Quarantine Facilities. This Standard should be ready early in 2004.

The Entomology Unit continues to work closely with the Biological Control Review Committee (Chair: Dr. Peter Mason) of AAFC, the NAPPO Biocontrol Panel and the taxonomists and systematists on the Central Experimental Farm. This assistance (literature, collections,

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identifications, quarantine facility and reviewers) is crucial for the identification and assessment of exotic introductions in Canada.

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**Agriculture and Agri-Food Canada, Research Centre, Ottawa:
2003 Report to Western Forum
Peter Mason**

The reorganization of AAFC has brought a new face to what was called the Biological Resources Program. The Botany, Entomology and Mycology programs in Ottawa have been realigned and are now part of Biodiversity, one of three themes in the Environmental Health National Program. Our Science Director is Dr. Christiane Deslauriers who is located in Charlottetown, PEI. Of the five studies in the **Biodiversity Theme**, three are primarily located at the Research Centre in Ottawa. These are:

- 140.1 **Plant and Microbial Biodiversity** (Study Leader, C.A. Lévesque);
- 140.2 **Invertebrate Biodiversity** (Study Leader, P.G. Mason);
- 140.5 **Biodiversity Information** (Study Leader, G. Baillargeon).

Delivery of taxonomic and associated research (e.g. identification and detection tools) is the mandate of the Plant and Microbial Biodiversity and Invertebrate Biodiversity studies and all of the taxonomists are part of these studies as is the **National Identification Service** (NIS). The Canadian National Collections (Botany, Entomology, Mycology) and the National Mycology Culture Collection continue to be housed at the Research Centre (K.W. Neatby and L.G. Saunders bldgs.). The **National Arthropod Quarantine Facility** is also part of the Invertebrate Biodiversity Study.

In 2003, three insect taxonomists, Dr. Andrew Bennett (Ichneumonidae), Dr. Pat Bouchard (Curculionidae), and Dr. Jeff Skevington (pest Diptera) were hired to strengthen the entomology team. Dr. Don Bright (Scolytidae) retired but is continuing his research as an Honorary Research Associate (HRA). In 2004 a Rust and Smut taxonomist will be hired to strengthen the microbial team. Our team continues to have strong linkages with federal, provincial, university, municipal and other colleagues in Canada. The team is also very well connected worldwide.
