**New text is in red font**

**From: The Canadian Phytopathological Society and Agriculture and Agri-Food Canada**

**To: All Canadian researchers in pest management**

**Re: 2021 PEST MANAGEMENT RESEARCH REPORT - Insect Pests and Plant Diseases**

**- CALL FOR REPORTS**

**- INSTRUCTIONS FOR PUBLISHING RESULTS OF THE 2021 CROP YEAR**

**FOR AUTHORS AND SECTION EDITORS**

One of the objectives of the Pest Management Research Report (PMRR) is to facilitate the exchange of information on Integrated Pest Management (IPM) among persons involved in research and advisory services on IPM of insect pests and plant diseases of importance to the agri-food industry in Canada. To this end, the PMRR is published annually as a compilation of research reports by federal and provincial government, university and industry research and advisory personnel. These reports aid the development of recommendations for insect and disease management programs throughout Canada. They report on all aspects of pest management, including cultivar and management responses, and are available to support the registration of pest control products.

To increase the value of the report, everyone in Canada who is conducting studies involving pest management in agriculture is urged to report their results from 2021 in the format outlined in the attached guide (also available in French). The reports should ideally be 1-2 pages long and may be submitted in either French or English. Authors are requested to ensure they have the registrants’ approval to submit data about their products to a publicly available journal.

Because the Canadian Agricultural Insect Pest Review is no longer published, the PMRR now includes a section – Surveys and Outbreaks: Insects and Mites, to fill the information gap left by the loss of this annual publication. Results of field surveys to assess presence, abundance and distribution of new or established species can be reported in this section in the same format as for other reports in the PMRR. Reports of insect and mite outbreaks should include acreage of crop infested and location(s), control actions taken or product(s) used to minimize crop loss, crop loss assessment where possible, and results of control actions.

The 1995-2020 editions of the PMRR are available for viewing and download at <http://phytopath.ca/publication/pmrr/>.

 Canadian Phytopathological Society/ Société Canadienne de phytopathologie 



**INSTRUCTIONS FOR SUBMITTING RESEARCH REPORTS**

(Aussi disponible en français)

The process for submitting research reports for publication in the 2021 Pest Management Research Report is as follows:

1. Authors:

Prepare the electronic version of your report as outlined in Formatting and Typing Instructions (page 3). Reports must be in Microsoft Word. Please follow the example on page 7. Send an electronic copy or paper copy to the appropriate Section Editor listed on pages 4-6 by **DECEMBER 17, 2021.**

Reports that contain Minor Use AAFC data must have registrant approval. If the report does not contain any AAFC project data it does not need PMC approval or registrant approval. If the report does contain AAFC data it must have the PMC Submission Manager’s approval as well as registrant approval.

2. Editors:

Editors are requested to review content and make sure reports are correctly formatted.

Return the original copy to the author with corrections, if any, by **JANUARY 28, 2022.**

Please prepare a list of papers edited for your section and email it to the compiler.

1. Authors:

Make any corrections as suggested by the Section Editor.

Save each report in a separate file with naming as follows:

FILENAME: first letter - Section; next three letters - first 3 letters of crop; next 3 letters - first 3 letters of author surname; last - # of submission (if you sent in three, they would be 1, 2 and 3). For a file name example see the report on page 7 with the filename LONIMCD1.

Email the final, revised report by the deadline of **FEBRUARY 11, 2022** to the compiler at [aafc.pmcinfo-clainfo.aac@agr.gc.ca](mailto:aafc.pmcinfo-clainfo.aac@agr.gc.ca)

**Please indicate in your email confirmation of the registrants’ approval if necessary.**

Authors should also return a revised copy of their report to the respective section editor.

**To help with the online search of an individual report from the 2021 PMRR, a summary page of the report in HTML with major headings and keywords will be published as part of the PDF report. Authors are to provide a major heading and up to three key words for their report. Include this information in the email when you submit your report.**

The Compiler/Format Editor will collate, index and format edited reports to produce one complete document. Authors, editors, federal, provincial, university and industry representatives, libraries and users on the mailing list will receive notification of its publication on the Internet. It will be available for viewing and downloading as a PDF file from the Canadian Phytopathological Society web site at <http://phytopath.ca/publication/pmrr/>.

It may be requested as an email copy. Users are invited to print or copy and distribute the information freely among colleagues.

**PMRR FORMATTING INSTRUCTIONS**

(Disponible en français)

Please follow the instructions to facilitate compilation.

FORMAT IN WORD

Page: **Size [8.5" x 11"]**

**Margins [all 1" - left, right, top, bottom]**

Text: **Justification [Left]**

**Line spacing [1]**

**Font [Times New Roman, 11 pt]**

**Paragraph: Justification [Left]**

**No blank line between paragraphs**

**HEADING:** ALL UPPERCASE and BOLD

**2021 PMR REPORT # xx** (assigned by compiler) **SECTION A: FRUIT - Insect Pests**

[blank line]

**CROP**: Text follows on the same line after tab

**PEST:** Text follows on the same line after tab

[blank line]

**NAME AND AGENCY:** on a line by itself

AUTHOR(S) SURNAME followed by initials in UPPERCASE, *e.g*. HILL B D and CHANG C

Affiliation, full address, postal code

[blank line]

**Tel:** (xxx) xxx-xxxx[2 Tabs ] **Fax:** (xxx) xxx-xxxx [2 Tabs ] **E-mail:** [labaja@agr.gc.ca](mailto:labaja@agr.gc.ca)

[blank line]

**TITLE:** [INDENT] **EFFECTS OF PYRIDABEN ON RED MITES**

[blank line]

**MATERIALS:** [2 spaces on same line] PRODUCT TRADE NAMES IN UPPERCASE; common names in lowercase. For biocontrol, add *Species Name* Authority (Order:Family*). If no materials were used, such as in the case of tillage or cultivar response type work, leave blank.*

[blank line]

**METHODS:** [2 spaces] Follow example starting on page 8. *Latin names in italics.*

[blank line]

**RESULTS:** [2 spaces] Data are presented in Table 1 (or Tables 1-2, or Figure 1, etc.). **Only include a reference to the tables/figures in this section.** Tables follow text. [blank line]

**CONCLUSIONS:** [2 spaces] Summarize conclusions.

[blank line]

**REFERENCES: [2 spaces] This section is optional. If available, include the online hyperlink.**

**[blank line]**

**ACKNOWLEDGEMENTS: [2 spaces] This section is optional.**

**[blank line]**

**Table 1.** Title of table not in bold. **PLEASE USE THE TABLE FEATURE** and style as shown, using Borders/fill.

**Tables must be in portrait orientation**.

Use decimal tab to align all decimals within your table(s) or left/right align if appropriate. Do not use spaces. DO NOT use underline to input tables or divide text.

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| --- | --- | --- | --- |
| **2020 – EDITORS** | | |  |
| **ENTOMOLOGY** - **Sections A – G** | | |  |
| **A** | **FRUIT/FRUITS**  **Insect/Mites of Tree Fruits and Berry Crops** | **Jennifer Allen Ph.D**  Agriculture and Agri-Food Canada Pest Management Centre  Room 420 4321 Still Creek Drive Burnaby, BC V5C 6S7 | Email: [jennifer.allen2@agr.gc.ca](mailto:jennifer.allen2@agr.gc.ca)  Tel: (604) 292-5884 |
| **B** | **VEGETABLES**  **and SPECIAL CROPS**  - Insect Pests | **Jennifer Allen Ph.D**  Agriculture and Agri-Food Canada Pest Management Centre  Room 420 4321 Still Creek Drive Burnaby, BC V5C 6S7 | Email: [jennifer.allen2@agr.gc.ca](mailto:jennifer.allen2@agr.gc.ca)  Tel: (604) 292-5884 |
| **C** | **POTATOES**  - Insect Pests | **Christine Noronha**  Agriculture and Agri-Food Canada  Environmental Health  440 University Ave.  PO Box 1210 Charlottetown PE C1A 7M8 | Email: [christine.noronha@agr.gc.ca](mailto:christine.noronha@canada.ca)  Tel: (902) 370-1374 |
| **D** | **MEDICAL and VETERINARY**  - Insect Pests | **Ryan Spafford M.Sc.** | Email: [ryan.spafford@gmail.com](mailto:ryan.spafford@gmail.com)  Tel: (416) 949-1436 |
| **E** | **CEREALS, FORAGE CROPS**  **and** **OILSEEDS**  - Insect Pests | **Dr. Tyler Wist**  Agriculture and Agri-Food Canada  Saskatoon Research Centre  107 Science Place  Saskatoon, SK S7N 0X2 | Email: [tyler.wist@agr.gc.ca](mailto:tyler.wist@agr.gc.ca)  Tel: (306) 385-9379 |
| **F** | **ORNAMENTALS**  **and GREENHOUSE**  - Insect Pests | **Roselyne Labbé**  Agriculture and Agri-Food Canada  Harrow Research and Development Centre  2585 County Road 20  Harrow, ON N0R 1G0 | Email: [roselyne.labbe@agr.gc.ca](mailto:roselyne.labbe@agr.gc.ca)  Tel: (519) 738-1234 |

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| **G** | **BASIC STUDIES** | **Jennifer Allen Ph.D**  Agriculture and Agri-Food Canada Pest Management Centre  Room 420 4321 Still Creek Drive Burnaby, BC V5C 6S7 | Email: [jennifer.allen2@agr.gc.ca](mailto:jennifer.allen2@agr.gc.ca)  Tel: (604) 292-5884 |
| **H** | **PEST MANAGEMENT METHODS – BIOLOGICAL CONTROL**  **- Insects, Mites, Nematodes**  **- Insect Pheromones**  **and Natural Products**  **- Other Methods** | **Shai Ben-Shalom**  Agriculture and Agri-Food Canada Pest Management Centre  960 Carling Avenue, Bldg. 57  Ottawa, ON K1A 0C6 | Email: [shai.ben-shalom@agr.gc.ca](mailto:shai.ben-shalom@agr.gc.ca)  Tel: (613) 694-2456 |
| **I** | **SURVEYS AND OUTBREAKS**  **- insect and mites** | **Robert Johns**  Natural Resources Canada  Atlantic Forestry Centre  1350 Regent Street  Fredericton, NB E3B 5P7 | Email: [rob.johns@canada.ca](mailto:rob.johns@canada.ca)  Tel: (506) 452-3785 |
| **J** | **NEMATODES** | **Dr. Qing Yu**  Agriculture and Agri-Food Canada  Environmental Health  K.W. Neatby Building Floor 3, Room 3022 960 Carling Ave. Ottawa, ON K1A 0C6 | Email: [qing.yu@agr.gc.ca](mailto:qing.yu@agr.gc.ca)  Tel: (613) 759-1768 |
| **PLANT PATHOLOGY - Sections K – P** | | | |
| **K** | **FRUIT -**  **Diseases** | **Dr. Siva Sabaratnam**  BC Ministry of Agriculture Food and Fisheries  Abbotsford Agricultural Centre  1767 Angus Campbell Road  Abbotsford, BC V3G 2M3 | Email: [siva.sabaratnam@gov.bc.ca](mailto:siva.sabaratnam@gov.bc.ca)  Tel: (604) 556-3029 |
| **L** | **VEGETABLES and** **SPECIAL CROPS - Diseases** | **Geneviève Marchand**  Floor 1, Room R116  2585 COUNTY ROAD 20  Harrow ON N0R 1G0 | Email: [genevieve.marchand2@agr.gc.ca](mailto:genevieve.marchand2@agr.gc.ca)  Tel: (519) 738-1231 |

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| --- | --- | --- | --- |
| **M** | **FIELD LEGUMES - Diseases** (Beans, peas) | **Owen Wally**  Agriculture and Agri-Food Canada  Harrow Research and Development Centre  2585 COUNTY RD 20 HARROW ON N0R 1G0 | Email: [owen.wally@agr.gc.ca](mailto:owen.wally@agr.gc.ca)  Tel: (519) 738-1293 |
| **N** | **POTATOES - Diseases** | **Dr. Vikram Bisht**  Manitoba Agriculture  65 3rd Avenue NE, P.O. Box 1149  Carman, MB R0G 0J0 | Email: [vikram.bisht@gov.mb.ca](mailto:vikram.bisht@gov.mb.ca) Tel: (204) 745-0260 |
| **O** | **CEREALS, FORAGE CROPS** **and OILSEEDS - Diseases** | **Linda Jewell**  Agriculture and Agri-Food Canada  St. John’s Research and Development Centre  308 Brookfield Rd,  St. John’s, NL A1E 0B2 | Email: [linda.jewell@agr.gc.ca](mailto:linda.jewell@agr.gc.ca) Tel: (709) 793-3173 |
|  |  |  |  |
| **P** | **SMUT - Diseases** | **Dr. Jim G. Menzies**  Agriculture and Agri-Food Canada  101 ROUTE 100  Morden MB R6M 1Y5 | Email: [jim.menzies@agr.gc.ca](mailto:jim.menzies@agr.gc.ca)  Tel: (204) 822-7522 |
|  | | | |
| **Q** | **GREENHOUSE CROPS, ORNAMENTALS,** **and TURF - Diseases** | **Dr. Janice Elmhirst**  Elmhirst Diagnostics & Research 5727 Riverside St.  Abbotsford, BC V4X 1T6 | Email: [janice.elmhirst@shaw.ca](mailto:Janice.elmhirst@shaw.ca)  Tel: (604) 820-4075 |
| **R** | **BIOLOGICAL CONTROL** | **Michael Harding**  Crop Diversification Centre South  301 Horticultural Station Rd. E.  Brooks, AB T1R 1E6 | Email: [michael.harding@gov.ab.ca](mailto:michael.harding@gov.ab.ca)  Tel: (403) 362-1338 |
| **S**  **T** | **CHEMICAL RESIDUES**  **POLLINATORS**  **- Pest control**  **- Pathogen control**  **- Pesticide impacts on bee**  **health** | **Pawel Czechura**  Agriculture and Agri-Food Canada Pest Management Centre  960 Carling Avenue, Bldg. 57  Ottawa, ON K1A 0C6  **Stephen Pernal**  Agriculture and Agri-Food Canada  Administration Building  100038 Township Road 720  PO Box 29, County of grande prairie, AB T0H 0C0 | Email: [pawel.czechura@agr.gc.ca](mailto:pawel.czechura@agr.gc.ca)  Tel: (613) 715-5212  Email:  [steve.pernal@agr.gc.ca](mailto:steve.pernal@agr.gc.ca)  Tel: (780) 354-5135 |

**PMRR on the Web**

The **1995-2020 Pest Management Research Reports** are available for viewing or downloading at <http://phytopath.ca/publication/pmrr/>

**EXAMPLE: FILENAME;** Lonimcd1

**2000 PMR REPORT # 45 SECTION L: VEGETABLE and SPECIAL CROPS - Diseases**

**CROP:** Yellow cooking onions (*Allium cepa* L.), cv. Fortress

**PEST:** White Rot, *Sclerotium cepivorum* (Berk)

**NAME AND AGENCY:**

MCDONALD M R and VANDER KOOI K

Muck Crops Research Station

HRIO, Dept. of Plant Agriculture

University of Guelph

1125 Woodchoppers Lane, RR#1

Kettleby, ON L0G 1J0

**Tel:** (905) 775-3783 **Fax:** (905) 775- 4546 **Email:** mrmcdona@uoguelph.ca

**TITLE: FIELD EVALUATION OF BOTRAN 75 W DRENCH FOR THE CONTROL OF ONION WHITE ROT, 2000**

**MATERIALS:**  BOTRAN 75 W (dicloran 75%), FOLICUR (tebuconazole 38.7%)

**METHODS:** Two field trials were conducted in organic soil naturally infested with white rot in commercial onion fields in the Bradford marsh in 2000. At both sites, plots were designed within areas the growers had experienced a problem with white rot the previous time onions were grown in that field. A randomized complete block arrangement with 4 blocks per treatment was used. Each replicate consisted of 4 rows spaced (site 1) and 5 rows spaced (site 2), 3 m in length. Both sites were seeded with 33 seeds/meter. BOTRAN was applied as a plant-based drench. BOTRAN was applied at three different timings. The treatments were a) 4 and 7 true leaf stage, b) 4, 7 and 10 true leaf stage and c) 7 true leaf stage. All treatments were applied at 3.67 kg/ha in 2000 L/ha of water at each application. FOLICUR (1.0 kg/ha in 2000 L/ha of water) was applied at the 7 true leaf stage and used as the standard treatment. 30 August (site 2). A scale of 1 to 10 was used to assess severity: 1 = mycelium covering 1-2 cm of onion bulb, 5 = 4-5 cm of bulb covered, 10 = covers basal half of bulb with mycelium. The air temperatures were above the long term (10 year) average for May (13.6°C), below average for June (17.5 C), July (18.7 C) and August (18.7 C) and average for September (14.5 C). Total rainfall was above the long term (10 year) average for May (160.3 mm), June (173.4 mm), and August (75.7 mm), below average for September (79.8 mm) and average for July (86.4 mm). Data were analyzed using the General Analysis of Variance function of the Linear Models section of Statistix V.4.1. Means separation was obtained using Fisher’s Protected LSD test at P< 0.05 level of significance.

**RESULTS:** As outlined in Tables 1 and 2.

**CONCLUSIONS:** Significant differences were observed among the treatments in site 1. All BOTRAN treatments significantly reduced the incidence of onion white rot at site 1 compared to the check. The full rate of BOTRAN (11.0 kg/ha) had significantly lower white rot than the FOLICUR. The full rate also had the lowest severity rating at site 1. At site 2 the BOTRAN applied at one-third the full rate had the lowest incidence of onion white rot although, overall, there was no significant difference in the incidence or severity of the disease among treatments. Although sufficient rain fell throughout the season for white rot development, due it the timing of the last application (8-10 true leaves) the BOTRAN may not have all penetrated into the soil. Rainfall after application may have benefited the treatments.

**Table 1.** Field evaluation of BOTRAN 75 W for white rot control as a band application, 2000 (Site 1).

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Number of Applications | Incidence of White Rot % | Severity Rating1 |
| Check | 0 | 48.3 a2 | 4.4 ns 3 |
| FOLICUR @ 1.0 kg/ha | 1 | 43.0 bc | 4.8 |
| BOTRAN @ 3.67 kg/ha | 1 | 36.8 ab | 3.6 |
| BOTRAN @ 3.67 kg/ha | 2 | 38.3 ab | 3.2 |
| BOTRAN @ 3.67 kg/ha | 3 | 34.0 a | 3.2 |

1 1 = mycelium covering 1-2 cm of onion bulb, 5 = 4-5 cm of bulb covered, 10 = covers basal half of bulb with mycelium

2 Numbers in a column followed by the same letter are not significantly different at *P* = 0.05, Fisher’s Protected LSD Test.

3 ns = No significant differences (*P*< 0.05, Fisher’s Protected LSD Test) were found among the treatments.

**Table 2.** Field evaluation of BOTRAN 75 W for white rot control as a band application, 2000 (Site 2).

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Number of Applications | Incidence of White Rot % | Severity Rating 1 |
| Check | 0 | 10.4 ns2 | 4.6 ns |
| FOLICUR @ 1.0 kg/ha | 1 | 8.6 | 4.2 |
| BOTRAN @ 3.67 kg/ha | 1 | 8.0 | 4.2 |
| BOTRAN @ 3.67 kg/ha | 2 | 9.2 | 4.8 |
| BOTRAN @ 3.67 kg/ha | 3 | 8.8 | 6.0 |

1 1 = mycelium covering 1-2 cm of onion bulb, 5 = 4-5 cm of bulb covered, 10 = covers basal half of bulb with mycelium

2 ns = No significant differences (*P<* 0.05, Fisher’s Protected LSD Test) were found among the treatments.