AGRICULTURAL SERVICE BOARD POLICY MANUAL – Reviewed October 27, 2021

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M.D. OF FAIRVIEW # 136 – AGRICULTURAL SERVICE BOARD

INTRODUCTION

The Board re-evaluated its priorities and objectives in the fall of 1993. With the funding shortfalls and budget cutbacks expected in 1994, the Board felt that a fundamental restructuring of the Board was required. Therefore, in November the ASB held "Kitchen Meetings" throughout the Municipality to discuss with ratepayers the role and programs of the ASB. These meetings and other rounds of kitchen meetings have helped to lay down the foundation for the Agricultural Service Board in the coming years. The ASB programs and budgets are the result of this process.

In the spring of 2001, the ASB reviewed its goals and objectives under the strategic plan and amended the strategic plan to reflect the changing needs of the Municipality's producers. The ASB Policy Manual is periodically updated when required.

SITUATION

Agricultural Base:

In 2013, the MD of Fairview currently has 331,958 acres under production with this land base being made up of 292 farm units. These farm units vary from large grain/oilseed farms to purebred and commercial cattle operations. Land utilization illustrates this diverse agriculture base as seen in Table 1.

Table 1: Land Utilization

Cereal Grain Canola Field Peas Forage Seed	263,840 ac
Improved Pasture	35,680 ac
Native Pasture	47,040 ac
Waste Areas	4,800 ac
Yard Sites	6,104 ac

Note: Numbers may not add to the total farmed acres due to confidentiality of some commodities.

Plant Industry:

Forages play an important role in the agricultural production of the MD. Legume and grass crops are used for livestock feed, forage seed and as a management tool in local Soil and Water Conservation. Market development for the Municipality's forage crops are a major priority for some producers.

The production of Canola is vital to the cash flow of the Municipality's producers. For this reason, Canola accounts for half of the annual crop acres every year. Virulent Blackleg of Canola was found in the Municipality in 1994 and was followed up with an intensive inspection, enforcement and awareness program that was successful in

controlling the spread of the disease. Since then, Clubroot has spread in Alberta and our M.D. had awareness meetings and informational literature distributed throughout. Fall field inspections are also done annually for Clubroot.

The Municipality is responsible for weed control on all roadsides and Municipal property within its boundaries. Weed inspection is carried out on private land in the MD with the emphasis on new and restricted weeds. Canada Thistle, Perennial Sow Thistle and Toadflax represent the majority of weed problems. Scentless Chamomile sites have also been found and dealt with. The two Hamlets are also inspected.

Animal Industry:

Cattle production in the MD has decreased in recent years due to low prices which occurred due to the BSE outbreak. Recent surveys have shown a dramatic decrease in the number of breeding animals being retained by local producers. The forecast over the next couple of years, due to increases in markets and prices, should show increases. The cattle spend the grazing season on approximately 35,680 acres of improved pasture and 47,040 acres of unimproved pasture and native range. Pasture and hay land make up roughly a quarter of the farmable land in the MD.

Extension Services:

There is one very active producer group operating in the MD presently, Peace Country Beef and Forage Association (PCBFA).

PCBFA operates in an area stretching from Bear Canyon on the Alberta-B.C. border to High Prairie and areas between. The group's full-time manager and its members conduct a variety of forage and beef related activities ranging from production and conservation projects, marketing and management seminars and research plot trials. They also execute the Environmental Stream for several municipalities including the M.D. of Fairview.

In December of 2003, the Fairview Applied Research Association (FARA) ceased activity within the Municipality. In 2005, that business transitioned and became Peace Agriculture Research and Demonstration, (PARDA), in 2006. PARDA was a creator and accumulator of credible and valuable information through research, extension and demonstration. They did provide beneficial information to the farming community but had ceased activity in 2013. PCBFA have been operating since then to the present.

Agro-Climatic Factors:

Moderate winter snowfalls in the MD coupled with rapid spring thaws have the potential for causing serious erosion damage to cultivated land. Large tracts of sloping land along the Peace River are of prime concern for this reason. Although rainfall during the growing season is comparable to some of the more arid areas of the province, the relatively low heat units found in the MD tend to moderate the effects of drought during dry periods.

KEY PRIORITY AREAS AND GOALS

The Agricultural Service Board's three key priorities have the following goals:

a) Weed Control:

Goal: To maximize the production potential of farmland within the Municipality by controlling the introduction, establishment and spread of weeds detrimental to agricultural production.

Goal: To increase the public's understanding of the role of pesticides in the production of safe and healthy food products.

b) Environmentally Sustainable Agriculture

Goal: To reduce the loss of productive farmland and topsoil due to wind and water erosion.

Goal: To promote better water management practices to increase the quantity and quality of available water sources.

Goal: To promote the use of farming practices that contributes to better soil and water quality.

Goal: To increase public awareness of environmentally sustainable farming techniques and practices with PCBFA administering this on our behalf.

c) Agricultural Development

Goal: To maximize the productive capability of the farmland in the Municipality by controlling the introduction, establishment and spread of agricultural pests as stated in the *Agricultural Pests Act.*

Goal: To promote the development of a sustainable farming community.

Goal: To promote the development of a sustainable agriculture industry by supporting the demonstration of sustainable farming techniques.

Goal: To promote a positive image of the local agriculture industry in the Municipality 's rural and urban communities.

STRATEGIC ACTION PLAN

The Agricultural Service Board has the intention to plan and provide programming based on the needs of the farming ratepayers within the Municipality. The ASB will encourage all ratepayers to participate in and provide input into all activities undertaken by the Board. Ratepayers will be provided with information, results and benefits derived from the Board's resources.

The following objectives and respective programs have been developed in order to meet the goals of weed control, environmentally sustainable agriculture and agricultural development as set out by the ASB, M.D. of Fairview #136.

a) Weed Control

Regulatory Objectives:

Weed inspection shall be carried out as per ASB policy and procedure as stipulated in the ASB policy manual and the Weed Control Act.

Owners and occupants of problem quarters shall be advised of the type of weed problem and every effort made to work cooperatively with those parties to rectify the problem.

Weeds new to the area and new weed infestations shall be given priority for inspection purposes.

Extension Objectives:

ASB staff shall inform ratepayers of any new weed problems in the Municipality.

ASB staff shall assist ratepayers to find extension resources necessary to solve present or potential weed problems.

The ASB will attempt to provide ratepayers with new weed control information by means of the media, newsletters, field tours and on-farm calls.

Roadside Weed Control Objectives:

Weed problems on municipal roadways and properties shall be controlled by spraying, mowing or hand picking.

Public awareness in the use of pesticides for roadside vegetation management will be promoted through newspaper articles and newsletters.

b) Environmentally Sustainable Agriculture

Soil Erosion Objectives:

Soil erosion problems in the municipality shall be identified and documented, and the landowners contacted to formulate an appropriate plan to rectify the problem.

Water Conservation Objectives:

Water management practices that enhance water conservation and utilization shall be demonstrated through on-farm demonstrations, and Producer Group projects.

Extension Services:

Financial, technical, and in-kind support shall be given to PCBFA for the purpose of promoting environmentally sustainable agricultural practices.

c) Agricultural Development

Agricultural Pest Objectives:

Inspection and extension will be provided to ratepayers experiencing problems with predation of livestock. Control devices will be distributed under the supervision of the Ag Fieldman.

Inspection and extension will be provided to ratepayers to prevent the introduction and spread of various pests within the Municipality.

Inspection and extension will be provided to ratepayers to prevent the establishment and spread of any agricultural pest posing a threat to agricultural production.

Development Objectives:

Rental equipment shall be available to ratepayers in order to promote the development of improved farming practices.

Promotion Objectives:

A positive image of agriculture shall be promoted through the M.D., and extension groups and/or workshops that are to be held throughout the year.

EVALUATION

The goals and objectives of the Agricultural Service Board shall be reviewed annually. Programs will be evaluated by way of feedback from ASB meetings, events, and tours.

POLICY – ADMINISTRATION

Sec. 1) Budget

a. Policy — Budgeting and fund allocation will be done in such a manner as to address the needs of the various programs supported by the Agricultural Service Board.

b. Procedure

1. The ASB will review and evaluate annually during the December meeting all programs and policies in effect and any new recommendations to determine programs to be implemented in the next budget year.
2. The ASB will prioritize all programs in relation to the budget.
3. The Agricultural Fieldman will prepare a draft budget for the ASB to review prior to January 15th.
4. The ASB will review and adopt the final budget for Council's consideration.

Sec. 2) Board Meetings

a. Policy — Work in accordance with the Agricultural Service Board Act.

b. Procedures

1. Work in accordance with the ASB Act.
2. Hold a joint meeting with MD Council and to call special meetings should the need arise to discuss issues of mutual concern.
3. Hold regular meetings as required. The Agricultural Fieldman and the ASB chairman will be responsible for setting the date and time for meetings.
4. Members shall bring their policy manual to all ASB meetings.
5. The Agricultural Fieldman makes reports for Council to review at every Council meeting.

Sec. 3) **Duties & Responsibilities**

a. Policy — The duties of the Agricultural Service Board and the representative for Alberta Agriculture and Forestry, (AAF), shall be in accordance with the Agricultural Service Board Act.

b. Procedure — The duties of the Agricultural Fieldman shall be in accordance with the Agricultural Service Board Act and MD of Fairview Municipal Employee Policy.

Sec. 4) **Per Diem & Expenses**

a. Policy — The per diem and expense schedule established by Council is to be paid to Board Members who attend to duties as authorized representatives of the ASB. Per Diem and expenses shall be paid to ASB members who attend seminars/workshops with prior approval by the ASB. Attendees shall report highlights of the workshops or conferences attended, to the ASB for possible publication to producers.

b. Procedure — A statement showing the per diem and mileage allowances to be paid to Board members shall be presented to the ASB members.

Sec. 5) **Funding Requests**

a. Policy — Organizations requesting ASB funding shall have their requests reviewed by the ASB and may be funded if the proposal falls within the mandate of the ASB and if funds are available within the ASB budget.

b. Procedure

1. Written documentation must be presented on the following:
   - Cost/benefit to ratepayers and the submitting organization.
   - Amount and share from ASB being requested.
   - Duration of the project.
   - Provide a report to the ASB**.**

2. Should the ASB feel that a proposal for which funds are being requested is of merit but is either outside the ASB mandate or insufficient funds are available, the Board may recommend the funding proposal to Council for their deliberation.

Sec. 6) Agricultural Fieldman Calendar

a. Policy The Agricultural Fieldman shall use as a guideline of an approved Agricultural Fieldman Calendar as established by the ASB.

Sec. 7) FARM FAMILY POLICY

a. Policy To support agricultural families in the Municipal District of Fairview #136 through recognition with Farm Family Awards.

b. Procedure The MD supports the agricultural sector of the municipality and recognizes the contribution our farm families make in the community in the following ways.

1. The ASB representative will budget expenses required to sponsor a farm family and an ASB member who may attend the Provincial ceremonies. The nominated farm family will be recognized as the M.D. of Fairview Farm Family at the ceremony and banquet.

2. The ASB will award the M.D. of Fairview farm family based on the Provincial Farm Family Award Program guidelines.

3. Current Council members, ASB members, and employees of the M.D. of Fairview #136 can **NOT** be nominated for the Farm Family award, whether full time or part time employed.

Sec. 8) ASB EQUIPMENT PLUG-IN POLICY

a. Policy To compensate M.D. of Fairview ratepayers for the use of power used in winter by equipment when equipment is away from the M.D. yard.

b. Procedure The MD recognizes that there is a cost to our ratepayers for the use of power when plugging in ASB heavy equipment left in their yards overnight and feel the need to compensate them in the following way.

1. When ASB equipment is left at ratepayers' yards and plugged in with their permission, the MD ASB will compensate those producers at a rate of $20.00 per day per unit. The Ag Fieldman shall submit an A/P payment request form in a timely fashion after the equipment has departed that premise.

POLICY- SOIL AND WATER CONSERVATION

Sec. 1) Environmentally Sustainable Agriculture Programs

a. Policy — The ASB will promote the adoption of sustainable agriculture practices, outlined in the Soil Conservation Act**,** by supporting the efforts and activities of the Environmental Stream administered by PCBFA.

b. Procedure

1. The Agricultural Fieldman shall assist PCBFA with the planning, coordinating, and implementing of the municipality's programs as time permits.

2. The Wetland Policy of Alberta shall be implemented as required by law.

3. Extension groups approved by the ASB will apply for government funding for all Environmental projects. This funding shall be used to offset association expenses and project costs.

4. Extension groups shall be allowed to store equipment in the MD compound at no charge but shall be responsible for insurance on that equipment unless otherwise approved by the ASB. MD equipment shall have priority over association equipment should space become limited or should groups dissolve.

Sec. 2) Agricultural Field Tours

a. Policy — The ASB shall help promote environmentally sustainable agriculture practices by means of helping with tours with PCBFA.

b. Procedure

1. In cooperation with PCBFA, we will help select possible sites to tour.

2. Help secure sponsorship from industry partners to offset costs when required.

POLICY – VEGETATION MANAGEMENT

Sec. 1) Noxious & Prohibited Noxious Weed Control – Programming

a. Policy The ASB shall develop and implement programs that will prevent the establishment and spread of noxious and eradicate prohibited noxious weeds as per the Weed Control Act. They will control and eliminate infestations of existing weed problems and prevent the spread of identified new weeds within the M.D. and when possible encompassed urban centers.

b. Procedure 1. Establish a continuing awareness campaign through such things as farm calls, kitchen meetings, tours, newsletters and local media resources.

2. Hire and train enough weed inspectors to conduct weed inspections and aid in carrying out enforcement as required in accordance with the Weed Control Act.

3. ASB staff will conduct weed inspection and carry out enforcement as required in accordance with the Weed Control Act.

4. The Agricultural Fieldman shall coordinate all vegetation management programs (brushing, mowing and the application of pesticides) in such a manner so as each component compliments the other program components.

5. The vegetation management program shall be reviewed and amended as required on an annual basis.

Sec. 2) Noxious Weed Control - Enforcement

a. Policy The Agricultural Fieldman/weed inspector will enforce the Weed Control Act. The ASB will provide guidance and support to the Agricultural Fieldman**.**

b. Procedure 1. Inspections are conducted in a timely manner to identify new problems that have developed over the growing season.

2. Owners of Subdivided land, 20 acres or less in size, and urban lots within the Hamlets of Bluesky and Whitelaw containing uncontrolled weeds shall be given notice to rectify the problem as per the Weed Control Act.

3. Where a problem exists, a weed inspection report is prepared and the occupant, which is defined in the Weed

Control Act as a person occupying or exercising control or having the right to occupy or exercise control over land, is verbally contacted to discuss options to remedy the weed problem.

All contact with the occupant must be recorded in the weed inspection report and consist of time and date of contact plus what was discussed.

If no contact can be established during the first attempt, the weed inspector needs to attempt to contact the occupant a second time.

If after all reasonable efforts to contact the occupant have been unsuccessful, a letter regarding the weed problem will be sent to the occupant with a copy being forwarded to the landowner.

Should, in the year following the issuance of a letter, the landowner/occupant fail to follow the recommendations stipulated in the letter, a weed notice will be issued to the landowner/occupant for the control of the identified weed problem.

Weed inspection reports are to include a written report, a picture of the site including time and date taken, the legal land location and the identified weed problem.

4. The weed problem will be identified, and a control program developed with the occupant. If the weed problem is not rectified, a weed notice as set out by the Weed Control Act shall be issued. The notice will outline recommendations for the occupant to utilize as well as a deadline.

5. Farm calls will be made to assist occupants in developing a viable weed control program.

6. Quarters with outstanding notices will be re-inspected prior to June 15th by the Agricultural Fieldman. The owner/occupant will be informed of the inspection time and requested to attend.

7. In failure of compliance by the landowner/occupant and or lessee, the Fieldman will proceed with enforcement procedures pursuant to the Weed Control Act. This action will be taken after notification to the Agricultural Service Board and Council.

8. In the event that the occupant does not comply with the notice, the Agricultural Fieldman will take action and arrange for enforcement work to proceed. The Municipal Secretary will invoice the owner for the cost of control work. If not paid within 30 days, the Municipal Secretary shall cause the amount owing to be placed on the tax roll.

9. Enforcement work shall be carried out as directed in the Notice and in accordance with the Weed Control Act.

Sec. 3) **Prohibited Noxious Weed Control-Enforcement**

a. Policy — The Agricultural Fieldman/weed inspector will enforce the Weed Control Act. The ASB will provide guidance and support to the Agricultural Fieldman**.**

b. Procedure

1. Inspections are conducted in a timely manner to identify new problems that have developed over the growing season.

2. Where a Prohibited Noxious Weed Problem has been identified, the Agricultural Fieldman will issue a "Notice to Remedy Weed Problem", with a copy to the Municipal Secretary.

3. In failure of compliance as outlined on the "Notice to Remedy Weed Problem" by the landowner/occupant, the Agricultural Fieldman will proceed with enforcement procedures pursuant to the Weed Control Act. This action will be taken after notification to the Agricultural Service Board and Council.

4. The Agricultural Fieldman will act and arrange for enforcement work to proceed. The Municipal Secretary will invoice the owner for the cost of control work. If not paid within 30 days, the Municipal Secretary shall cause the amount owing to be placed on the tax roll.

5. Enforcement work shall be carried out as directed in the Notice and in accordance with the Weed Control Act.

Sec. 4) Noxious & Prohibited Noxious Weed Control – Roadside Spraying

a. Policy The ASB shall control noxious and Prohibited Noxious weeds and brush along Municipal right-of-ways.

b. Procedure

1. All municipal roads shall be sprayed as part of a two-year rotation using a short-term residual broadleaf herbicide for control of noxious weeds. All prohibited noxious weeds will be eradicated through a combination of hand picking and pesticide application.

2. Problem areas as designated by the Agricultural Fieldman shall be sprayed annually or as required.

3. Brush spraying will take place where brush is less than 3 meters in height. Brush higher than this shall be either mulched, cut and piled or mowed, depending on the size and density of the brush.

4. Only selective herbicides registered for use on right-of-ways shall be used in the vegetation management program.

5. Spraying shall be followed up the following year by mowing as required to remove dead brush residue.

6. No spraying shall take place adjacent to hedges, shelterbelts, dugouts or environmentally sensitive areas, and yard sites unless authorized by the owner of the site.

7. Ratepayers shall be notified by newspaper/website prior to the start of the spraying program each year.

8. Ratepayers may request that no spraying be conducted adjacent to their property by signing a written waiver in person at the Municipal office. Ratepayers shall assume the responsibility for control measures on adjoining roadside where they have requested no spraying.

Sec. 5) Sale of Pesticides

a. Policy The ASB will not offer for sale any pesticides to ratepayers due to environmental regulations as stipulated in the Environmental Protection and Enhancement Act.

Sec. 6) **Roadside Seeding**

a. Policy — The ASB shall reseed any Municipal right-of-ways that have been built, rebuilt or had erosion scars repaired, in order to reduce further erosion and the introduction of weeds. Contractors must warranty their work for one year and all seed mixtures must be made up of desired species specified by our municipality.

b. Procedure

1. Seed species and varieties shall be left to the discretion of the Agricultural Fieldman to choose the combination that is best suited for the given site to be reclaimed. Seed mixture recommendations are based on area standards.

2. Certified or Common #1 seed will be used and shall be purchased from local Peace River region sources.

3. Sweet Clover, restricted and noxious weed seeds are not to be included in seeding mixes.

4. A certificate of seed analysis must be provided to the Agricultural Fieldman prior to the seed mixture being used.

Sec. 7) **Seed Cleaning Plant Inspections**

a. Policy — The Agricultural Fieldman shall inspect those seed cleaning plants within the Municipality that custom clean seed for ratepayers in order to protect against the spread of weeds due to faulty practices, design and maintenance of the plants.

b. Procedure

1. The Agricultural Fieldman shall, without prior notice, annually inspect for licensing each custom seed cleaning plant operating within the Municipality.

2. Cleaned samples of seed shall be collected and analyzed for weed seed content only.

3. A license shall be issued in accordance with the Weed Control Act.

4. The ASB shall receive a copy of the inspection results and the final grade given to each plant.

Sec. 8) **Roadside Mowing**

a. Policy Municipal roadsides shall be mowed (15 feet, +/-) for the purpose of safety and road maintenance and increased widths will be done where required.

b. Procedure 1. The priority for roadside mowing shall be as follows:

i) Areas known as Dell Hill and Henry's Hill
ii) Road west of Fairview to airport and airport area
iii) Hamlets of Bluesky and Whitelaw and their lagoons
iv) All other municipal roads

2. Intersections of priority roads that have visibility problems due to the growth of sweet clover will be mowed back 50 meters from the intersection where possible.
3. The Hamlets of Bluesky and Whitelaw will have municipal property mowed at least once per year when the large mower is in the area. The Parks crew will mow regularly.
4. Roadside mowing shall be coordinated with roadside spraying to ensure the effective use of the spraying budget. Roadside mowing will begin in the area that is not designated to be sprayed in any given year.
5. Airport grass will be kept mowed to an acceptable height for the safe operation and maintenance of the facility.

Sec. 9) **Brushing Policy**

Purpose of Policy:

To set out a policy for the M.D. for a time when brushing will be done on developed and undeveloped road allowances.

Procedure: The Municipal District will only do brushing on developed and undeveloped road allowances, when in the opinion of the Municipality, the work is needed to improve the condition of the road for safety reasons or where it is needed because of snow-plowing or road construction reasons.

. Priorities of brushing required will be decided between the Superintendent of Public Works & Ag Fieldman.

If someone wishes to brush a road allowance, they must first receive permission from the Superintendent of Public Works or Ag Fieldman.

POLICY – AGRICULTURAL DEVELOPMENT & EXTENSION

Sec. 1) ASB Rental Equipment

a. Policy — In cooperation with Clear Hills County and the M.D. of Peace #135, the ASB shall provide and maintain rental equipment deemed necessary to assist in the development of the agriculture industry within the Municipality.

b. Procedure

1. Equipment shall be rented to people on a first come first serve basis.
2. A list will be kept of all bookings including the date first requested, length of time required, name and phone number.
3. Renters will provide the personnel and equipment required to haul and operate equipment.
4. Renters must sign a rental agreement form and waiver and leave damage deposits only on specified equipment before picking up equipment.
5. Renter will pick up and return equipment during business hours. All rental equipment must be cleaned or washed of debris. A $100.00 cleaning fee will be applied if not.
6. Equipment shall be returned to the designated location in the M.D. yard.
7. All rental equipment shall be inspected prior to being rented out again to ensure proper maintenance.
8. Damage shall be noted on the rental form at the time of return and acknowledged by the renter.
9. Damage shall be assessed whether due to normal wear or negligence. Damage due to negligence shall be charged to the renter.
10. The maximum time rental equipment will be let out is five days unless approved by the Agricultural Fieldman.
11. Rental equipment is not to be used for custom operations; anyone found doing so will be charged the current industrial lease rate for that type of equipment.

Sec. 2) Veterinary Services Inc. (VSI) – Funding Policy

a. Policy — The M.D. of Fairview #136 shall support Veterinary Services Incorporated (1980) Ltd. to a level that is both agriculturally and financially sustainable.

b. Procedure

1. The ASB will, during budget deliberations, recommend to Council the level of support it feels V.S.I. warrants.

2. The Municipality will forward a cheque to VSI for the full amount requisitioned for the year.

3. At the end of the year, the Agricultural Fieldman shall calculate the percentage of use that was incurred by each VSI member if required.

   The difference between the level of funding approved and the amount requisitioned shall be charged back to VSI members based on their percentage of use. (Please note example i. on following page)

4. The Municipality may waive the funding difference if administration feels that the cost of collection will exceed the amount in question.

5. The amount owed the MD by the VSI members shall be entered into the Municipality's accounts as an account receivable for the year in which it was incurred.

6. Any VSI member refusing to pay the billed amount will lose his privileges under VSI until such time as his account is paid in full.

7. Applicants must be ratepayers with agricultural lands within the M.D.

8. Husband and wife are only permitted to hold one card between them.

9. This policy and procedure shall be supported by a by-law of council.

Example i.

- VSI Requisition for MD of XYZ $30,000
- VSI Funding Approved by MD of XYZ $25,000

- MD advances a cheque to VSI for $25,000 and at the end of the year; VSI claims for the MD are $30,000
- MD Funding difference for VSI - $5,000

Farmer "X" had VSI claims totaling $3000 and farmer "Y" had VSI claims totaling $300

Farmer "X" had 10% of VSI claims
Farmer "Y" had 1% of VSI claims

Therefore: Farmer "X" shall pay 10% of $5000 = $500
Farmer "Y" shall pay 1% of $5000 = $50

Sec. 3) Beaver Control

a. Policy The ASB shall be responsible for controlling beaver problems on Municipal right-of-ways only.

b. Procedure 1. After freeze-up each year, the Agricultural Fieldman shall obtain a list of problem beaver dams from Public Works.

With the assistance of the Public Works department, beaver dams shall be removed using a staged release using a backhoe or other suitable machinery. In the event that the mechanical release is unsuccessful, a licensed explosive technician shall be contracted to remove the problem dam. This removal shall be in accordance with the Department of Fisheries and Oceans.

2. The Agricultural Fieldman shall through shooting or trapping dispose of other problem beavers after the dams have been removed.

3. Ratepayers experiencing beaver problems will be encouraged to work with local Fish & Wildlife officers to solve these problems.

Sec. 4) **Predator Control Program**

a. Policy The problem of livestock predation shall be addressed through extension and the distribution of control devices in a manner that is both agriculturally and environmentally sustainable.

b. Procedure 1. Ratepayers requiring assistance with a livestock predation problem shall contact the Agricultural Fieldman.

2. Upon receiving the complaint, the Ag Fieldman shall instruct the producer to secure any carcass or remains, if possible. The Ag Fieldman will, as soon as possible, investigate the complaint to ensure that the death loss was caused by predation and not another health problem.

3. If the loss was the result of predation, the Ag Fieldman may then issue up to a maximum of six 1080 pellets (Monosodium fluoracetate). The Ag Fieldman shall assist the producer in preparing and placing the baits when necessary.

If further losses should take place at a later date, the Ag Fieldman may issue additional 1080 pellets (up to a total maximum of 6) to the producer to use on his own.

4. If in conducting his initial investigation, the Ag Fieldman determines that poor management was a contributing factor in the predation problem, he shall make recommendations to the producer on management changes that would reduce the chances of further predation.

If the producer chooses to ignore recommendations and continue in his present management practices, the Ag Fieldman shall reserve the right to refuse further assistance by not distributing 1080 pellets.

5. The Form 7, Permit to Use Control Material, is to be issued for a specific time period as determined by the Ag Fieldman (15 days) but to a maximum of 30 days. All

unused pellets must be returned to the Ag Fieldman by the expiry date stipulated on the Form 7.

6. 1080 pellets are to be issued for coyote control. Potential predation due to wolves needs to be reported to the local Fish and Wildlife Department.

Sec 5) **Virulent Blackleg of Canola**

OBJECTIVE:
To provide direction for the Peace Region to reduce the impact of Virulent Blackleg of Canola

PURPOSE:

Establish a minimum standard in the Peace Region municipal program and policies for dealing with Virulent Blackleg of Canola

DEFINITIONS:

For the purposes of this Guideline, the following definitions shall apply:

a. Agricultural Township – an area as defined by Alberta Township System (ATS), that contains a field currently in agricultural production.
b. Agricultural Pest Act - the Agricultural Pest Act of Alberta (R.S.A. 2000, Chapter A-8) and the Agricultural Pest Regulation (184/2001).
c. Field – a plot of land capable of growing a crop susceptible to Virulent Blackleg.
d. Municipal Policy – policy established by each of the Peace Region Municipalities.
e. Pest Inspector – Agricultural Fieldman or Pest inspector employed by the Municipality.
f. Reported Field - any field for which a complaint is received as having any symptoms or signs of Virulent Blackleg of Canola.

AUTHORITY:

Virulent Blackleg of Canola is a pest under the Agricultural Pests Act of Alberta.
The Agricultural Pests Act requires the municipality to "take active measures to prevent the establishment of, or control or destroy pests in the municipality" (Sec. 6)
The municipality shall appoint Pest Inspector(s) under the Act who are authorized to

- enter onto land and inspect for pests; and may
- issue notices specifying measures required to control the pest or prevent the pest from establishing.

GUIDELINES:

1. Each Municipality shall have a Virulent Blackleg of Canola Policy in place.
2. Inspectors will inspect a minimum of 1 field per every agricultural township for Virulent Blackleg of Canola in the Municipality each year. An attempt will be made to ensure the canola fields inspected are spread as equally as possible throughout the Municipality.
3. Priorities for inspected fields may include:
    i) Symptoms are observed through other inspections (i.e. weed inspections).
    ii) The possibility that infected seed was utilized (i.e. seed was imported from outside the Peace Region).
    iii) Canola grown in short rotation, especially if grown in succession.
    iv) Reported Fields.

AWARENESS:

The stakeholders will have access to information as the Region will:

1. Maintain information as handouts and annually print information in various media.
2. Inform municipally based Seed Outlets of Municipal Policy and concerns. Request that seed preferably of a more tolerant variety be utilized.
3. Have Regional Agricultural Service Board members act as ambassadors to inform producers and industry about Virulent Blackleg of Canola.
4. Advocate that all seed (of a host crop) should be of a more tolerant variety.
5. Advocate longer rotations between host crops.
6. Inform all Peace Region Agricultural Fieldmen when Virulent Blackleg of Canola is confirmed within a municipality.

ENFORCEMENT:

Since Virulent Blackleg of Canola can potentially be found within the boundaries of any Peace Region municipality, landowners will be encouraged to adopt the following measures:

1. Harvest canola crops with the total crop being sold or fed, but not sold or kept for seed.
2. Tarp any loads being transported.
3. Clean any crop residue and soil from all equipment and implements before moving from fields known to be infested to prevent spread.

Since Virulent Blackleg of Canola can potentially be found within the boundaries of any Peace Region municipality, the Municipality should consider adopting the following measures:

A Notice should be issued when a situation becomes unabated and the inspection results are averaging more than 3 on the Blackleg rating scale. If the Pest Inspector issues a notice it should contain the following,

i. Seed a non-host crop and /or perform summer-fallow, for 3 or more consecutive years from initial infestation.
ii. Clean any crop residue from all equipment and implements before taking them off the infested land.
iii. For the 3 or more consecutive crop years from initial detection, the Field is to be inspected annually by the Pest Inspector.
iv. Following the expiry of the Pest Notice, the landowner may return to a tolerant variety of host crop.
v. If an infected field is re-seeded to a host crop during the three following crop years of the initial detection, the crop will be destroyed as per the Agricultural Pest Act.

Sec 6) **Clubroot of Canola**

OBJECTIVE:

To provide direction for the Peace Region to reduce the impact of Clubroot of Canola

PURPOSE:

Establishing a minimum standard in the Peace Region municipal programs and policies in dealing with Clubroot of Canola

DEFINITIONS:

For the purposes of this Guideline, the following definitions shall apply:

g. Agricultural Township – an area as defined by Alberta Township System, that contains a field currently in agricultural production.
h. *Agricultural Pest Act* - the *Agricultural Pest Act of Alberta* (R.S.A. 2000, Chapter A-8) and the *Agricultural Pest Regulation* (184/2001).
i. Field – a plot of land capable of growing a crop susceptible to Clubroot.
j. Municipal Policy – policy established by each of the Peace Region Municipalities.
k. Pest Inspector – Agricultural Fieldman or Pest inspector employed by the Municipality.
l. Reported Field - any field for which a complaint is received as having any symptoms or signs of Clubroot of Canola.

AUTHORITY:

Clubroot of Canola is a pest under the Agricultural Pests Act of Alberta.
The Agricultural Pests Act requires the municipality to "take active measures to prevent the establishment of, or control or destroy pests in the municipality" (Sec. 6)
The municipality shall appoint Pest Inspector(s) under the Act who are authorized to

- enter onto land and inspect for pests; and may
- issue notice specifying measures required to control the pest or prevent the pest from establishing.

GUIDELINES:

4. Each Municipality shall have a Clubroot Policy and a Foreign Equipment Cleaning Policy (or section within the Clubroot Policy) in place.
5. Inspectors will inspect a minimum of 1 field per every agricultural township for Clubroot of Canola in the Municipality each year. An attempt will be made to ensure the canola fields inspected are spread as equally as possible throughout the Municipality.
6. Priorities for inspected fields may include:
    v) Symptoms are noticed through other inspections (i.e. weed inspections)
    vi) The possibility that infected equipment was utilized (i.e. equipment was imported from outside the Peace Region)
    vii) Canola grown in short rotation, especially if grown in succession
    viii) Reported Fields

AWARENESS:

The stakeholders will have access to information as the Region will:

7. Maintain information handouts and annually print information in various media.
8. Inform municipally based construction and earth moving companies of Municipal Policy and concerns and request that local equipment be used.
9. Have Regional Agricultural Service Board members act as ambassadors to inform producers and industry on Clubroot of Canola.
10. Advocate that all seed (of a host crop) should be of a resistant variety and this should become mandatory when the disease has been found in the immediate area.
11. Advocate longer rotations between host crops.
12. Inform all Peace Region Agricultural Fieldmen when Clubroot is confirmed within a municipality.

ENFORCEMENT:

When Clubroot of Canola is found within the boundaries of any Peace Region municipality, the landowner will be encouraged to adopt the following measures:

1. Harvest the crop with the total crop being sold or fed, but not sold or kept for seed.
2. Store future seed and crop on site until ground is less prone to contaminate vehicles, i.e. frozen or dry ground.
3. Tarp any loads being transported from the infested land.
4. Clean any crop residue and soil from all equipment and implements before taking if off the infested land (*following the Alberta Clubroot Management Plan)*.
5. Seed an area to grass around field approaches so equipment and vehicles can be parked and cleaned while minimizing contamination.

When Clubroot of Canola is found within the boundaries of any Peace Region municipality, the Municipality should consider adopting the following measures:

1. The Pest Inspector shall ensure that the operating producer follows the Alberta Clubroot Management Plan and Municipal Policy
2. The Pest Inspector shall issue a Notice that should contain the following,

    1. Seed a non-host crop and /or perform summer-fallow, for 3 or more consecutive years from initial infestation.
    2. Store the crop on site until it can be removed from the field while minimizing contamination of other areas (i.e. moving the crop while the ground is frozen).
    3. Clean any crop residue and sterilize (*following the Alberta Clubroot Management Plan)* all equipment and implements before taking them off the infested land.
    4. For the 3 or more consecutive crop years from initial detection, the Field is to be inspected annually by the Pest Inspector.
    5. Following the expiry of the Pest Notice, the landowner may return to a Clubroot tolerant variety of canola.
    6. If an infected field is re-seeded to a host crop prior to the expiry of the Pest Notice, the crop will be destroyed as per the Agricultural Pest Act.
    7. Seed an area to grass around field approaches so equipment and vehicles can be parked and cleaned while minimizing contamination.

Sec 7) **Fusarium Graminearum**

OBJECTIVE:

- To provide information and awareness to M.D. producers of the impact of *Fusarium graminearum* in cereal crops.

- To provide budgeted funding through the Ag Service Board to the Fairview Cooperative Seed Cleaning Plant for testing two cereal samples per M.D. of Fairview producer for Fusarium graminearum.

- Although *Fusarium graminearum* has been taken off the Agriculture Pest Act, weed inspectors during normal field inspections may notice diseases such as *Fusarium Graminearum* and may notify the owner/renter, for their information.

Alberta Fusarium Management Plan

Classification: Public

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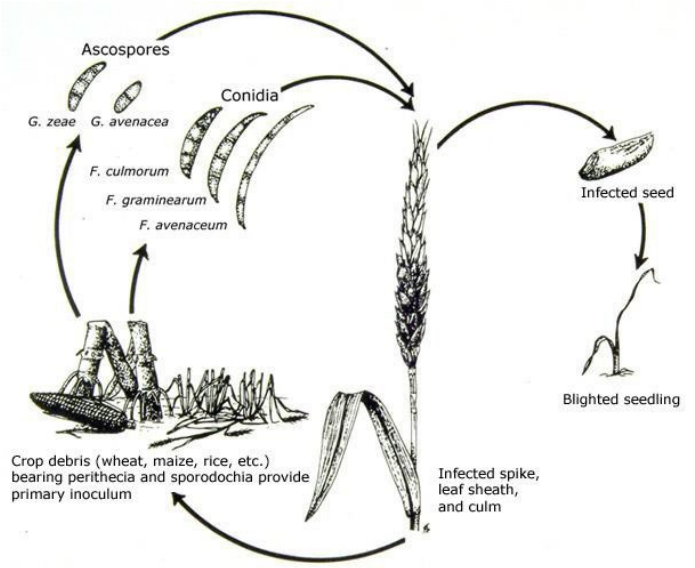
Fusarium Head Blight Overview

Introduction

Cereal crops, including wheat, barley, oats, rye, triticale, and corn can be infected by *Fusarium* species that cause seedling blights, root rots, crown rot and head blight (FHB). Several *Fusarium* species can cause head blight, but most head blight infections on the prairies are caused by *Fusarium graminearum,* although depending on year and location, other *Fusarium* spp. may be more dominant. *F. graminearum* is typically more damaging in terms of downgrading due to the presence of Fusarium-damaged kernels and contamination of grain with mycotoxins such as deoxynivalenol. This is why most of our risk assessment, testing and management is aimed at *F. graminearum*.

Disease cycle



Source: https://www.apsnet.org/edcenter/disandpath/fungalasco/pdlessons/Pages/Fusarium.aspx

Fusarium species that cause FHB can spread long distances on infected seed and short distances by wind-blown spores. Risk factors for the establishment of FHB include widespread planting of highly susceptible varieties, existence of colonized residue from previous crops (especially with short rotations), presence of corn in rotations with small grains, and weather favourable for infection. As a result, using seed where *F. graminearum* is not detected in the samples tested, resistant varieties, extended rotations, etc., can help prevent introduction and further buildup of the pathogen. Once a pathogen like *F. graminearum* is established in the crop

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residues, it will readily overwinter, surviving for one to three years. Where it is established, the occurrence of head blight will be largely impacted by weather and to some extent by agronomic practices, and less impacted by infected seed.

FHB causes problems in two ways: first, it reduces yield and grade by producing fusarium-damaged kernels (FDK), and secondly, it can have a significant negative effect on the quality of and functional characteristics of grain intended for the feed, malting, milling, biofuel (ethanol) and brewing industries. Infected kernels may contain fungal toxins (mycotoxins), such as deoxynivalenol (DON or vomitoxin), that are poisonous to livestock and humans above certain threshold levels. Furthermore, FDK may produce poor quality malt and flour, and can reduce alcohol yields during fermentation. Yield losses are due to lightweight kernels, but the greatest economic loss can be due to downgrading.

> The long distance spread of wind-borne ascospores is improbable. Dispersal of ascospores occurs over relatively short distances. Ascospore survival is significantly reduced after exposure to natural UV radiation from the sun. Long distance spread could potentially occur via movement of infested residues attached to various types of equipment that are routinely used in farm fields. Erosion of soil containing bits of Fusarium-infected crop residues may also be a method of dispersal, but would be less important compared with infected grain, straw or stalks, or significant amounts of infested soil and/or stubble on tillage equipment.

In Canada, downgrading due to FHB results from the presence of FDKs. Annual statistics on Fusarium damage in wheat are reported by the Canadian Grain Commission (CGC): https://www.grainscanada.gc.ca/en/grain-research/export-quality/cereals/wheat/western/annual-fusarium-damage/

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Losses in Canada have ranged from $50 million to $300 million annually since the early 1990s. Direct and secondary economic losses due to FHB for all crops in the Northern Great Plains and central USA were estimated to be $2.7 billion from 1998 to 2000 alone.

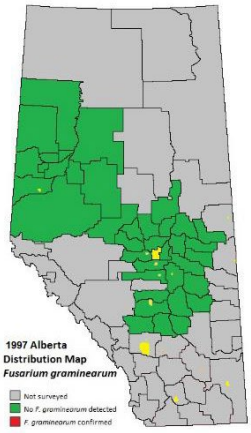
In 2018, an economic assessment projected that the main farm-level economic impact is from the lower grade values. “With 0.5% disease severity, the total revenue loss from reduced yield and downgrade to grade #2 is about $12 per acre. When the wheat is downgraded further to grade #3 or feed wheat, the economic impact increases significantly to $35 and $101 per acre, respectively.”

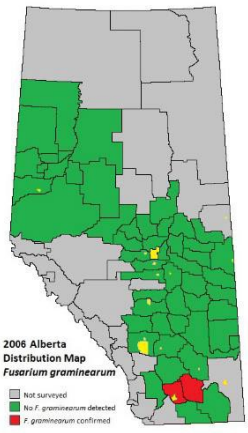
> “We’re dealing with one of the most insidious plant diseases in Canada, a double-barreled problem that hits the grain industry with a one-two punch of yield and quality losses in the field, and contaminates grain with mycotoxins that render it unfit for both human food and livestock feed.”
>
> *Dr. Gordon Dorrell - Agriculture and Agri-Food Canada*

The Economic cost of Fusarium: Farm-level and regional economic impact of Fusarium in Alberta (2018) is available at:

https://open.alberta.ca/publications/economic-cost-of-fusarium-farm-level-and-regional-economic-impact-of-fusarium-in-alberta-2018

FHB and *F. graminearum* having been increasing in incidence and severity in Alberta. Surveys for *F. graminearum* show that is has become more common across the province between 2010 and 2020. The increase in FHB has resulted in increased grade reductions due to the presence of FDKs (CGC 2019; 2021).





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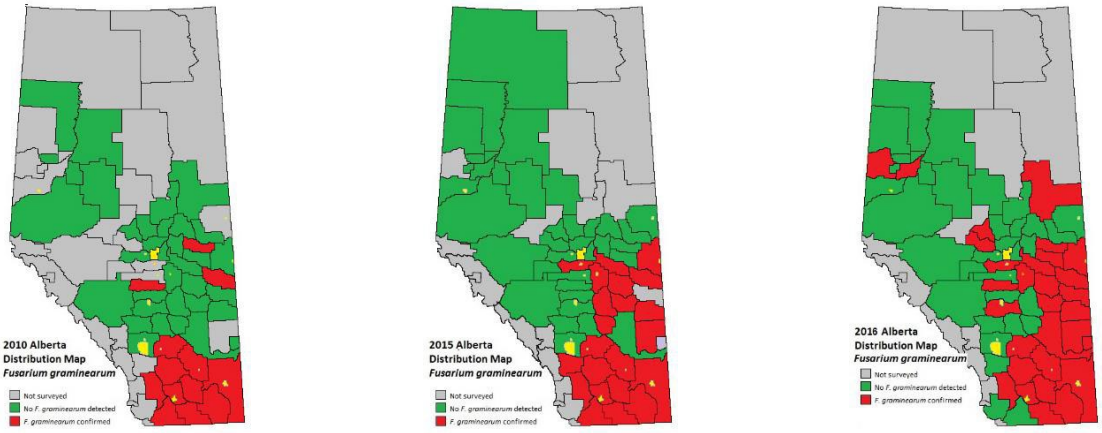

Courtesy of Dr. Mike Harding, AAF Brooks

Note that by 2009, the CGC was finding FDK levels of concern in southern AB where the FDKs were due to *F. graminearum*. For additional resources to see trends in FDK incidence and severity across the Prairies:

CGC 2019. Fusarium head blight in Canadian wheat, maps and charts 2011 to 2016. Canadian Grain Commission, Winnipeg, MB. 2019-02-28. Online: https://grainscanada.gc.ca/en/grain-research/export-quality/cereals/wheat/western/annual-fusarium-damage/maps-charts/.

CGC 2021. Frequency and severity of Fusarium damaged kernels (FDK) in Harvest Sample Program red spring wheat samples. Canadian Grain Commission, Winnipeg, MB. 2021-01-09. Online: https://www.grainscanada.gc.ca/en/grain-research/export-quality/cereals/wheat/western/annual-fusarium-damage/canada-western-red-spring/.

Alberta Fusarium Head Blight Management Plan Objective

Limit the escalation, spread and economic impact of Fusarium Head Blight pathogens in Alberta

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Dealing with FHB Requires a Two-pronged Approach

Managing FHB	Preventing the spread of FHB
Crop rotation	
Genetic resistance	
Seed testing	
Scouting, monitoring and risk assessment	
Seed treatment	
Fungicides (seed treatment and foliar)	Fusarium-free seed
Seeding rate and irrigation management	Regulation
	Field hygiene

Crop rotation

Continuous or short rotation cereals or corn allow for a buildup of FHB on infested residues. Corn is also a host of FHB pathogens, where it causes seed rots, seedling blight, root rot, stalk rot and ear rot. Leave at least two years between host crops (e.g., all small grain cereals, corn).

Genetic resistance

Grow varieties with the best available levels of resistance; however, this practice will not completely eliminate the risk of FHB. Although moderately resistant varieties will experience reduced impacts from FHB, they can still be affected by FHB, especially with favourable weather conditions and if ample amounts of infected spores are present. Consult annual variety guides for more information on specific varietal differences in genetic resistance to FHB.

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Scouting, monitoring and risk assessment

Visual scouting remains a relatively low-cost method for evaluating whether FHB is present. In areas where FHB is less prevalent or fields where it has not been found previously, early detection can aid in rapid response and control strategies.

Surveillance, whether on-farm or as part of coordinated disease surveys, is part of an education process that factors into disease management. Coordinated surveys with collected data from across a region or the province can provide information on distribution and spread, as well as allow comparisons over time. Landowners allowing surveillance on their land plays a key role in widespread education on plant pests.

The control of volunteer cereals and grassy weeds on infested land can also help reduce hosts for FHB.

Fungicides

When an elevated risk of FHB is suspected, growers should consider the use of a well-timed fungicide application for FHB management. Consult the current edition of The Alberta Blue Book (Crop Protection Manual), for more details.

Seeding and irrigation management

Increase seeding rates to promote a more uniform stand, reduced tillering and a shorter flowering period for the crop. This approach helps reduce the period the crop is flowering, which is the growth stage most at risk for infection. Moreover, more uniform flowering of plants may help improve fungicide performance because most, if not all, of the crop will be at the key growth stage for application.

Stagger planting dates between fields if possible, to avoid having all cereals on the farm flowering synchronously and potentially being exposed to weather conducive to disease development at the same time. Humid weather during flowering (anthesis) in wheat or heading in barley favours infection.

Producers growing small grain cereals under irrigation may be able to reduce the risk of head and seed infection by careful water management. Irrigation should be limited for 5 to10 days as the crop is entering the flowering stage to help prevent humid conditions that favour infection. Excessive irrigation during the flowering period can greatly increase the risk of FHB and resulting yield losses, grade reduction and mycotoxin contamination. In addition, it is recommended that producers consider increased seeding rates, which helps to reduce tiller formation and shorten the flowering period for the entire crop, thereby limiting the time that irrigation should be reduced.

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Fusarium-free seed

Always use healthy seed with no detectable levels of *F. graminearum* to avoid introducing the pathogen into your production area. Request a seed health report that shows testing results specifically for *F. graminearum*. Organic producers should test multiple random samples from a seed lot to ensure that the seed is non-detectable for *F. graminearum*.

The presence of a virulent pathogen in sufficient quantity, a susceptible host and a favourable environment are requirements for the development of disease.

Seed treating and using seed which is preferably *Fusarium*-free should be highlighted to reduce the risk of spread from field to field. In areas where FHB is not well established, has not been detected in your area, or has not been found on your farm, be especially careful with seed choices.

Risk of infected seed introducing *F. graminearum*	**High risk**	**Transitioning risk**	**Low risk**
Has your or a neighbour's wheat been downgraded due to fusarium damaged kernels?	**No**	**By a grade (e.g. CWRS #1 to a #2)**	**By more than a grade (e.g. #1 to #3)**
Has *F. graminearum* been reported in your area	**No to infrequently for more than four years**	**Up to 20% of the fields over the last two to four years**	**Routinely reported in >20% of the fields on an annual basis**
Has *F. graminearum* been isolated from your or a neighbour's seed/grain	**No to <1% seed infection for at least four years or more**	**Routinely find ~1% seed infection over the last two to four years**	**>1% seed infection found routinely**

Courtesy of Dr. Kelly Turkington, AAFC Lacombe

Growers should also check for local bylaws on *Fusarium graminearum* that could impact the purchase, movement, and propagation of seed containing this pathogen.

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Seed testing

F. graminearum is a seed-borne pathogen and infected seed, along with infested crop residues such as straw, represent the greatest risks of introducing or spreading *F. graminearum*. Testing is available for FHB pathogens on seed through seed labs and represents an important tool for FHB management. Also pay attention to germination test results along with fungal screen results. In areas where *F. graminearum* is well-established on crop residues, producers may want to avoid seed with elevated levels of *F. graminearum* that will reduce germination.

Fusarium graminearum DNA test

The DNA test uses Polymerase Chain Reaction (PCR) techniques in order to detect *F. graminearum* in seed. Twenty grams of seed are collected and broken down mechanically and chemically until there is only DNA remaining. Once the DNA is extracted, it is amplified through the PCR process to detect if any *F. graminearum* is present in the seed sample.

The advantage of the DNA test is its sensitivity; not only can the DNA test detect low levels of systemic infection, but it can also detect surface level contamination that may have resulted from late season infection. The DNA test is ideal for areas where *F. graminearum* is not known to be present and can be used as an early warning system. Conversely, a disadvantage to the DNA test – and where the plate test may be more appropriate – is that the results are only reported as "detected/not detected." If you are in an area with a known history of *Fusarium*, it is recommended to get the plate test in order to determine the percent of seed that is infected. A plate test is recommended to follow up a positive DNA result in order to determine what percentage of seed is infected and choose a management plan accordingly.

Fusarium graminearum plate test

The basis of the plate test is the ability to grow the pathogen from seeds, if it is present. The seeds are surface sterilized with bleach, allowed to dry, and then 200 seeds are placed onto a fungal growth medium (Potato Dextrose Agar). These plates are placed under 75 per cent white light and 25 per cent UV light in an incubator operating at 22 degrees Celsius. The lights stimulate the fungi to produce spores and the temperature is conducive for the widest range of fungi to grow. After five to seven days of incubation the plates are analyzed for the growth of *F. graminearum.* While colonies of *F. graminearum* are generally distinct from other *Fusarium* species, they can closely resemble colonies of *Fusarium culmorum* or *Fusarium pseudograminearum* (or other *Fusarium* species rarely observed). To confirm the identity of the *Fusarium* colony, microscope slides of the spores are prepared to differentiate *F. graminearum* from those similar species, because while the colonies are similar, the spores show distinct differences between species.

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The advantage of the plate test is the ability to quantify the percent infection based on how many of the 200 seeds are infected. Labs are able to quantify the number of other pathogens present in the fungal screen where they look for five pathogens, three saprophytes, and two storage moulds. The disadvantages of the plate test is that it **only** tests 200 seeds, while the DNA method is able to test roughly twice that volume. Another disadvantage is the turnaround time: five to seven days are required for the fungal colonies to grow before identifying them, while the DNA test can tell you if *F. graminearum* is present in less than half of that time (one to two days).

It is very common to have a positive DNA test followed up with a 0.0% result on the *Fusarium* plate test. This can happen for a number of reasons:

- If the actual percent infection is less than 0.5%, it is less likely to show up on the plate test, but still likely to return a positive DNA test
- If the seed has a late season, surface level infection, or has been contaminated on the surface by dust that contains *F. graminearum* spores, the DNA test will detect this, but the surface sterilization step of the plate test will remove or kill the spores making it undetectable.
- The last possibility is that the *F. graminearum* is no longer viable. In storage, we tend to see the percent infection of seed decreasing over time. This is because the pathogen, just like the seed, can only survive for so long in storage before it is dead. This is a more likely possibility in seed that is over one year old.

Seed treatment

In conjunction with proper seed testing, field history and management, along with variety selection, the use of seed treatments could provide some reduction in FHB and should be considered. Environmental protection to prevent spread is also a factor when considering the targeted use of fungicides. Seed treating and, if possible, seed which is preferably *Fusarium*-free should be used to reduce the risk of spread from field to field, keeping in mind it is one tool alone and not the entire solution.

If treating seed, use a fungicide registered in Alberta for the control of seedling blight and suppression of root and crown rot caused by seed and soil borne *Fusarium spp*.

Regulation

F. graminearum was regulated from 1999-2020 in the Pest and Nuisance Control Regulation, under the *Alberta Agricultural Pests Act*. Despite *F. graminearum* no longer being regulated in Alberta, it is still an important crop pest, requiring management.

Municipalities have the authority to enhance the standard for any named pest within their own jurisdiction. Under the *Municipal Government Act*, the option exists to create municipal bylaws,

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including pest management bylaws. Consult with your local municipality if a bylaw for *F. graminearum* is in place.

Field hygiene

Remove any loose crop residue from all equipment before leaving an infected field and moving to another field. Good biosecurity practices will help minimize the movement of *Fusarium*-infected crop residue, as well as other diseases, weed seeds, etc.

Thorough chopping and uniform spread and distribution of straw will encourage more rapid decomposition of infected crop residue.

Post-harvest management

Tools for post-harvest management of *F. graminearum* include:

- Thorough chopping and distribution of straw
- Storage aeration and drying
- Gravity table and colour sorter to remove FDKs
- Separate storage
- Feed grain storage
- Careful feed grain loading/unloading and avoiding spillage
- Control volunteer plants that may serve as hosts
- Laboratory testing

Please be advised that increasing wind may reduce FDK but will increase FHB inoculum in the field. In mature crops where FHB has occurred, growers adjusting their combines could blow out *Fusarium*-damaged wheat kernels (which are lighter than the other seeds) and infected chaff in an attempt to improve the grade and reduce toxin levels in harvested grain, but will simultaneously increase the amount of infected material left in the field.

Other FHB-related Issues

Mycotoxin production

F. graminearum can produce several mycotoxins, including deoxynivalenol (DON, vomitoxin), nivalenol, T-2, HT-2, and zearalenone (F-2). DON is the most common mycotoxin associated with *Fusarium* contamination in cereal grains. The presence of these mycotoxins reduces the marketability of grain.

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- The specific mycotoxin or combination of mycotoxins depends on the *Fusarium* species that infected the plant. The presence of DON may be a warning sign that other mycotoxins are present, and in some cases, they may act synergistically with each other, amplifying negative effects.

- Livestock and poultry are susceptible to mycotoxins. The severity of negative effects will depend on the types of mycotoxins present, how those mycotoxins interact with each other, and the age and species of the animals exposed.

- Lightweight, shriveled FDK may contain high concentrations of DON. Levels as high as 30 parts per million (ppm) in wheat and barley have been detected in other provinces. However, late infections by *F. graminearum* towards late milk and early dough stages may produce grain that appears healthy, but that is still be contaminated with high levels of DON.

- In non-ruminants, such as hogs, contamination of feed grain with as little as 1 ppm of DON in the complete diet on a dry matter basis can result in reduced feed consumption and, consequently, a reduction in growth. At concentrations of 5 ppm, feed refusal and diarrhea can occur. Higher concentrations will cause vomiting in adult pigs. Young pigs are more susceptible to the effects of DON and may exhibit feed refusal, vomiting and reduced weight gain with dietary concentrations of less than 1 ppm. Most hog producers have a zero tolerance for DON in the feed they use.

- Adult beef cattle can tolerate higher levels of DON without known detrimental effects. Previous research has demonstrated that that DON levels at 9 ppm in backgrounding diets and up to 18 ppm in finishing diets did not negatively influence growth, feed intake or feed efficiency. Calves, pregnant cows, or lactating cows may experience reduced feed intake or milk production at lower levels of contamination.

- Canadian Food Inspection Agency limits for acceptable levels of DON in the complete diet on a dry matter basis are 1 ppm of DON for swine, young calves, and lactating dairy animals (not to exceed 40% of the diet); and 5 ppm for beef cattle older than 4 months and poultry (not to exceed 50% of the total diet). Legislated limits and regulated tolerance levels for other mycotoxins that may be present in livestock feed can be found here: https://inspection.canada.ca/animal-health/livestock-feeds/regulatory-guidance/rg-8/eng/1347383943203/1347384015909?chap=1

Several methods, both chemical and physical, have been studied as potential methods of detoxifying DON. Unfortunately, there is no easy, economical way to reduce the toxicity of the mycotoxin- contaminated kernels.

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- The presence of compounds associated with DON also affects the production of beer. The compounds affect the taste of beer and may cause gushing or excess foaming. Most malting companies now have a zero tolerance for DON and test for it before purchasing grain stocks. Kilning during the malting process can kill *F. graminearum* but doesn't affect the DON level.
- Bread making is also affected by DON. Flour made from DON infected kernals changes colour and the bread does not rise normally. The baking process does not destroy DON, which is heat stable.
- The presence of DON in food products is increasingly being regulated, and tolerance limits have been established in many countries, including Canada. These are currently under review, but can be found at: https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/chemical-contaminants/maximum-levels-chemical-contaminants-foods.html

Fusarium Action AB (FAAB) Members

Alberta Association of Agricultural Fieldmen (AAAF)

Provincial Agriculture Service Boards (ASB) Committee

Rural Municipalities of Alberta (RMA)

Alberta Seed Growers Association (ASGA)

Association of Alberta Co-op Seed Cleaning Plants

Alberta Wheat Commission

Alberta Barley Commission

Canadian Seed Trade Association (CSTA)

20/20 Seed Labs

SGS BioVision

Alberta Beef Producers

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SEC. 8)

- Animal Health – Livestock Health and Disease Control

a. Policy

To establish a policy in accordance with the Alberta Animal Health Act and Regulations in assisting the office of the Chief Provincial Veterinarian in measures against livestock disease spread, livestock disease surveillance, and livestock traceability.

b. Procedure

1. The ASB office will have available the latest information to assist livestock producers in accordance of the Animal Health Act Regulations.

2. The ASB office will communicate to M.D. of Fairview livestock producers any change in regulation requirements or new information that will assist in safeguarding our livestock industry.

3. When requested, the ASB office will cooperate with the office of the Chief Provincial Veterinarian and/or their designates should a livestock disease outbreak occur within the Municipal District of Fairview #136.