

Barley Cleanliness Committee Report

Submitted by members of the Barley Cleanliness Committee

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to the Canadian Grain Commission

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Table of contents

Terms of reference	1
The approach	1
The problem	1
Vessels of feed barley contained visible excreta	1
The reasons for the problem	1
Issues.....	3
Producers	3
Country elevator managers	3
Terminal operators	4
Canadian Wheat Board	4
Canadian Grain Commission	5
Grain customers	5
Evaluating measures taken	5
Recommendations	8
A. General recommendations.....	8
Recommendation A1: Establish an industry committee	8
Recommendation A2: Communicate expectations	8
B. Specific recommendations.....	8
Prevention.....	9
Recommendation B1: Protect outdoor grain piles	9
Recommendation B2: Consider alternatives to harvesting damaged barley.....	9
Recommendation B3: Evaluate wildlife management and damage compensation.....	9
Recommendation B4: Enhance information programs.....	9
Measures at country elevators.....	10
Recommendation B5: Reject loads with severe excreta	10
Recommendation B6: Identify excreta-free loads.....	10
Recommendation B7: Option to clean loads with moderate excreta.....	10
Recommendation B8: Segregate loads with excreta.....	10
Recommendation B9: Improve detection methods.....	10
Procedures at terminal elevators.....	11
Recommendation B10: Stop pooling of feed barley cars	11
Recommendation B11: Improve detection methods.....	11
Recommendation B12: Improve cleaning methods	12
Recommendation B13: Prevent reintroduction of excreta during reclaiming ..	12
Recommendation B14: Establish acceptable “visual” tolerances.....	12
Recommendation B15: Do not introduce special grades	12
Recommendation B16: Reject cars with excreta	13
Recommendation B17: Clean grain inland	13
Recommendations for the marketer	13
Recommendation B18: Reimburse producers.....	13
Recommendation B19: Require CWB to resolve customers’ complaints.....	13
Other options	13
Appendix A: Organizations contacted	15
Grain companies	15
Grain customers	15
Producer groups.....	15
Governments	15
Others	15

Terms of reference

The Canadian Grain Commission (CGC) formed the Barley Cleanliness Committee to

- Determine the source of or reason for the ongoing presence of deer excreta in barley
- Determine why current measures have not fully eliminated the problem
- Recommend measures to protect the integrity of barley shipments

The members of the team were

- Henry Fast (retired CGC Chief Grain Inspector)
- Wally Madill (former Chief Executive Officer of Alberta Wheat Pool)
- Dave Sefton (producer member of the Western Grain Standards Committee)

The Committee stated that “the objective is to provide barley that customers find acceptable.”

The approach

The Committee met with representative sectors of the grain industry through a series of meetings and telephone calls between March 23, 1998, and April 28, 1998. The CGC issued a news release about the study, inviting interested individuals to contact the group. These discussions allowed the Committee to understand the problem and obtain input for solutions.

The Committee received tremendous co-operation. We thank all those contacted for their open discussion and helpful suggestions. A list of organizations the Committee spoke with is in Appendix A. Names of individuals are not listed.

The problem

Vessels of feed barley contained visible excreta

Japanese customers received two vessels of feed barley that contained visible levels of deer excreta in the holds. The presence of this excreta was unacceptable to them.

Other vessels were required to discharge grain at Vancouver and Prince Rupert as a result of excreta detected in vessel holds during loading.

The reasons for the problem

The Committee talked to a wide range of grain industry participants to identify the issues. We examined how deer excreta is introduced into feed barley in the first place, and then why cleaning and handling procedures have not detected and removed the excreta.

Most deer excreta seems to be introduced into barley under two conditions, when swathed barley is left in the fields, and when barley is stored outside.

- Most barley is swathed as part of the harvesting operation. As barley lies in the swath, deer can feed on it and leave excreta. This is picked up in combining. The longer that the barley is left in the swath and the more deer that are in the area, the more likely it is that feeding will occur and excreta will be deposited. In 1996, snowfall prevented significant areas of barley from being harvested, particularly in northern areas of Alberta, British Columbia, and Saskatchewan. Much of this barley was harvested in the spring of 1997.
- Feed barley is often the lowest priced crop produced; thus, it is the most likely grain to be stored in outdoor piles if producers lack sufficient indoor storage for all their grain. If these piles are accessible to deer, they will climb onto them to feed and leave excreta.

The Committee also heard cases where small quantities of excreta were detected in barley that had been straight combined. The most likely explanation for this was that the cars, trucks or elevators handling this grain were contaminated from previous grain containing excreta.

Each provincial government operates a wildlife damage compensation program and an optional crop insurance program for producers. Each province's rules are different and they do not appear to be clearly understood. Producers can destroy their unharvested crop in the field if the damage from deer is extensive. They then receive a percentage of crop value that varies by province. Otherwise, if producers harvest their grain they must search for a market. They may be able to collect compensation after harvest if their grain has lost value because of excreta. The extent of coverage is not clear to producers and does not extend to barley containing lower levels of excreta.

We next looked at why excreta remains in feed barley. Until recently, primary elevator managers were not overly concerned with excreta in feed barley. They considered it as dockage, believing that it would be readily removable by terminal elevator cleaning equipment. This view was also the view that the CGC inspectors and terminal operators had. As a result, primary elevators received and shipped feed barley with excreta.

At terminals, automatic samplers are designed to take representative samples of grain. The small size and light weight of deer pellets make it unlikely that they would be picked up in feed barley. As a result, excreta was rarely seen in car unloads at terminals. Even if it had been detected by the CGC inspectors, it would have been considered dockage.

At terminal elevators, feed barley was normally cleaned first over screens with openings ranging in size from 0.75 to 1 inch, which are too large to trap deer excreta. After passing through this screen, further cleaning is designed to remove only material that is smaller than barley. These cleaning systems were designed for high capacity, to keep cleaning tariffs as low as possible.

The automatic samplers used as vessels load cannot adequately pick up excreta pellets. As a result, two vessels of feed barley contained unacceptable levels of excreta which were visually detected in Japan when the vessel hatches were opened. Following complaints from Japan, visual hold inspections of barley during loading began in Canada. These inspections discovered excreta in other cargoes, triggering discharges back into the shipping terminals.

Issues

The Committee discovered that industry participants hold different views or assumptions about how the industry works or does not work. The Committee believes that these views are at times inaccurate or incomplete, and they complicated an overall understanding of the excreta problem. Fortunately, some of these views are changing already.

Producers

The Committee's understanding of producers' views was

- Terminal operators are paid for cleaning, and they should just do their job.
- Add-backs are a source of excreta.
- Once they ship their grain, the problem is no longer theirs.

The Committee believes

- It is not that easy to clean excreta out of barley. Terminals have tested different screen sizes, and have improved their cleaning. However, throughput is slower and barley is lost into the screenings. Cleaning costs have also risen.
- Terminals do add back into barley some grain cleaned out of other grains, but it is unlikely this will contain excreta. The excreta removed in initial cleaning is not added back into the grain, but is disposed of. Aspiration removes dust and small particles.
- The grain they deliver enters the food chain directly or indirectly. Customers will continue to buy only if they are satisfied with the quality of grain that they receive. Excreta is everybody's problem.

Country elevator managers

The Committee's understanding of country elevator operators' views was

- Excreta is only a problem for export grain, and that terminals should just clean the grain.
- If they don't see the problem, it isn't there.

The Committee believes

- Customers do have varying sensitivity to excreta in grain, but none of them, export or domestic, want it in their grain.
- As discussed above, terminals have difficulty cleaning the excreta out of barley. Terminals have discovered excreta even in cars that country operators were asked specifically to load as excreta-free, so detection at the country elevator is difficult.

Terminal operators

The Committee's understanding of terminal operators' views was

- Country elevator managers should refuse to accept grain with excreta.
- Customers are being unreasonable, and should accept a small tolerance.
- This is a one time problem.
- The CGC Certificate Final is the end of their responsibility.

The Committee believes

- Country elevator managers have considerable difficulty detecting excreta.
- The tolerance of 0.0005% proposed by the CGC represents one pellet in 40 kilograms of grain.
- Excreta is an ongoing issue. Buyers do not want excreta in their grain.
- CGC Certificate Finals are only as good as the representative samples used for assigning the final grade of a shipment.

Canadian Wheat Board

The Committee's understanding of the views of the Canadian Wheat Board (CWB) was

- Terminals can meet whatever specifications are needed.
- The CWB has passed sufficient information to each sector.
- Grain handlers or the CGC, or both, should be responsible for any customer dissatisfaction, since the CWB never sees the grain.
- Grade changes and regulations should have solved the excreta problem.

The Committee believes

- Terminals cannot always create a product meeting a certain specification if the grain received does not meet that specification.
- There is a definite need for a greater sharing of information quickly among all parts of the industry.
- As Canada's export marketer of barley, the CWB should accept the primary responsibility for solving customers' concerns.
- Grade changes and regulations cannot solve the excreta problem.

Canadian Grain Commission

The Committee's understanding of the CGC's views was

- Terminals should clean out all dockage as measured using a Carter dockage tester.
- Orders and memorandums are the main measures that can be used to solve the problem.

The Committee believes

- The need for high throughput through terminals means that it is unrealistic for terminals to clean out all dockage. A reasonable tolerance must be allowed in shipments. Solutions must be based on input and agreement from all sectors of the industry.
- Before issuing memorandums, the CGC should talk more to affected groups to discuss changes such as the excreta tolerance change that was proposed. As well, company managers should communicate more widely within their companies. Together, these measures would ensure that the industry views would be taken into account and the rationale for the policy would be clear when CGC issues the memorandums.

Grain customers

The Committee's understanding of grain customers' views was

- Excreta in any amount is unacceptable. They should be able to buy excreta-free grain.
- A specified tolerance would not guarantee that grain would be excreta-free.

The Committee believes

- No one in the Canadian industry wants to have excreta in grain.
- It is likely that there could be virtually undetectable quantities in bulk shipments.

Evaluating measures taken

The grain industry has taken a number of steps to eliminate the excreta problem in barley, with varying degrees of success.

1. The CGC proposed a tightened tolerance for excreta in feed barley to 0.0005%.

The 0.0005% limit is equivalent to one excreta pellet in 40 kilograms of feed barley. Neither country elevator managers nor CGC inspectors at terminals have a system for representative sampling of sufficient quantities of grain to accurately measure to this level. It has, however, certainly focussed more attention on the issue.

2. The CGC proposed a change to treat excreta as foreign material rather than dockage.

The CGC did this to make excreta a grading factor rather than a dockage factor. Few people understand the rationale for this, since the CGC did not properly explain it.

3. The CGC proposed three grade levels for excreta for feed barley.

The CGC proposed tolerances of

- 0.0005% for General Purpose Barley
- 0.02% for Sample Canada Western, Account Excreta
- Above 0.02% for Sample Commercial Salvage

This grading proposal raised concerns with country and terminal operators since there is no reasonable method of determining if a truckload or carload of barley is above or below the 0.0005% level. Consequently, the CGC has no reasonable method of arbitrating grade disputes on this factor. The fact that this proposal was put out and then later delayed indefinitely because the CWB did not announce prices for the proposed grades added to the uncertainty and suggested that the CGC, CWB and grain companies were not co-ordinating actions.

4. The CWB refused to pay for grain with more than 0.0005% excreta.

This drew attention to the issue, but raised other questions. For example, how would grain that was already in the system be accounted for? If producers have excreta in their grain and have a CWB delivery contract, would they be let out of the contract?

5. The terminals adjusted cleaning systems to improve removal of excreta from barley.

Terminals continue to adjust cleaners and test different screens. They have been able to improve cleaning. Present practices and loading protocols are not sustainable in the long term because they have reduced cleaning capacity by as much as 70%. Some terminals are using other cleaning systems such as canola cleaners to clean barley, which reduces canola throughput. Further testing and cleaner changes have to take place to find the best cleaning approach.

6. The CGC instituted a vessel hold inspection protocol.

The CGC is checking for excreta in vessel holds during loading using a combination of visual checks and probing. This has been successful in meeting customers' expectations. However, the terminal operators and the CGC inspectors are uncomfortable with the protocol, since both face tremendous pressure to meet a specification which is not readily quantifiable. The protocol is costly to the terminals because it slows loading and if excreta is found in vessel holds the grain must be discharged back into the terminal. It is also costly to the CGC, which must pay for extra staff time.

7. The CGC and grain companies are trying to improve detection methods.

- A committee has been formed to work on automatic sampling systems with manufacturers to come up with a means of adequately sampling for excreta.
- Terminals have tried closing receiving pits to have the grain bubble up for a visual check for excreta, with some success.
- Country operators are testing large sieves to check for excreta on truck receipts, are checking visually on top of loads, and are turning bins to look for excreta.

Such efforts should continue, even though they are only partially effective. These methods have not been able to determine percentage levels of excreta. If excreta is seen, obviously it is present. If it is not seen, it may or may not be present.

Recommendations

A. General recommendations

The Committee discovered that industry participants hold different views or assumptions about how the industry works or does not work. Often, these views may be inaccurate or incomplete. A major reason for this is the apparent lack of effective communication among industry participants. A higher level of trust needs to be created in the grain industry, where everyone works co-operatively to meet evolving customer demands rather than pursuing narrow self interests. Regulations and directives alone are only partially effective.

A consultative process needs to be put in place so all sectors understand that certain actions in one sector may cause problems in another sector. Ideally, ad hoc committees such as the Barley Cleanliness Committee should not be needed.

Recommendation A1: Establish an industry committee

The industry should establish a committee representing the CGC, CWB, accredited exporters, terminal operators, country elevator operators and producers. This committee should meet regularly to discuss operational issues, share views, discuss problems and find solutions.

The entire industry needs to recognize that customer expectations are changing. Today's customer is more concerned about food safety. They also tend to be more concerned about quality. These issues will continue to grow over time. There is a need to re-focus the grain industry on meeting customer needs. The attitude needs to change from one of blending to the minimum acceptable level to one of continuous improvement. Everyone in the grain handling system must understand that they are responsible for delivering safe food products, not just a commodity.

Recommendation A2: Communicate expectations

The CWB and industry must continue to communicate customers' expectations to all sectors of the grain industry.

A common principle heard time after time by the Committee was "accountability." Everyone agrees that measures have to make people accountable for their piece of the solution. This principle was considered in the specific recommendations that follow.

Another principle followed was to try to let market forces work where possible, rather than imposing regulations.

B. Specific recommendations

The Committee met with industry participants over a one month period. It is apparent that the issues involved are complex and without easy solutions. The

recommendations that follow represent a package that we expect would provide barley to customers that is more acceptable than they received in the past and meets or exceeds their expectations.

Prevention

Producers can take some measures to reduce the possibility of deer excreta in barley, particularly with grain storage.

Recommendation B1: Protect outdoor grain piles

Outdoor grain piles should be fenced or covered to keep deer out. If deer do access grain piles, producers should carefully scrape away all excreta possible or separate barley that has excreta from the rest of the pile when loading the barley.

Grain in swaths that has been damaged by wildlife can be compensated for under provincial crop insurance programs or wildlife damage programs.

Recommendation B2: Consider alternatives to harvesting damaged barley

Producers should watch closely for wildlife damage in swaths and use crop insurance and wildlife damage compensation as much as possible.

Provincial governments administer crop insurance and wildlife damage compensation under federal/provincial agreements. It appears that increasing numbers of deer have contributed to the damage problem. Also, governments, through crop insurance, have underestimated the reduction in marketability of grain with excreta.

Recommendation B3: Evaluate wildlife management and damage compensation

Provincial crop insurance and natural resource officials should consider the introduction of deer population control measures. Also, they should re-evaluate crop insurance and wildlife damage compensation programs to ensure they properly compensate for excreta in grain.

Producers should be made aware that excreta is not acceptable, that there are measures they can take to keep it out of their grain, and that they have options if they discover excreta in the swath or in the grain (such as to contact crop insurance).

Recommendation B4: Enhance information programs

The CGC and provincial governments should co-operate to prepare an information pamphlet to inform producers about excreta and how to keep it out of the grain handling system. The CWB should make producers aware of customer concerns.

Measures at country elevators

The primary elevator is the usual entry point for grain into the handling system. It is an important point where excreta can be identified and controlled. Every measure must be taken to keep excreta from entering the handling system. Country elevator managers must ensure that producers understand the unwillingness of customers to accept excreta in grain.

Recommendation B5: Reject loads with severe excreta

Elevator managers should be able to reject grain containing high levels of excreta at the elevator and return it to the producer. The elevator manager should work with producers to find a local feed market that will accept this grain, help them to find places that could clean out the excreta, or refer them to wildlife compensation officials with a statement that the grain is not marketable.

Recommendation B6: Identify excreta-free loads

If no excreta is detected in a truckload, the manager should consider the load excreta-free for settlement with the producer. The normal charge for removal of dockage by cleaning at the terminal would be assessed.

Recommendation B7: Option to clean loads with moderate excreta

An elevator manager who accepts a load of grain containing excreta should be able to assess a special cleaning charge in addition to the normal charge for removal of dockage. This special cleaning charge should be high enough to reflect the additional costs that grain with excreta imposes on the entire system. For CWB barley, the elevator manager would pay the producer for the appropriate grade that the barley would be eligible for if the excreta were removed. In effect, in exchange for the special cleaning charge, the country elevator manager accepts the responsibility of delivering clean barley to the CWB for export. This allows producers to make appropriate market decisions at the point of delivery.

Recommendation B8: Segregate loads with excreta

The country elevator manager should be encouraged to segregate grain received with identified excreta and report these receipts. The managers should also follow good housekeeping such as emptying pits, boots and bin bottoms where grain with excreta has been handled. These measures will reduce the possibility of introducing excreta into other grain

Recommendation B9: Improve detection methods

Detection of excreta must be improved at the country elevator. Visual examination of the top of the truckload may detect excreta. The committee viewed a prototype of a device constructed by an Alberta Wheat Pool employee that would screen a significant quantity of grain at unload for detection of excreta pellets. Alberta Wheat Pool and others should continue testing of their detection devices to determine a practical way of detecting excreta. These tests should also attempt to establish a method that will give a rough estimate of the percentage of

excreta in a truckload of grain. These findings should then be shared with all primary elevator operators and the CGC.

If the detection at primary elevators is improved, operators will at least know when grain contains excreta. If none is detected with the new detection methods, an operator should be confident that the grain has minimal excreta. This will then give the manager and producer information to make market decisions.

Procedures at terminal elevators

Recommendation B10: Stop pooling of feed barley cars

To improve the accountability for accepting barley with excreta, pooling of feed barley cars at Vancouver should be suspended. With this, country managers will buy grain with excreta only if they are confident in their company's ability to clean it in their country or terminal elevators. If country elevator managers ship to a terminal belonging to another company, such as Prince Rupert Grain Terminal, they will have to seek authorisation and agree on a terminal cleaning charge with the terminal.

The Committee acknowledges that suspending pooling of feed barley to Vancouver could have some negative effects on railway efficiency in assigning cars to the right terminal. The railways should determine these effects. The Committee believes the effects will be small, given that feed barley through Vancouver is only about 700,000 tonnes out of total Vancouver shipments of about 17 million tonnes per year.

Recommendation B11: Improve detection methods

Currently, automatic samplers at terminals are not designed to catch large material such as deer excreta. Terminals have tried various ways to check for excreta at car unload, with some success.

The CGC should continue to work with terminal operators and sampling equipment manufacturers on equipment which can detect excreta at car unload. This could be a replacement or modifications to existing samplers, or perhaps an additional sampler designed strictly to catch large material. Even if car pooling is suspended, there will still be cars received at terminals directly from producers. Terminal operators will want to know if these cars contain excreta in order to assess the special cleaning charge.

Terminals have tested different types of screens and cleaners to improve their ability to clean out excreta. The last shipments to Japan were examined extensively in holds during loading and the customers expressed satisfaction with the cleanliness of the barley. This has been possible through modified cleaning systems, but terminal operators have said that cleaning operations have been slowed to about 30% of previous capacity and the losses of barley into screenings have increased to about 2%.

Recommendation B12: Improve cleaning methods

Terminal operators should continue to search for the best cleaning methods, including investigation of new equipment with cleaner manufacturers. They should then try to increase cleaning speed without reducing barley cleanliness. Terminal operators must clean excreta that would be classed as dockage from grain. If the special cleaning is more costly for the terminal, it is assumed that they would file a higher cleaning charge.

Recommendation B13: Prevent reintroduction of excreta during reclaiming

Terminal operators said that it is unlikely, but possible, that grain from reclaim systems re-introduces excreta into the barley. Reclaim from other grains is a value-added activity of terminals, so should not be totally stopped. However, terminal operators must ensure that they are not reintroducing excreta into barley.

The certification at vessel loading is a difficult problem. Customers want barley without visible excreta. Terminals want a specific tolerance with a scientific basis for determination of excreta level. Unfortunately, the automatic samplers in use are not designed to pick up large material such as excreta, so the samples used for official grading by the CGC are inadequate. However, these same sampling systems are in use in every other major exporting and buying country.

Recommendation B14: Establish acceptable “visual” tolerances

It would be desirable to find an acceptable scientific sampling method; however, until one is found, the new tolerances for excreta in barley grades proposed by the CGC should be replaced with a “visual” tolerance. This tolerance and guideline, to be used by CGC inspectors for visual inspection of barley shipments, should be negotiated among the CGC, terminal operators, the CWB and accredited exporters. This negotiated loading protocol should include the tonnage of incremental loading and the frequency of visual inspection. The size of the incremental loading between visual checks may be changed with a demonstrated ability of the terminal to ship visually acceptable grain.

Terminal operators must be accountable for shipping grain that is acceptable to the customer. The role of the CGC inspector is to advise the terminal operators whether or not an increment is likely to be visually acceptable. This advice, however, should not absolve the terminal of its responsibility if a customer files a complaint. Furthermore, if terminal operators institute a special cleaning charge they should be responsible for all costs for discharges when visual tolerances are not met. Any additional costs incurred by the CGC and terminal operators for monitoring this special loading protocol should be recovered from the CWB.

Recommendation B15: Do not introduce special grades

The special grades proposed for various levels of excreta in barley should not be instituted. Changes in grade specifications is an important issue that requires much more attention than the Committee has been able to give it.

If customers want barley with special cleaning specifications different from the specifications in the current barley grades, the industry should examine the feasibility of meeting these specifications. The specially cleaned specification could be marketed as a premium product to some customers.

Recommendation B16: Reject cars with excreta

The option for terminals to reject cars with excreta should be continued. If a car is rejected, the country elevator operator that shipped the car should pay the additional costs incurred. Grain containing excreta should be shipped to terminals subject to terminal authorisation to accept the cars from the country shipper, and subject to the shipper's agreement to pay the special cleaning charge on cars with excreta. Terminal approval to accept cars of grain with excreta would be scheduled based on the terminal's ability to clean it without unduly restricting throughput. This recommendation assumes the suspension of port pooling of feed barley.

It was suggested that inland cleaning be used, since more time is available to do a proper job.

Recommendation B17: Clean grain inland

Inland cleaning should be used as a way of taking the capacity pressure off terminal cleaning.

Recommendations for the marketer

Recommendation B18: Reimburse producers

A few producers have had cars rejected at terminals because of excreta. In some cases of malting barley cars, these producers incurred both the cost of freight to return these cars to the country and the cost of having the cars downgraded. If the solutions proposed here are adopted, producers with similar grain in the future will only incur the extra cost of special cleaning. For this reason and as a positive gesture, the CWB should reimburse individual producers for these costs, less the new special cleaning charge.

Recommendation B19: CWB to resolve customers' complaints

The CWB as the producers' marketer must continue to take primary responsibility for resolving customers' concerns. Passing responsibility to the sectors providing a service to the CWB should be considered only under a negotiated service agreement.

Other options

The Committee heard a range of other suggestions that it is not recommending, including the following:

- Stop feed barley sales to Japan until the problem is solved

It was suggested that the CWB stop selling barley to Japan until solutions to the excreta problem are found. In fact, the CWB did forego some Japanese barley business over the past winter while cleaning and detection solutions were being tested. As well, the CWB agreed to pay a special handling charge to the terminals to re-clean barley, and agreed to pay half of vessel discharge costs. The CWB believed that the measures would be successful and wanted to meet Japanese needs for barley. If they did not, they risked losing this premium market. In fact, the measures taken have resulted in barley shipments acceptable to the customers.

- Use an identity-preserved system for feed barley

It was suggested that an identity-preserved system be used for feed barley. In such a system, the identity of individual producers' grain would be preserved through to the terminal. The Committee believes that the higher costs of such a system are not justified by the relatively low price of barley.

A variation of this would be to gather grain from specific excreta-free points for specific cargoes. The problem with this is that excreta-free cars have been found to contain excreta, and the area where cars with excreta have been detected covers large parts of the prairies.

- Ban contaminated grain from the elevator system

Another suggestion was that grain containing excreta be prohibited from entering the elevator system. This would certainly ensure that export customers receive excreta free barley, but the Committee does not believe that it is practical. Some barley with excreta will enter the primary elevators simply because of the difficulty in detection. The recommendations proposed would allow primary elevators to adopt a zero-tolerance policy if they choose. Elevators could also take in barley with excreta if they accept the responsibility for cleaning the grain.

- Stop growing barley.
- Kill all the deer.
- Eliminate deer habitat.
- Sell all barley domestically.
- Contract with producers for excreta free barley.
- Change the marketing system for export barley.
- Sell barley not commercially clean.
- Designate specific country or terminal elevators, or both, to handle grain with excreta

Appendix A: Organizations contacted

Grain companies

AgPro Grain Inc.
Alberta Wheat Pool
Cargill Limited
Cascadia Terminal
ConAgra Limited
Continental Grain Company (Canada)
Limited
Country Elevators Association
James Richardson International Limited
Manitoba Pool Elevators
N.M. Paterson & Sons Limited
North East Terminal Ltd.
North West Terminal Ltd.

Pacific Elevators Limited
Parrish & Heimbecker, Limited
Pioneer Grain Company, Limited
Prince Rupert Grain Ltd.
Richardson Terminals Limited
Saskatchewan Wheat Pool
Terminal Elevator Association:
United Grain Growers Limited
Western Grain Elevator Association
Weyburn Inland Terminal Ltd.
Xcan Grain Pool Ltd.
Individual elevator managers

Grain customers

Canada Malting Co., Limited
Dominion Malting Limited
Federated Co-op Limited
Highland Feeders Limited
Lakeside Feeders

Mitsubishi Canada Limited
Nissho Iwai Canada Ltd.
Nutrina Feeds
Prairie Malt Limited

Producer groups

Alberta Barley Commission
National Farmers Union
Western Barley Growers Association

Western Canadian Wheat Growers
Association
Other individual producers

Governments

Agriculture Financial Services Corporation
Alberta Agriculture
Alberta Grain Commission
B.C. Ministry of Agriculture & Food, Crop
Insurance
Canadian Grain Commission
Canadian Wheat Board

Manitoba Agriculture
Manitoba Crop Insurance Corporation
The Prairie Feed Resource Centre,
University of Saskatchewan
Saskatchewan Crop Insurance Corporation
Saskatchewan Agriculture

Others

Alberta Cattle Commission
CN Rail
Canadian Pacific Railway
Overseas Merchandise Inspection Co. Ltd.

University of Saskatchewan College of
Veterinary Medicine
Western Grain Standards Committee