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Canada

SEED STANDARDS REVIEW

Round 2 Consultation Document

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For further information contact:

Seed Section
Plant Health and Production Division
Canadian Food Inspection Agency
59 Camelot Drive
Nepean, Ontario, K1A 0Y9
Telephone: 613-225-2342
Facsimile: 613-228-6629

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ROUND 2 CONSULTATION DOCUMENT

SUMMARY

Respondents to the consultation document dated May 30, 1997 agreed that all of the plant names should be standardized according to internationally agreed protocols, that species not listed in Schedule I to the *Seeds Regulations* should have to meet the weed seed standards of an appropriate table rather than a pure seed standard and that further clarification of "prohibited" and "free-from" was desired. Two additions to the list of prohibited noxious weed seeds were agreed upon - serrated tussock and jointed goatgrass.

There was also agreement that the standards for sainfoin, vetches and open pollinated sunflower were currently too strict and that adjustments should be made.

There was disagreement respecting the need for expiry dates for germination tests but quite strong agreement that canola, in particular, must be tested after treatment and closer to sale. There was also little agreement on the need for a standard for inert in crop kinds that do not already have one.

Some respondents refused to entertain any changes to the current standards while requesting that any changes be introduced only after a period of three years. Others were equally adamant that certain changes be implemented as quickly as possible. Still others proposed quite radical ideas that the industry may take some time to get used to such as getting rid of the grade tables and grading system or modifying the system dramatically.

The original purpose of the review was to identify changes for which there was general consensus and to move forward relatively quickly on those. Round 1 of this consultation identified many changes that were generally agreed to. It also identified deep divisions, many new ideas as well as misunderstanding of current requirements.

This second round of consultation is intended to confirm agreement on those issues identified during Round 1 as being agreed upon, establish consensus on as many other issues as possible, further explain certain concepts that may have been poorly described or misunderstood, explore some new ideas that have come forward and to confirm lack of support for some proposals.

Regulatory amendments will be proposed based on the results of this Round 2 consultation. There will be ample opportunity to review any proposed *Seeds Regulations* amendments further before they would come into effect. At the same time, further discussions arising from this review of seed standards should continue to try to resolve some of the more difficult and challenging concerns that face the seed industry.

INTRODUCTION

Representatives of the major national seed organizations, the Canadian Seed Grower's Association (CSGA), the Canadian Seed Trade Association (CSTA) and the Commercial Seed Analysts Association of Canada CSAAC), met with representatives of the Canadian Food Inspection Agency (Seed Section and Central Seed Laboratory) September 24, 1997 to review responses to suggested changes to the seed standards proposed in a document dated May 30, 1997.

Approximately 30 individual responses were received as well as a consolidated response from the CSGA representing the views of many more.

The purpose of this review of seed standards is to identify potential changes to the current standards and to move forward with those on which there is broad agreement. Some issues on which there was general, near unanimous agreement may also proceed on the "fast track", provided further explanation can convince those who were initially opposed. In both cases, drafting of regulatory amendments will not begin until after this second round of consultation confirms agreement with the changes proposed.

Those proposals on which there was little consensus will be discussed further during a third round of consultation, tentatively proposed for the fall of 1999. Those proposals for which there was mostly disagreement will not be pursued.

Another purpose of the review was to solicit additional proposals for changes to the standards. Some were received and are listed in this document.

The responses have been classified as follows:

A - unanimous or near unanimous agreement; proceed quickly with amendments
B - general agreement where further explanation and discussion may resolve the issue
C - further consideration required before decision
D - additional suggestions
E - strong division; postpone further discussion until Round 3
F - unanimous or near unanimous disagreement; further discussion unnecessary

The purpose of Round 2 is to confirm consensus on those issues identified during Round 1 as being agreed upon (**A**), establish consensus on as many **B** issues as possible, consider the **C** issues a bit further, review the additional suggestions (**D**) and confirm the **E** and **F** ratings assigned to certain issues.

One respondent argued that changes to seed standards should only be implemented after a minimum period of three years. This will need to be more fully explored as it really depends on the proposals going forward and is contrary to the initial request from the national seed associations to implement the changes in a timely manner. It is certainly possible to have different

provisions come into effect on different dates. In fact, it is likely that various proposals will be implemented over a period of several years.

Several respondents commented on one of the guiding principles identified in the Round 1 consultation document, viz. that "seed standards are minimums based on standard operating procedures and 80% of seed should be able to meet them". This was interpreted as 80% of seed in the marketplace should comply with the labelled guarantee, i.e., the grade name, and that this was not good enough. What the principle was meant to imply was that 80% of the seed produced should, under normal operating procedures, meet the standard for No. 1 seed with the remaining 20% grading No. 2 or not being used as seed. In fact, marketplace monitoring over the past three years indicates that 95% of the certified seed and 85% of the common seed in Canada is in compliance with the *Seeds Regulations*.

This principle is fundamental to the Canadian seed grading system. Grade standards are generally established at levels below that of the majority of seed lots. For example, most seed lots of wheat will have a germination of more than 90% but the standard for No. 1 wheat is 85%. This provides for a margin of error when testing the seed and provides some room for a decline in germination between testing for grading purposes and sale, at which time the seed must still meet the labelled guarantee. It is generally not advisable to have a seed grade standard that is close to the average quality of seed lots because many lots will be "on the line" rather than definitely above or below the standard.

Noticeable divisions were evident between vendors (CSTA) and consumers (as represented by the CSGA) of seed as would be expected. Vendors generally were not in favour of raising seed standards whereas consumers were. Several respondents argued that the grade standards were minimum standards and that companies that wanted to market their products at a higher standard of quality could do so. While true, it is also important that the Canada pedigreed grade standards are not perceived to be just average and therefore not worth the additional cost over common seed.

A review of 141 alfalfa seed analysis certificates for total weed seeds is illustrative. Canada Certified No. 1 alfalfa seed is permitted 50 total weed seeds per 25 g. No weeds seeds were found in 22 samples; 104 samples had up to 25 weed seeds per 25 g and 15 samples (11%) had more than 25 but fewer than 50 weed seeds per 25 g. One might assume from this that the standard for Canada Certified No. 1 alfalfa could easily be raised to 25 weed seeds per 25 g. However, the response to this suggestion in Round 1, indicated that the CSGA was in favour of the proposal while CSTA respondents were not.

Note: An earlier version of this document was distributed to a limited number of people in the fall of 1997. Unfortunately, due to various circumstances, this final version was not completed until recently.

REVIEW OF COMMENTS, CLASSIFICATION OF ISSUES AND DISCUSSION

Generic Issues

1. Nomenclature There was strong agreement for harmonization of botanical names with the United States Department of Agriculture/Agricultural Research Service's Germplasm Resources Information Network (GRIN). Please refer to Appendix 1 for a list of those species - crop kinds or weeds - that would be affected. **A**

2. Standard for unlisted species There was strong agreement that unlisted species should meet the weed seed standard of an appropriate table and not a pure seed standard. **A**

Some concern was expressed with respect to the classification of native species when found as contaminants in other native species, i.e., it was suggested that they should be considered as other crop seeds, not weed seeds. It has been suggested that reference could be made to Association of Official Seed Analysts (AOSA) Handbook 25 which indicates when a seed is either a crop or weed depending on the species under analysis. If general agreement can be achieved during Round 2, this issue may go forward on the fast track; otherwise it may have to be explored further during Round 3. **C, D**

3. Replace fractions There was some division over this proposal, however, it could be agreeable with further clarification. Please refer to Appendix 2 for further information. Responses coming out of Round 2 will determine whether this proposal moves forward quickly or not. **C**

4. Free from vs prohibited It was agreed that further clarification was in order. **A**

The expression "free from" appears in subsections 7(2), (3) and (5) and applies to Tables I, II, III and VII. It means that no (i.e., 0) tartarian buckwheat (in the case of western Canada) or wild oats (in the case of eastern Canada) can be found in the original, grading sample for Tables I, II and III and, in the case of Table VII listed species, no cleavers can be present. A tolerance will be applied in the case of monitoring samples.

"Prohibited" means that no seeds of the species in question shall be present in a seed lot. If, during the course of monitoring seed, a prohibited noxious weed seed is found, inspectors will be instructed to draw an additional sample of seed, two times the size of the original sample. If examined and found to contain another prohibited noxious weed seed, the seed lot will be detained and corrective actions taken.

5. Change varietal blends to certified blends The trade was generally agreed that this would beneficial, whereas the seed growers were somewhat divided. The steering committee felt that further clarification and discussion may attain full agreement. There is some concern over certified blends and mixtures in general, however, due to the historically low compliance levels of these seed products. **C**

There was a suggestion that these blends be extended to additional tables, e.g., Table VII (canola). Unless there is strong support expressed during Round 2, this review will be limited to exploring the possibility of certified blends in place of varietal blends in those tables where it currently appears. **D**

6. Addition of species There was general agreement for the addition of some species, however, there was also some questioning as to why bother. Subsection 6(2) of the *Seeds Regulations* establishes purity standards for all unlisted species. Addition of species to specific tables requires establishment of germination standards, germination methods and, except for vegetable seeds, results in mandatory labelling with a grade name. Some thought the establishment of standards and methods could be problematic but many other jurisdictions have germination standards for hundreds of species of flowers, herbs, etc. and test methods are well developed by other organizations. It was suggested that crop kinds which are sold as certified seed should be added to Schedule I, otherwise certified seed would be in general commerce without a germination standard or testing requirement. With the recent legalization of hemp, some consideration should be given to adding this species to Table IV, for example. **C**

There was a suggestion that Canada should have a formal protocol for the addition of new species and for determination of an applicable grade table. The International Seed Testing Association (ISTA) has guidelines for adding species to their testing protocol. **D**

Please refer to the comments for the individual tables to review the comments arising from Round 1. Please suggest any further additions during Round 2.

7. Standards for pure seed/inert There was some division on establishment of standards. It was agreed that this issue be moved out of fast track. Most countries have a pure seed standard and/or a labelling requirement. It was suggested that a pure seed standard be established for all No. 1 seed. It should be noted that in the vast majority of situations, separation and weighing would not necessarily be required - a visual screening test could be employed. Recently, concern has been expressed over the lack of inert standards in Table XIII. **E**

8. De-regulation Most comments expressed agreement that government intervention should not be burdensome. Some felt government should not bother with establishing seed standards entirely. Others felt that no changes should be made to the standards and that vendors can establish higher voluntary standards of their own to meet the requirements of their customers. Still others (generally consumers of seed) were quite happy with government established standards and the idea of increasing them. **B**

9. Expiry date for germination tests There was disagreement over a general, blanket requirement, with many comments restating the fact that the seed must meet the labelled guarantee at the time of sale. **F**

There was, however, some agreement to target specific crops, e.g. canola, that have demonstrated problems in recent years. For this round of consultation, we are particularly interested in

receiving views with respect to pre-processing sampling and germination testing versus post-processing (including seed treatment) sampling and testing with the understanding that some crop kinds are more affected by processing than others. **B**

10. Additional suggestions of a generic nature

The CSGA suggested that the seed quality standards should be similar for all three pedigreed classes (Foundation, Registered and Certified) with:

(a) No. 1 grades almost free from weed seeds and other crop seeds;

(b) No. 2 grades having moderate levels permitted; and

(c) Common No. 1 and Common No. 2 grades folded into one Common grade with standards set at approximately twice the level of Certified No. 2 seed.

This would certainly simplify Canadian seed standards. If seed growers, as the principal consumers of this seed, are willing to accept that the legal standard for Foundation and Registered seed is somewhat reduced (to the current Certified levels) then serious consideration should be given to this proposal.

Furthermore, although non-pedigreed seed of the major agricultural field crops must be labelled, when sold, as Common No. 1, Common No. 2 or, in the case of canola just Common, in practice this is often not the case. Perhaps we should consider eliminating the Common grade, while establishing the current lowest standard as the Canadian minimum standard (CDN MIN STD), applicable to all seed imported into or sold in Canada. Additionally, ISTA or AOSA Rules could be adopted for testing this seed, significantly reducing confusion on imports and facilitating trade.

Alternatively, or in addition, there has been a suggestion to revert to the Canada No. 1 and Canada No. 2 grade names, with their use restricted to registered seed establishments. Establishments that were not registered would not be able to grade seed and would be required to label every package of seed pursuant to subsection 18(1).

Revise Weed Seeds Order

Removal of species - Please refer to Appendix 4 for proposed criteria for classification of noxious weed seeds and a review of current and proposed listings. **B**

Class 1, Prohibited Noxious Weeds Seeds (Applicable to all tables of Schedule I)

1. Field bindweed (*Convolvulus arvensis* L.) Split decision; further discussion in Round 3. It will remain prohibited noxious in the meantime. **E**

2. Purple loosestrife (*Lythrum salicaria* L.) There was no agreement for this species to be designated prohibited noxious. **F**

There was a suggestion to put it in Class 2, Primary Noxious. The Central Seed Lab will look into its distribution and occurrence as a contaminant in seed. **D**

3. Serrated tussock (*Nassella trichotoma* (Nees) Hack. ex Arechav.) There was strong agreement to make this species prohibited noxious. **A**

4. Downy brome (*Bromus tectorum* L.) There was little agreement on how to handle this species. The CFIA continues to receive correspondence urging that this weed be classified as primary noxious. A review of its distribution and occurrence is found in Appendix 3 and indicates that classification as a secondary noxious weed seed would not affect trade unduly while providing some control. **C**

5. Jointed goatgrass (*Aegilops cylindrica* Host) There was strong agreement that this species be designated prohibited noxious. **A**

6. Hairgrass (*Ventenata dubia* (Leers) Coss.) There was no agreement on this species. Further discussions in Round 3. **E**

Class 2, Primary Noxious Weed Seeds (Applicable to all tables of Schedule I except Tables XIV and XV)

1. It was proposed in the Round 1 document to add wild tomato, spreading dogbane and perhaps downy brome to Class 2. From comments received it was suggested that wild tomato and spreading dogbane would not be appropriate additions. **F**

2. Respondents suggested the addition of foxtail barley, hawk's-beard, chess, scentless chamomile and Persian darnel. A suggestion was also received to move wild radish to secondary from primary noxious, particularly for Table II. **D**

3. Others suggested that wild mustard and wild radish be removed from Class 2 and become other weed seeds (Class 6), except in the case of Table VII (canola and mustard). **D**

If Round 2 demonstrates general agreement for any of these suggestions they could be fast tracked. Otherwise they will be further discussed during Round 3.

Class 3, Secondary Noxious Weed Seeds (Applicable to all tables of Schedule I except Tables XIV and XV)

1. There was some agreement that different types of wild oats (e.g., hybrid fatuoids) should be included in the description of wild oats. Currently, only *Avena fatua* L. is identified. The amendment will be proposed pending further discussion. **B**

2. It was suggested that *Avena sterilis* be included in the description of wild oats. **D**

3. It was suggested that green foxtail, yellow foxtail, hawk's-beard and wild buckwheat be added. **D**

4. Another suggestion was to remove dock and stinkweed from Class 3. **D**

Class 5, Noxious Weed Seeds (Applicable to Tables XIV and XV of Schedule I)

1. It was proposed in Round 1 to add tansy, Canada thistle, scentless chamomile and spreading dogbane to Class 5. One suggestion received was that there should be no additions while another comment was that the proposed additions apply to Table XV only. If Round 2 demonstrates general agreement for the second suggestion it could be fast tracked. Otherwise it will be further discussed during Round 3. **C, D, E**

Tables of Grade Standards

Table I

There was general agreement, with two strongly dissenting respondents, to the proposal to change the maximum number of ergot bodies per kg from 1 to 2 for both Canada Certified No. 1 and Common No. 1. **B**

Table II

1. It was generally agreed that the standards for the forages in this table are too strict and that a separate table should be created, columns specific to sainfoin and the vetches added or footnotes used to amend the weed seed and other crop seed standards. **B**

2. There was some agreement that the standards in Table V are too strict for open pollinated, oilseed sunflower. Please refer to Appendix 5 for proposed standards. **B**

3. There was general agreement to amend the *Canadian Methods and Procedures for Testing Seed* to permit the addition of hard seeds to the germination count for plough down lentils. **B**

4. There was general agreement that intact heads of *Malva* spp. should be considered as secondary noxious weed seeds. If the seed head is not intact it will be broken into its component parts which will be counted as other weed seeds. **B**

5. There was no agreement on reclassification of wild radish at this time. However, see Class 2, item 3 under section 10, Revise Weed Seeds Order in the Generic Issues discussion. It may be discussed further in Round 3. **E**

6. There was general agreement that a lower germination standard should be established for hulless seeds, e.g., 75% for No. 1 seed and 65% for No. 2 seed. **B**

Table III

1. There was general agreement that the germination standards required in Table III should be the same as the standards in the "Table of origin", e.g., Table II for oats and barley, Table V for peas, etc. **B**

Table IV

1. There was no agreement on the proposal to permit one couchgrass seed in flax. **E**

2. There was general agreement to reduce the number of wild oat seeds permitted in flax to 0 from 0.5 per 25 g (0 per 100 g working sample) in Foundation No. 2, Registered No. 2 and Certified No. 1. **B**

3. It was agreed that the standard for other crop seeds should be reviewed and changes proposed if warranted. **B**

Table V

1. It was generally agreed that Table V should specifically apply to field crops only. **B**

2. Garden beans and peas will be moved to Table XVIII. **A**

3. There was no agreement on the addition of chickling vetch, peanut and flat pea. These species can continue to be sold in Canada, ungraded but meeting the standards set out in Table V as set out in subsection 6(2), *Seeds Regulations*. **E**

4. There was complete agreement that additional descriptors should be added where appropriate but also a recognition, particularly in the case of bean (*Phaseolus vulgaris*), that the list could be quite long. **A**

5. It was agreed to lower the germination standard for safflower to the same as for peas. **A**

6. There was general agreement with the establishment of an anthracnose standard for field beans. There was one strong objection. **B**

Another respondent suggested that it be handled in a similar manner to loose smut in barley - state a specific seed standard but permit treatment with a registered pest control product, if one exists. Please refer to appendix 6 for proposed standards. **D**

7. A review of the analysis results for open pollinated corn, sunflower and safflower has not been completed. There was general agreement to modify the standards. **B**

Table VI

It is suggested that provision be made for the certification of high oil hybrid corn blends. **D**

Table VII

1. There was agreement that the nomenclature of *Brassica* should be reviewed. **A**

2. It was agreed that the layout of the table should be reworked regarding oilseed/forage, spring/winter, canola/rapeseed. **A**

3. There was no agreement on removing the Registered grades from the Table. **F**

4. It was agreed to increase the Canada Foundation No. 2 germination standard to 80 percent. **A**

5. Respondents indicated that they would like to see the term "Canola" restricted to pedigreed seed of Canola-type varieties or common seed that has been tested and that meets the standard for Canola. **A**

It is likely that Canola quality mustard will be marketed as such and some decision should be taken as to the common name designation of these varieties. **C**

There is a suggestion that seed be labelled *B. napus*, *B. rapa* or *B. juncea* instead of canola or rapeseed or mustard. This could resolve some of the nomenclature difficulties we are now encountering with these species. **D**

6. There was general agreement that oilseed radish should be listed in Schedule I but it was unclear whether Table VII was the appropriate table. As this crop is generally used as a green manure the tight weed and other crop seed standards of Table VII may not be appropriate. Comments received pursuant to Round 2 will determine which table will be proposed for this crop. **B**

7. There was no clear agreement on the establishment of blackleg standards for Canola. This issue will be further discussed in Round 3. **E**

8. It was suggested that the standards for *B. napus* in *B. rapa* and *B. rapa* in *B. napus* should perhaps be removed as seed coat characteristics are no longer consistently reliable for distinguishing the species.
D

Table VIII

1. There was not any agreement on modifying the standards. A review of seed quality has been initiated and this issue will be further discussed in Round 3. **E**

2. A majority of respondents favoured removal of Lespedeza but one questioned the need to. **C**

3. Most comments favoured removal of the registered grades although it was pointed that sometimes American product may be imported of this class. **C**

4. There was agreement to add *Phacelia tanecetafolia*. **A**

Table IX

1. One respondent indicated that the proposed standards should not be a problem; another thought they were too tight. To be discussed further in Round 3. **E**

2. While some agreed with the addition of *Kochia scoparia* others questioned why we would want to add a weed to this table. It can be sold under 6(2) and discussed further in Round 3. **E**

3. There was no agreement on the addition of native legumes to this table. **E**

4. We will leave the Registered grades in place. **F**

Table X

1. There was no agreement on modifications to the standards proposed. There appears to be general agreement that the current standards are too lax and could be improved. The Association of Official Seed Certifying Agencies (AOSCA) and others have requested that Canada's standards for bird's-foot trefoil be more closely aligned with its guidelines. To be discussed further in Round 3. **E**

2. The Registered grades will be retained. **F**

Table XI

1. There was no agreement on modifications to the standards proposed. To be discussed further in Round 3. **E**

2. There was no agreement on the addition of native grasses to this Table. **E**

3. There was agreement to add tall fescue to column VII. **A**

Table XII

1. There was agreement to add *Poa supina* with the understanding that it is not separated from other Poas. **A**

2. Weeping alkali grass will not be removed. **F**

Table XIII

1. There was no agreement on modifications to the standards proposed. To be discussed further in Round 3. **E**

2. There was no agreement on establishment of pure seed/inert standards for this Table. Please refer to issue 7 under Generic Issues. **E**

Table XIV

1. There was no agreement on modifications to the standards proposed. To be discussed further in Round 3. **E**

2. It was agreed that "lawn seed" should replace "lawn grass" in this Table. **A**

3. It was agreed that the order of the rows should be reversed to give prominence to certified mixtures. **A**

4. The CSGA submission indicated support for Canada Certified Lawn Seed Mixtures but division on issue 5 under Generic Issues. **A, B**

Table XV

1. It was confirmed that "Mélange couvre-sol" is an appropriate French term.

2. There were several varying comments concerning the germination standards for this Table. It is proposed that a column be added to deal with reed canarygrass and specify in the Regulations that the other column applies to all other listed species. **D**

3. The pure seed standard will be discussed further under Round 3. **E**

Table XVI

1. There was unanimous agreement that the Mayweed standard should apply to all species in this table. **A**

Table XVIII

1. It was agreed that bean should be added to this table. **A**

2. There was general agreement to remove "for home gardens". This table would then apply to all vegetable-type seed no matter where or how grown. **B**

3. The following definition, slightly modified from the Recommended Uniform State Seed Law (RUSSL) is proposed:

> "Vegetable type" with respect to seed, includes the seeds of species and kinds that are grown in home and market gardens and are generally known and sold under the designation of vegetable seed in Canada. **D**

4. There was unanimous agreement to add peanut from the CSGA respondents, but disagreement from the vegetable trade. As this table applies to vegetable-type seed, consideration should be given to the wishes of the vegetable trade. **C**

5. There was general agreement to remove the word "sweet" from the sweet corn column so that the standards will apply to both sweet and pop corn. **B**

6. CSGA respondents were divided on whether to lower the corn germination by 5 percent, but the vegetable trade would like this. As this table applies to vegetable-type seed, it is proposed that the germination standard be lowered by 5 percent. **B**

7. There was unanimous agreement to change the pea column to read "other kinds", thereby including chickpeas. **A**

Table XIX

1. There was agreement to add *B. chinensis* and *B. pikenensis*. **A**

2. There was agreement to review the nomenclature. **A**

3. There was agreement to remove "vegetable" from kale so that this table can be used to grade forage kale as well. **A**

Table XX

1. There was agreement to review the nomenclature. **A**

2. There was agreement to add fenugreek from the CSGA but questions from the vegetable trade regarding this issue. **C**

3. There was agreement to add other species from the CSGA but questions from the vegetable trade regarding this issue. This should be further discussed during Round 3. **C**

SUMMARY OF CLASSIFICATIONS

A - Strong/unanimous agreements - proceed with regulatory amendments

Generic Issues

There was strong agreement for harmonization of botanical names throughout Schedule I and the Weed Seeds Order while ensuring that the common names are retained.

There was strong agreement that unlisted species should meet the weed seed standard of an appropriate table and not a pure seed standard.

It was agreed that further clarification of “free from” and “prohibited” was desired.

Weed Seeds Order

There was strong agreement to make serrated tussock (*Nasella trichotoma* (Nees) Hack. ex Anechav.) prohibited noxious.

There was strong agreement that jointed goatgrass (*Aegilops cylindrica* Host) be designated prohibited noxious.

Tables of Grade Standards

Table IV - It was agreed that the standard for other crop seeds should be reviewed and changes proposed if warranted.

Table V - Garden beans and peas will be moved to Table XVIII.

There was complete agreement that additional descriptors should be added where appropriate.

Table VII - There was agreement that the nomenclature of *Brassica* should be reviewed.

It was agreed that the layout of the table should be reworked regarding oilseed/forage, spring/winter, canola/rapeseed.

It was agreed to increase the Canada Foundation No. 2 germination standard to 80 percent.

Table VIII - There was agreement to add *Phacelia tanecetafolia*.

Table XI - There was agreement to add tall fescue to column VII.

Table XII - There was agreement to add *Poa supina*.

Table XIV - It was agreed that “lawn seed” should replace “lawn grass” in this table.

It was agreed that the order of the rows should be reversed to give prominence to certified mixtures.

It was agreed that Canada Certified Lawn Seed Mixtures would be a good idea.

Table XVI - There was unanimous agreement that the Mayweed standard should apply to all species in this table.

Table XVIII - It was agreed that bean should be added to this table.

There was unanimous agreement to change the pea column to read “other kinds”.

Table XIX - There was agreement to add *B. chinensis* and *B. pikenensis*.

There was agreement to remove “vegetable” from kale.

B - General agreement

Generic Issues

Respondents generally agreed that government intervention should not be burdensome. Some were in favour of de-regulation while others appreciated the role of government in regulating seed.

Weed Seeds Order

There was some agreement that different types wild oats (e.g., hybrid fatuoids) should be included in the description of wild oats.

Grade Tables

Table I - There was general agreement to the proposal to change the maximum number of ergot bodies per kg from 1 to 2 for both Canada Certified No. 1 and Common No. 1.

Table II - It was generally agreed that the standards for the forages are too strict.

There was general agreement to amend the *Canadian Methods and Procedures for Testing Seed* to permit the addition of hard seeds to the germination count for plough down lentils.

There was general agreement that intact heads of *Malva* spp. should be considered as secondary noxious weed seeds when grading lentils.

There was general agreement that a lower germination standard should be established for hulless seeds.

Table III - There was general agreement that the germination standards required should be the same as the standards in the "table of origin", i.e., the table in Schedule I that lists the crop kind.

Table IV - There was general agreement to reduce the number of wild oat seeds permitted in flax to 0 from 0.5 per 25 g (i.e., 0 per 100 g working sample).

It was agreed that the standard for other crop seeds should be reviewed and changes proposed if warranted.

Table V - It was generally agreed that this table should apply to field crops only.

There was general agreement with the establishment of an anthracnose standard for field beans.

There was some agreement to modify the standards for open pollinated corn, sunflower and safflower.

Table VII - There was general agreement that oilseed radish should be listed in Schedule I but it was unclear whether this was the appropriate table.

Table XIV - The CSGA submission indicated some support for Canada Certified Lawn Seed Mixtures.

Table XVIII - There was general agreement to remove "for home gardens" in which would then apply to all vegetable-type seed no matter where or how grown.

There was general agreement to remove the word "sweet" from the sweet corn column so that the standards will apply to both sweet and pop corn.

The vegetable trade would like to lower the corn germination by 5 percent, but CSGA respondents were divided.

C - Further consideration required

Generic Issues

There was some division over the proposal to replace fractions, however, it could be agreeable with further clarification.

The trade was generally agreed that a change from varietal blends to certified blends would be beneficial, whereas the seed growers were somewhat divided.

There was general agreement for the addition of some species, however, there was also some questioning as to why bother.

Weed Seeds Order

Downy brome - There was little agreement on how to handle this species. A review of its distribution and occurrence indicates that classification as a secondary noxious weed seed would not affect trade unduly while providing some control.

It was proposed in Round 1 to add tansy, Canada thistle, scentless chamomile and spreading dogbane to Class 5 which applies to Tables XIV and XV only. One suggestion received was that the proposed additions apply to Table XV only.

Tables of Grade Standards

Table VII - It is likely that Canola quality mustard will be marketed as such and some decision should be taken as to the common name designation of these varieties.

Table VIII - A majority of respondents favoured removal of Lespedeza but one questioned the need to.

Most comments favoured removal of the registered grades although it was pointed that sometimes American product may be imported of this class.

Tables XVIII, XIX and XX - As these tables apply to vegetable-type seed, consideration should be given to the wishes of the vegetable trade to not add peanut, fenugreek, etc. although CSGA respondents were in favour.

D - Additional suggestions

Generic Issues

It was suggested that native species should be considered as other crop seeds, rather than weed seeds, when found as contaminants in other native species. Reference could be made to the AOSA Handbook 25 which indicates when a seed is either a crop or weed depending on the species under analysis.

There was a suggestion that varietal blends be extended to additional tables, e.g., Table VII (canola).

There was a suggestion that Canada should have a formal protocol for the addition of new species and for determination of an applicable grade table. The ISTA has guidelines for adding species to their testing protocol.

The CSGA suggested that the seed quality standards should be similar for all three pedigreed classes (Foundation, Registered and Certified).

Consider eliminating the Common grade, while establishing the current lowest standard as the Canadian minimum standard, applicable to all seed imported into or sold in Canada.

Weed Seeds Order

Purple loosestrife - There was a suggestion to put it in Class 2, Primary Noxious.

It was suggested that *Avena sterilis* be included in the description of wild oats.

Respondents suggested the addition of foxtail barley, hawk's-beard, chess, scentless chamomile and Persian darnel to Class 2.

A suggestion was also received to move wild radish to secondary from primary noxious, particularly for Table II.

Others suggested that wild mustard and wild radish be removed from Class 2 and become other weed seeds (Class 6), except in the case of Table VII (canola and mustard).

It was suggested that green foxtail, yellow foxtail, Hawksbeard and wild buckwheat be added to Class 3.

Another suggestion was to remove dock and stinkweed from Class 3.

It was proposed to add tansy, Canada thistle, scentless chamomile and spreading dogbane to Class 5 with the proposed additions applying to Table XV only.

Tables of Grade Standards

Table V - There was general agreement with the establishment of an anthracnose standard for field beans with one respondent suggesting that it be handled in a similar manner to loose smut in barley - state a specific seed standard but permit treatment with a registered pest control product, if one exists.

Table VI - It is suggested that provision be made for the certification of high oil hybrid corn blends.

Table VII - It is proposed that canola seed be labelled with the scientific name, e.g., *B. napus*, *B. rapa* and, if and when it becomes a reality, *B. juncea*.

It was suggested that the standards for *B. napus* in *B. rapa* and *B. rapa* in *B. napus* should perhaps be removed as seed coat characteristics are no longer consistently reliable for

distinguishing the species.

Table XV - It is proposed that a column be added to deal with reed canarygrass and specify in the Regulations that the other column applies to all other listed species.

Table XVIII - The following definition, slightly modified from the Recommended Uniform State Seed Law (RUSSL) is proposed:

> "Vegetable type" with respect to seed, includes the seeds of species and kinds that are grown in home and market gardens and are generally known and sold under the designation of vegetable seed in Canada.

E - Strong Division

Generic Issues

Standards for pure seed/inert. It should be noted that in the vast majority of situations, separation and weighing would not necessarily be required - a visual screening test could be employed.

Weed Seeds Order

Field bindweed Split decision; it will remain prohibited noxious in the meantime.

Ventenata dubia (Hairgrass) There was no agreement on this species.

Tansy, Canada thistle, scentless chamomile and spreading dogbane added to Class 5.

Tables of Grade Standards

Table II - There was no agreement on reclassification of wild radish at this time.

Table IV - There was no agreement on the proposal to permit one couchgrass seed in flax.

Table V - There was no agreement on the addition of chickling vetch, peanut and flat pea.

Table VII - There was no clear agreement on the establishment of blackleg standards for Canola.

Table VIII - There was not any agreement on modifying the standards.

Table IX - One respondent indicated that the proposed standards should not be a problem; another thought they were too tight.

While some agreed with the addition of *Kochia scoparia* others questioned why we would want

to add a weed to this Table.

There was no agreement on the addition of native legumes to this Table.

Table X - There was no agreement on modifications to the standards proposed. There appears to be general agreement that the current standards are too lax and could be improved. The Association of Official Seed Certifying Agencies has asked Canada to tighten standards for certified seed.

Table XI - There was no agreement on modifications to the standards proposed.

There was no agreement on the addition of native grasses to this Table.

Table XIII - There was no agreement on modifications to the standards proposed.

There was no agreement on establishment of pure seed/inert standards for this Table.

Table XIV - There was no agreement on modifications to the standards proposed.

Table XV - The pure seed standard will be discussed further under Round 3.

F - Unanimous/near unanimous disagreement

Generic Issues

Expiry dates for germination tests; however, refer to "B" list with respect to canola.

Weed Seeds Order

Purple loosestrife - There was no support for its listing as prohibited noxious.

Wild tomato, spreading dogbane and downy brome - There was no support for the addition of the first two species to Class 2, Primary Noxious Weed Seed but some support for downy brome.

Tables of Grade Standards

Table VII - There was no support to remove the Registered grades.

Table IX - The registered grades will be left in place.

Table X - The Registered grades will be maintained.

Table XII - Weeping alkali grass will not be removed.

Appendix 1: List of name changes due to harmonization with GRIN nomenclature

GRIN changes to nomenclature of Canadian crop species

GT	Schedule I name	GRIN name	Common Name
I	*Triticum durum*	*Triticum turgidum subsp. durum*	Wheat, Durum
II	*Triticum dicoccum*	*Triticum turgidum subsp. dicoccon*	Emmer
IV	*Sorghum almum*	*Sorghum x almum*	Sorghum/Sudandgrass hybrids
IV	*Sorghum sudanense*	*Sorghum x drummondii*	Sudan Grass
VII	*Brassica campestris*	*Brassica rapa subsp. rapa*	Rapeseed, Polish type
VIII	*Echinochloa crus-galli var. frumentacea*	*Echinochloa frumentacea*	Millet, Japanese
VIII	*Lespedeza stipulacea*	*Kummerowia stipulacea*	Lespedeza, Korean
VIII	*Lespedeza striata*	*Kummerowia striata*	Lespedeza, Common or Kobe
VIII	*Melilotus alba*	*Melilotus albus*	Sweetclover, White-blossom
VIII	*Panicum miliaceum*	*Panicum miliaceum subsp. miliaceum*	Millet, Proso
VIII	*Pennisetum americanum*	*Pennisetum glaucum*	Millet, Pearl
XI	*Agropyron dasystachyum*	*Elymus lanceolatus*	Wheatgrass, Northern
XI	*Agropyron elongatum*	*Elytrigia elongata*	Wheatgrass, Tall
XI	*Agropyron intermedium*	*Elytrigia intermedia*	Wheatgrass, Intermediate
XI	*Agropyron riparium*	*Elymus lanceolatus*	Wheatgrass, Streambank
XI	*Agropyron sibiricum*	*Agropyron fragile subsp. sibiricum*	Wheatgrass, Siberian
XI	*Agropyron smithii*	*Pascopyrum smithii*	Wheatgrass, Western
XI	*Agropyron spicatum f. inerme*	*Pseudoroegneria spicata*	Wheatgrass, Beardless
XI	*Agropyron trachycaulum*	*Elymus trachycaulus*	Wheatgrass, Slender
XI	*Agropyron trichophorum*	*Elytrigia intermedia*	Wheatgrass, Pubescent
XI	*Elymus angustus*	*Leymus angustus*	Wild-rye, Altai
XI	*Elymus junceus*	*Psathyrostachys juncea*	Wild-rye, Russian

GT	Schedule I name	GRIN name	Common Name
XI	*Festuca longifolia*	*Festuca brevipila*	Fescue, Hard
XI	*Lolium hybridum*	*Lolium x hybridum*	Ryegrass, Intermediate
XVI	*Beta vulgaris*	*Beta vulgaris subsp. vulgaris*	Beet
XVI	*Beta vulgaris var. cicla*	*Beta vulgaris var. flavescens*	Swiss Chard
XVI	*Beta vulgaris var. saccharifera*	*Beta vulgaris subsp. vulgaris*	Beet, Sugar
XVI	*Beta vulgaris*	*Beta vulgaris subsp. vulgaris*	Mangel
XVII	*Cucurbita pepo var. medullosa*	*Cucurbita pepo*	Marrow, Vegetable
XVII	*Cucurbita pepo var. citrullinina*	*Cucurbita pepo*	Pumpkin
XVIII	*Zea mays var. praecox*	*Zea mays*	Corn, Pop
XVIII	*Zea mays var. rugosa*	*Zea mays*	Corn, Sweet
XIX	*Brassica campestris*	*Brassica rapa*	Rape, Forage
XIX	*Brassica chinensis*	*Brassica rapa subsp. chinensis*	Pak choi
XIX	*Brassica oleracea var. botrytis var. italica*	*Brassica oleracea var. botrytis*	Broccoli
XIX	*Brassica oleracea var. bullata*	*Brassica oleracea var. gemmifera*	Brussels Sprouts
XIX	*Brassica pekinensis*	*Brassica rapa subsp. pekinensis*	Chinese Cabbage
XIX	*Brassica rapa var. rapa*	*Brassica rapa subsp. rapa*	Turnip
XX	*Cynara scolymus*	*Cynara cardunculus*	Artichoke
XX	*Hibiscus esculentus*	*Abelmoschus esculentus*	Okra
XX	*Lactuca sativa var. asperangia*	*Lactuca sativa var. angustana*	Celtus
XX	*Lycopersicon lycopersicum*	*Lycopersicon esculentum*	Tomato
XX	*Nasturtium officinale*	*Rorippa nasturtium-aquaticum*	Cress, Water
XX	*Rheum rhaponticum*	*Rheum rhabarbarum*	Rhubarb
XX	*Valerianella olitoria*	*Valerianella locusta*	Cornsalad

GRIN changes to nomenclature of Canadian noxious weed species

Class	Current Name	GRIN Name	Common Name
1° Nox.	*Agropyron repens*	*Elytrigia repens*	couch grass
1° Nox.	*Astralagus decumbens*	*Astragalus miser*	timber milk-vetch
2° Nox.	*Camelina parodii*	*Camelina sativa*	flat-seeded false flax
Proh. Nox.	*Centaurea repens*	*Acroptilon repens*	Russian knapweed
1° Nox.	*Chrysanthemum leucanthemum*	*Leucanthemum vulgare*	ox-eye daisy
2° Nox.	*Ducus carota*	*Daucus carota* subsp. *carota*	wild carrot
2° Nox.	*Lappula echinata*	*Lappula squarrosa*	stickseed
2° Nox.	*Lappula redowskii*	*Lappula occidentalis*	western stickseed
2° Nox.	*Matricaria perforata*	*Tripleurospermum perforatum*	scentless chamomile
Proh. Nox.	*Odontites serotina*	*Odontites verna* subsp. *serotina*	red bartsia
Proh. Nox.	*Oxytropis macounii*	*Oxytropis sericea*	early yellow locoweed
OW	*Rumex maritimus* var. *fueginus*	*Rumex maritimus* var. *persicarioides*	golden dock
2° Nox.	*Saponaria vaccaria*	*Vaccaria hispanica*	cow cockle
1° Nox.	*Lychnis alba*	*Silene latifolia* subsp. *alba*	white cockle
Proh. Nox.	*Triglochin maritima*	*Triglochin maritimum*	seaside arrow-grass
Proh. Nox.	*Zygadenus elegans*	*Zigadenus elegans*	white camas
Proh. Nox.	*Zygadenus gramineus*	*Zigadenus venenosus* var. *gramineus*	death camas

Appendix 2: Replacing fractions in the grade tables of Schedule I to the *Seeds Regulations*

From the Round 1 consultation document:

Numbers that are less than one but more than zero (0.1, 0.2 and 0.5) appear in Tables I, II, III, IV, V and XVIII. As parts of seed are not common what do these numbers mean? Does 0.1 mean 1 per 10 kg and therefore require that at least 10 kg are examined? (In fact statistics would suggest that at least 30 kg be examined to have a reasonable level of confidence that the standard has been met). Why does a larger sample need to be examined for a standard of 0.5 than for a standard of zero?

In the UK they do not use fractions, but instead will have a zero in the table and use footnotes to provide exemptions, e.g., "one seed of dodder in a sample of the size specified ... shall not be regarded as an impurity if a second sample of the same size is free from dodder".

Proposal:

It is suggested that the number zero (0) replace all fractions and amendments made to section 7 to include wording for the various grade tables as follows:

Table I - Notwithstanding Table I to Schedule I, Canada Foundation No. 2 seed and Canada Registered No. 2 seed may contain one secondary noxious weed seed per 10 kg.

Table I - Notwithstanding Table I to Schedule I, Canada Certified No. 2 seed may contain one secondary noxious weed seed per 2 kg.

Table II - Notwithstanding Table II to Schedule I, Canada Foundation No. 2 seed oats and Canada Registered No. 2 seed oats may contain one secondary noxious weed seed per 10 kg.

Table II - Notwithstanding Table II to Schedule I, Canada Certified No. 1 seed oats may contain one secondary noxious weed seed per 2 kg.

Table II - Notwithstanding Table II to Schedule I, Canada Foundation No. 2 seed other than oats, Canada Registered No. 2 seed other than oats and Canada Certified No. 1 seed other than oats may contain one secondary noxious weed seed per 5 kg.

Table III - Notwithstanding Table III to Schedule I, Canada Certified No. 1 Cereal Mixture seed may contain one secondary noxious weed seed per 5 kg.

Table IV - Notwithstanding Table IV to Schedule I, Canada Foundation No. 2 seed, Canada Registered No. 2 seed and Canada Certified No. 1 seed may contain one secondary noxious weed seed per 2 kg.

Table IV - Notwithstanding Table IV to Schedule I, Canada Foundation No. 1 seed and Canada Registered No. 1 seed of sorghum, sudangrass and canarygrass may contain one other crop seed per 25 g.

Table V - Notwithstanding Table V to Schedule I, Canada Foundation No. 2 seed may contain one other crop seed per 2 kg.

Table XVIII - Notwithstanding Table XVIII to Schedule I, Canada Foundation No. 2 seed may contain one other crop seed per 2 kg.

The Specific Work Instruction SWI 132.1.3 "Seed Grading From a Sample" would be amended as appropriate to describe the steps that a grader would take in situations where a "zero-rated" contaminant is found in the initial quantity of seed examined. For example, if a wild oat is found in an initial five kg of foundation status wheat a subsequent quantity of five kg would have to be examined and found to be free of wild oats, for the seed to qualify for grading as Canada Foundation No. 2 seed, all other standards having been met.

We may also wish to consider, in the case of secondary noxious weed seeds only, whether the current "0.0" is an absolute "0". There was a recent case where a grader found a wild oat in the ninth kg examined (even though he was obliged to examine only five kg). A further 41 kg of seed was examined and no wild oats found. Rather than encouraging graders to stop looking at seed once the minimum quantity has been examined, should we be encouraging larger samples while allowing some weed seeds at very low frequencies?

Appendix 3: Occurrence of Downy brome (*Bromus tectorum*) in samples analysed in the CFIA Saskatoon and Ottawa laboratories.

D. Ashton, Central Seed Laboratory, CFIA, Ottawa, August 6, 1998

This report was compiled in response to enquiries by Seed Section as to the occurrence of Downy brome, to aid in deciding whether this species should be classified as a noxious weed.

Notes:
1. EXP (export) samples are excluded from the survey because weed seed data are not captured for export samples.
2. No numbers of seeds are reported for Grade Table XII (bluegrass, etc.) Table XIV (lawn mixtures) or XV (ground cover) because the standard is a percentage by weight.
3. Sample codes: OFL = foreign lab which is equivalent to IOM (import official monitoring)
4. No. of seeds is expressed per 25 g

1994-1995

Total samples analysed for purity (excluding EXP): Table XI: 359; Table XIII: 323

Region	Sample No.	No. Seeds	Crop kind
4	ONP44-7903	2	Mixture, Forage
5	ONP45-6495	*	Bluegrass, Kentucky
7	IOM47-0348	2	Ryegrass, Annual
8	INV48-0072	16	Bromegrass, Smooth
8	INV48-0077	4	Fescue, Red
8	IOM48-0045	4	Wheatgrass, Beardless
8	IOM48-0132	4	Bromegrass, Smooth
9	IOM49-0033	2	Wheatgrass, Western
9	IOM49-0134	1	Wheatgrass, Northern
9	IOM49-0388	16	Wheatgrass, Streambank
9	OAL49-0127	3	Wheatgrass, Crested Fairway
9	ONP49-0030	4	Grass, Green Needle
9	ONP49-0310	8	Wheatgrass, Intermediate
9	ONP49-0369	2	Wheatgrass, Intermediate
9	ONP49-0370	20	Wheatgrass, Intermediate

Total samples containing Downy brome: 15
No. that would not meet the Canadian minimum weed seed standard if Downy brome was a secondary noxious weed seed: 3; as a percentage of total no. of samples: 0.44%
Predominant grade table: Table XI, 13/15 = 87%
Proportion of Grade Table XI samples: 13/359 = 3.6%
Predominant crop kind: Wheatgrass 8/15 = 53%

1995-1996

Total samples analysed for purity (excluding EXP): Table XI: 306; Table XIII: 416

Region	Sample No.	No. Seeds	Crop kind
04	IOM54-8535	22	Bromegrass
05	INV55-7668	2	Bromegrass, Smooth
05	OAE55-7255	4	Bromegrass, Sweet
05	ONP55-7690	*	Mixture, Lawn Grass
06	IOM56-4056	1	Ryegrass, Perennial
06	IOM56-8862	12	Fescue, Red
06	ONP56-7367	2	Mixture, Forage
07	IOM57-5306	24	Fescue, Red
07	OAL57-1510	2	Mixture, Forage
08	INV58-2314	1	Wheatgrass, Northern
09	INV59-5473	1	Wheatgrass, Western
09	INV59-5664	0.5	Bromegrass, Meadow
09	IOM59-1021	4	Wheatgrass, Northern
09	IOM59-2418	2	Grass, Green Needle
09	IOM59-2420	4	Wheatgrass, Northern
09	IOM59-3569	4	Wheatgrass
09	IOM59-5661	2	Wheatgrass, Slender
09	OAE59-4522	0.5	Wheatgrass, Western
09	OAL59-0097	4	Wheatgrass
09	OAL59-3947	2	Fescue, Tall
09	OAL59-3951	2	Wheatgrass
09	OFL59-3512	8	Bromegrass, Smooth

Total samples containing Downy brome: 22
No. that would not meet the Canadian minimum weed seed standard if Downy brome was a secondary noxious weed seed: 2; as a percentage of total no. of samples: 0.28%
Predominant grade table: Table XI, 19/22 = 86%
Proportion of Grade Table XI samples: 19/306 = 6.2%
Predominant crop kind: Wheatgrass 9/22 = 41%, Bromegrass 5/22 = 23%

1996-1997

Total samples analysed for purity (excluding EXP): Table XI: 317; Table XIII: 259

Region	Sample No.	No. Seeds	Crop kind
05	ONP65-6994	2	Mixture, Forage
06	IOM66-6101	1	Fescue, Hard
08	INV68-1334	*	Mixture, Ground Cover
09	IOM69-0098	2	Wheatgrass, Northern
09	IOM69-4868	36	Wheatgrass, Northern
09	OFL69-4258	0.5	Wildrye, Russian
09	ONP69-2565	3	Wheatgrass, Intermediate
09	ONP69-4647	12	Bromegrass, Smooth
09	ONP69-5175	6	Mixture, Forage
10	IOM60-2350	4	Ryegrass, Perennial

Total samples containing Downy brome: 10
No. that would not meet the Canadian minimum weed seed standard if Downy brome was a secondary noxious weed seed: 1; as a percentage of total no. of samples: 0.17%
Predominant grade table: Table XI, 7/10 = 70%
Proportion of Grade Table XI samples: 7/317 = 2.2%
Predominant crop kind: Wheatgrass 3/10 = 30%

1997 - 1998

Total samples analysed for purity (excluding EXP): Table XI: 241; Table XIII: 269

Region	Sample No.	No. Seeds	Crop kind
05	ONP75-6883	1	Mixture, Forage
05	ONP75-6893	6	Mixture, Forage
06	OAL76-5050	1	Fescue, Tall
06	OAL76-5395	3	Fescue, Chewing's
06	ONP76-0071	*	Mixture, Lawn Grass
06	ONP76-6797	26	Mixture, Forage
06	ONP76-7352	8	Mixture, Forage
08	IOM78-7635	20	Fescue, Hard
09	IOM79-7317	2	Wheatgrass, Northern
09	OAE79-6423	6	Wildrye, Altai
09	OAL79-6689	24	Wheatgrass, Pubescent
10	IOM70-7429	4	Fescue, Red

Total samples containing Downy brome: 12
No. that would not meet the Canadian minimum weed seed standard if Downy brome was a secondary noxious weed seed: 3; as a percentage of total no. of samples: 0.59%
Predominant grade table: Table XI, 7/12 = 58%
Proportion of Grade Table XI samples: 7/241 = 2.9%
Predominant crop kind: Mixtures 5/12 = 42%

* Total weed seeds standard is a percentage, not a whole number

SUMMARY

Over the past four years 2,490 samples of seed representing seed lots of forage grasses and forage mixtures have been analysed by CFIA seed laboratories as part of the Seed Program's marketplace monitoring program. Downy brome was found in a total of 55 samples (2.2% of samples). Of these, 9 samples (0.36%) would not have met Canadian minimum standards for weed seeds if downy brome had been a secondary noxious weed seed.

In addition, over 700 additional samples of turf seed, lawn seed mixtures and ground cover mixtures were also analysed over the past four years. Downy brome was found in 4 samples.

It is clear from these numbers, that classifying *Bromus tectorum* as a secondary noxious weed seed would not have serious consequences for the trade in seed, while addressing concerns of producers and other stakeholders, particularly in the more arid zones of eastern Alberta and southern Saskatchewan.

Class 2 (primary noxious) weed seeds do not apply to the grading of seed under Table XIV (lawn or turf grass mixtures) or Table XV (ground cover mixtures) - Class 5 noxious weed seeds applies to these mixtures. Therefore, concerns expressed by turfgrass vendors over classification of downy brome as a noxious weed seed are unfounded.

Appendix 4: Proposed Criteria For Various Classes Of Noxious Weed Seeds

The following proposals are based on the United States department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) criteria for Federal Noxious Weed Seeds. Their Pest Risk Assessment protocol may be reviewed on the web at:

http://www.aphis.usda.gov/oa/weeds/weedrisk.hmtl.

Their risk assessment procedures are harmonized with those of the North American Plant Protection Organization (NAPPO) and the International Plant Protection Convention (IPPC) of the United Nations Food and Agriculture Organization (FAO).

The definition of a **noxious weed**, according to the American Federal Noxious Weed Act of 1974 is:

> "any living stage (including but not limited to, seeds and reproductive parts) of any parasitic or other plant of a kind, or subdivision of a kind, which is of foreign origin, is new or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry or other interests of agriculture, including irrigation, or navigation, or the fish or wildlife resources of the United States or the public health."

This definition covers what would be roughly equivalent to our Prohibited Noxious Weed Seed species.

As defined by the FAO and NAPPO, a **quarantine pest** has

> "potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled."

This definition could also be considered in setting criteria for Prohibited Noxious Weed Seed species.

PROHIBITED NOXIOUS WEED SEEDS

Should be limited to species that meet the following criteria:

1. Have identifiable seeds (i.e. they can be separated from other species).

2. Have the potential to be serious weeds (directly or indirectly injure crops, parasitic, etc.) in at least part of Canada. In making this assessment the following need to be considered:

    i. Could the plant grow in Canada?
    ii. What is the host range (for parasites) or agricultural damage potential?
    iii. How rapidly can the plant disperse?
    iv. What would be its economic impact (e.g. loss of markets due to presence of a new quarantine pest)?
    v. What is the likelihood of it being introduced?

3. Are not native and have not yet reached the limits of their ecological range (i.e. are not yet widely distributed).

Note that the Prohibited Noxious Weed Seed category is not a grading factor. There are no standards for prohibited noxious weed seeds - they are essentially a quarantine measure. Should some allowance be permitted, however, for allowing seed lots that are identified as having prohibited noxious weed seeds at very low levels?

PRIMARY NOXIOUS WEED SEEDS

Should be limited to species that meet the following criteria:

1. Have identifiable seeds (i.e. they can be separated from other species).

2. Have demonstrated the capacity to be serious weeds in at least part of Canada.

3. Are native or, in the case of introduced species, have reached the limits of their ecological range (i.e. are widely distributed) in Canada.

4. Are difficult to eradicate or control once established in cultivated fields.

SECONDARY NOXIOUS WEED SEEDS

Should be limited to species that meet the following criteria:

1. Have identifiable seeds (i.e. they can be separated from other species).

2. Have the potential to be a serious weed (directly or indirectly injure crops) in at least part of Canada.

3. Are relatively easy to eradicate or control in cultivated fields.

CLASS I

Prohibited Noxious Weed Seeds
(Applicable to all tables of Schedule I to the Seeds Regulations)

***Astragalus bisulcatus* (Hook.) A. Gray** **Two-grooved Milk-vetch** **Astragale fondu**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states, although all *Astragalus* species are noxious in HI.

***Astragalus miser* Dougl. ex Hook.** **Timber Milk-vetch** **Astragale prostré**

This species is native in western Canada and has appeared in seed samples on rare occasions. It could be left on the Weed Seeds Order, if it is perceived to be a threat, as it is more easily recognized than most *Astragalus* species. However, I recommend that it be dropped as it is native and widespread and unlikely to move into new areas. It is not noxious in any of the states, although all *Astragalus* species are noxious in HI.

***Astragalus pectinatus* (Dougl. ex Hook.) Dougl. ex G. Don** **Narrow-leaved Milk-vetch** **Astragale peigné**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states, although all *Astragalus* species are noxious in HI.

***Carduus nutans* L.** **Nodding Thistle** **Chardon penché**

This species should be kept in the Weed Seeds Order as a Prohibited Noxious Weed Seed, but the listing should be changed to *Carduus* species. Several American states have already done this; all species are introduced and weedy and the seeds are very difficult to identify to species. *C. nutans* and *C. acanthoides* are known to hybridize, in Ontario at least. The seeds of the hybrids would be somewhat intermediate, making separation impossible. It is noxious in CA, CO, ID, KS, MI, MN, MO, NE, ND, OK, OR, SD, UT and WY. All *Carduus* species are noxious in DE, HI, MD, TN and VA. Various other *Carduus* species (especially *C. acanthoides*) are noxious in CA, MI, MN, NE, OR, SD and WY.

***Centaurea diffusa* L.** **Diffuse Knapweed** **Centaurée diffuse**

This species should be kept in the Weed Seeds Order as a Prohibited Noxious Weed Seed. It is introduced and is a serious weed. It is noxious in CA, ID, MT, NE, OR, UT and WY.

***Centaurea maculosa* Lam.** **Spotted Knapweed** **Centaurée maculée**

This species should be kept in the Weed Seeds Order as a Prohibited Noxious Weed Seed. It is introduced and a serious weed. It is noxious in CA, ID, MI, MT, NE, NC, OR, SD, UT and WY.

***Acroptilon repens* (L.) DC.** **Russian Knapweed** **Centaurée de Russie**

This species should be kept in the Weed Seeds Order as a Prohibited Noxious Weed Seed. It is introduced and a serious weed. It is noxious in AK, AZ, CA, CO, CT, GA, HI, IA, ID, IL, IN, KS, LA, MI, MN, MT, ND, NE, NV, NM, NY, OH, OK, OR, SC, TX, UT, WA and WY.

***Centaurea solstitialis* L.** **Yellow Star-thistle** **Centaurée du Solstice**

This species should be kept in the Weed Seeds Order as a Prohibited Noxious Weed Seed. It is introduced in the USA and is a serious weed. It is noxious in CA, HI, ID, MO, MT, NV, OR, UT, WA, WV and WY.

Note re *Centaurea* species:

I suggest that all *Centaurea* species (we could except *C. cyanus* which is widely grown as an ornamental) be considered for listing as prohibited noxious weed seeds. The introduced species are nearly all serious weeds and several other species are noxious in CA, NE, OR and UT. *C. iberica* and *C. melitensis,* in particular, are potential problems. In addition, identifying seeds to species is very difficult for analysts and is not really practical for those without special resources (i.e. extensive herbaria, good microscopes).

***Cicuta douglasii* (DC.) Coult. & Rose** **Western Water-hemlock** **Cicutaire pourpre**

This species is already a widespread native plant, which is restricted to damp areas. We receive seeds for identification only very rarely and, in my opinion, it should be dropped from the list. If it is kept it should be changed to *Cicuta* species. All species are toxic and they are very difficult to identify to species. Specific identification is not really practical for those without special resources.

***Convolvulus arvensis* L.** **Field Bindweed** **Liseron des champs**

This species is very widespread and very common in Canada. It certainly does turn up in samples, especially cereals. In fact, it is the only prohibited noxious that we see with any regularity (mostly in cereals). From the CFIA point of view, it probably should not be on the prohibited list as there is no question of protecting Canadian agriculture - it is much too late. I would recommend that it be treated like Couch grass - primary noxious. It is similar to Couchgrass in being a widespread perennial weed that has probably already reached the extent of its range in Canada, but which you do not want to plant in your field. It is noxious in AL, AK, AZ, AR, CA, CO, CT, DC, DE, FL, GA, HI, ID, IL, IN, KS, LA, MA, ME, MD, MI, MN, MS, MO, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, SC, SD, TN, TX, VT, VA, WA, WI, WV and WY. All *Convolvulus* species are noxious in PA, RI, and UT. It is also included in *The World's Worst Weeds* (Holm et al, 1977). *Convolvulus sepium* is also noxious in AL, AR, GA, HI, KS, LA, MI, MS, MO, NJ, NC, ND, OH, OK, SC, SD, TN, TX and WA. Should it be included as a noxious weed seed as well? We rarely, if ever, find it in samples.

***Delphinium bicolor* Nutt.** **Low Larkspur** **Pied-d'alouette bicolore**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the American states.

***Delphinium glaucum* S. Wats.** **Tall Larkspur** **Pied-d'alouette glauque**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

***Lupinus argenteus* Pursh** **Silvery Lupine** **Lupin argenté**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

***Oxytropis sericea* Nutt.** **Early Yellow Locoweed** **Oxytropis jaune hâtif**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states, although all *Oxytropis* species are noxious in HI.

***Sarcobatus vermiculatus* (Hook.) Torr.** **Greasewood**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

***Senecio jacobaea* L.** **Tansy Ragwort** **Sénéçon jacobée**

This species has appeared only very rarely in seed samples. I recommend that it be reduced from Prohibited to secondary noxious, as suggested by the CSGA. It is noxious in ID, OR and WA.

***Solanum carolinense* L.** **Horse Nettle** **Morelle de la Caroline**

This species could be kept in the Weed Seeds Order. It is a serious weed, but is probably native in southern Ontario, which raises the question of whether it shouldn't be down-graded to Primary Noxious. It is probably approaching its geographic limits. (See note below on the possibility of making all *Solanum* species Primary Noxious). It is noxious in AL, AK, AZ, AR, CA, CO, CT, DE, FL, GA, HI, IA, IL, IN, KS, LA, ME, MD, MA, MI, MN, MS, NE, NV, NH, NJ, NM, NY, NC, OH, OK, PA, RI, SC, SD, TN, TX, VT and WV.

***Thermopsis rhombifolia* (Nutt. ex Pursh) Richard.** **Golden-bean**

This species is native in western Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

***Triglochin maritima* L.** **Seaside Arrow-grass** **Trocart maritime**

This species is native in many areas of Canada and has not appeared in seed samples. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

***Zigadenus elegans* Pursh** **White Camas** **Zigadène vénéneux**
***Zigadenus venenosus* S. Wats.** **Death Camas** **Zigadène vénéneux**

These species are native in Canada and have not appeared in seed samples. I recommend that they be dropped from the Weed Seeds Order. If the Camas species are kept they should be listed as *Zigadenus* sp. The species are very difficult to separate and all the plants are very toxic. They are not noxious in any of the states.

CLASS 2

Primary Noxious Weed Seeds
(Applicable to all tables of Schedule I to the Seeds Regulations Except Tables XIV and XV)

***Sorghum halepense* (L.) Pers.** **Johnson Grass** **Sorgho d'Alep**

This species should be kept in the Weed Seeds Order. It is introduced and a serious weed. As it is now wintering over in southwestern Ontario, demonstrating an ability to persist there, I suggest that it be considered for upgrading to Prohibited Noxious. It is noxious in AL, AR, CA, CO, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MI, MS, MO, NE, NJ, NM, NC, OH, OK, OR, PA, SC, TN, TX, UT, WA, WI and WV. It is also included in *The World's Worst Weeds* (Holm et al., 1977).

CLASS 3

Secondary Noxious Weed Seeds
(Applicable to all tables of Schedule I to the Seeds Regulations Except Tables XIV and XV)

***Cichorium intybus* L.** **Chicory** **Chicorée sauvage**

Should this species be kept in the Weed Seeds Order as a Secondary Noxious? It is introduced and a widespread weed in eastern Canada, but it is not a weed of cultivated fields. It is sometimes found in hayfields and pastures. The seeds do turn up from time to time but are not common in samples. It is not noxious in any of the states.

Lappula occidentalis* var. *occidentalis **Western Stickseed** **Bardanette de l'Ouest**

This species should be dropped from the Weed Seeds Order. It is native and we very rarely find the seeds, nor does it occur commonly in cultivated fields. Experienced analysts should have no problem separating the seeds from those of Stickseed. It is not noxious in any of the states.

CLASS 4

Secondary Noxious Weed Seeds
(Applicable to Table XII of Schedule I to the Seeds Regulations)

The weed seeds named in Class 3 and in addition :

***Glechoma hederacea* L.** **Ground-ivy** **Lierre terrestre**

This species is common and widespread in Canada, but we never find the seeds. It does not normally appear to spread by seed. I recommend that it be dropped from the Weed Seeds Order. It is not noxious in any of the states.

CLASS 5

Noxious Weed Seeds
(Applicable to Tables XIV and XV of Schedule I to the Seeds Regulations)

***Glechoma hederacea* L.** **Ground-ivy** **Lierre terrestre**

See note above under Class 4.

CSGA Proposals regarding the Weed Seeds Order

a. Remove Field Bindweed from prohibited.

See note under Class 1.

b. Add the following to prohibited:

Purple Loosestrife (*Lythrum salicaria*)

This introduced species is spreading rapidly and is beginning to show up in seed samples occasionally. Prohibited noxious seems to be over-reacting to me - it is not really a major agricultural problem - it grows in wetlands. It already grows in all provinces. Seed planted with crop seed is not an important means of spread in my opinion. It could be listed as Primary Noxious. It is noxious in ID.

Serrated Tussock (*Nassella trichotoma*)

I would support this only on the grounds that the presence of this species in seed lots affects our trading with other countries, especially the USA. I don't think the plant could overwinter anywhere in Canada. This species is noxious in AL, AR, DE, FL, HI, IL, MD, MI, MO, MS, NE, NC, OH, OK, OR, RI, SC, TN, TX, VT, VA, WA, WV and is on the Federal Noxious List. It has never been reported to grow in Canada or the USA.

Downy Brome (*Bromus tectorum*)

Prohibited noxious seems a bit of an over-reaction. It is already widespread. I would suggest that Primary or even Secondary Noxious would be more reasonable. In either case, there would be a definite impact on western forage grass lots which often contain this species. It is noxious in WI.

Upadhyaya, M.K., Turkington, R. and McIlvride, D. 1986. The Biology of Canadian weeds. 75. *Bromus tectorum*. Can. J. Plant Sci. 66:689-709.

Jointed Goatgrass (*Aegilops cylindrica*)

I don't know if this species will winter over in Canada (it hasn't been reported here yet), but it is a problem in Idaho and Oregon which are similar to southern B.C. I would support this suggestion. It has the potential to grow in our southern winter wheat areas where it would be extremely difficult to eradicate and also has been found to cross with the wheat. It is noxious in AL, CO, ID, KS, MT, NM, OK, OR, TX, UT, WA and WY.

Morishita, D.W. Undated. Biology of jointed goatgrass. http://ianrwww.unl.edu/ianr/jgg/conf/morish2.htm.

Hairgrass (*Ventenata dubia*)

I am puzzled by this one. This species has been showing up for years at low levels. Is there more information available? I cannot support this proposal based on the information we have at present. It is not noxious in any of the states; in fact it has been so little noticed that there is no widely-recognized common name for it. I can find no record of it persisting in Canada.

Move Tansy Ragwort to secondary.

See note above under Class 1. This seed is rarely found in samples. Therefore, the negative impact of having it listed as a prohibited noxious is minimal.

Add Wild Tomato (*Solanum triflorum*) to primary.

This species is a weed problem in the prairie provinces, but do they find the seed in samples? It is very low-growing so I suspect most of the spreading is done by birds or mammals eating the fruit. There would be a definite impact on seed analysis, since the *Solanum* species are notoriously difficult to separate. I see no significant difference between this species and the *Solanum nigrum* group with respect to weed characteristics. The Central Seed Lab would be inundated with seeds for identification as some of the "black nightshade" group (eg. *S. ptycanthum*) are quite common in samples. There are a number of *Solanum* species (other than *S. carolinense*) which are noxious in one or more of the following states: AL, AR, AZ, CA, CO, FL, GA, HI, ID, KS, LA, MI, MS, NV, NM, OK, KS, MI, SC, TX, WA. Several species are also on the Federal Noxious List, but these are tropical and therefore of less concern to Canada. *S. nigrum* is also included in *The World's Worst Weeds* (Holm et al, 1977). If any of the *Solanum* species are a concern, I would recommend listing the whole genus. This might create problems as some of the black nightshades turn up quite often in samples.

Bassett, I.J. and Munro, D.B.. 1985. The Biology of Canadian weeds. 67. *Solanum ptycanthum, S. nigrum* and *S. sarrachoides*. Can. J. Plant Sci. 65:401-414.

Add Spreading Dogbane (*Apocynum androsaemifolium*) to primary.

I am puzzled by this one. This species is widespread and common in oldfields but we have never heard of the seed turning up in samples. Is there more information available? I could find very little information on the weedy character of this species. I have certainly noticed it forming large patches in pastures but I doubt if it was planted there. It is a toxic plant but I would like to see us resist the tendency to use the WSO to control toxic plants if they are not being spread in seed. The plant is related to milkweed (*Asclepias* spp.) and is spread by the wind in the same way. Even though milkweed is common in fields we almost never see it in seed samples. Based on the information we have, I cannot support this proposal.

Add Downy Brome to secondary (or prohibited). See note above.

Add the following to Class 5:

Canada Thistle	I see no problem with this.
Scentless Chamomile	I see no problem with this.
Tansy Ragwort	As long as this is a prohibited noxious it doesn't need to be added to Class 5. If it is removed from the prohibited noxious list then I see no problem with adding it to Class 5.
Spreading Dogbane	See note above.

Prepared by:
Ken Allison
Seed Biologist
Central Seed Laboratory
Ottawa, Ontario
May, 1999

Appendix 5 TABLE

Applicable to:

(a) Sunflower (open pollinated), oilseed type - *Helianthus annuus* L.

I	II	III	IV	V	VI	VII
	Maximum Number of Seeds or Sclerotia Bodies per kg					Minimum Percent Germination
	Noxious Weeds		Total Weeds	Other Crops	Sclerotia Bodies	
GRADE NAME	PRIMARY	PRIMARY PLUS SECONDARY				
1. Canada Foundation No. 1	0	0	0*	1	6	85
2. Canada Foundation No. 2	0	0*	2	2	12	75
3. Canada Registered No. 1	0	0	0*	1	6	85
4. Canada Registered No. 2	0	0*	2	2	12	75
5. Canada Certified No. 1	0	0*	2	3	6	85
6. Canada Certified No. 2	0	1	4	6	12	75
7. Common No.1	1	2	6	5	10	85
8. Common No. 2	3	4	10	10	20	75

*Note: Canada Foundation No. 1 seed and Canada Registered No. 1 seed may contain one other weed seed per 2 kg.

Canada Foundation No. 2 seed and Canada Registered No. 2 seed may contain one secondary noxious weed seed per 5 kg.

Canada Certified No. 1 seed may contain one secondary noxious weed seed per 2 kg.