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**LA THÈSE A ÉTÉ
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Attitude Change in Prince Edward Island Farmers
Effectuated by a Multi-Media Production

M. Robert Gillis

A Thesis Equivalent

in

The Department

of

Education

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts at
Concordia University
Montreal, Québec, Canada

September 1986

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ABSTRACT

Attitude Change in Prince Edward Island Farmers Effectuated by a Multi-Media Production

M. Robert Gillis

The purpose of this thesis was to design and evaluate a media production aimed at encouraging P. E. I. farmers to grow two new varieties of ryegrass in place of their traditional timothy and clover forage crops. A total of 28 farmers were pretested, shown a 10-minute slide/tape format production and then given a post test to measure attitude change.

It was found that there was a significant attitude change toward acceptance of the new ryegrasses following intervention by means of a slide/tape presentation.

With farmers who had not previously grown ryegrass, 13 of 14 or 93% showed a desire to grow ryegrass after the treatment.

For those who had previously grown ryegrass, 9 of 11 or 82% showed a desire to grow more ryegrass as a result of viewing the production.

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CHAPTER I

The Problem

This thesis equivalent attempts to deal with an educational problem that exists in the farming community in Prince Edward Island, Canada. The problem was to find an effective way to encourage farmers to grow two new varieties of rye grass instead of the traditional timothy and clover forages. The following narrative gives a brief history, which helps explain the problem.

A Short History

The McCardle Bros. 138 acre farm on P. E. I. was used mainly for potato production from 1831 to the present. The three brothers, Fred, Leonard, and Frank, hold university degrees and decided to pool their skills in administration, business management and agriculture to expand the 138 acres to the present 1,500 acres which is comprised of both purchased and rented land.

Many characteristics of P. E. I. climate and soil make the island ideal for potato production for which it has become known the world over; however, the instability of the potato market creating boom or bust on a yearly basis caused the McCardle Bros. to look to other more stable crops as

their source of revenues. As a result they began growing seed grains and seed grasses.

The growing of certified seed of any kind requires adherence to government regulations with respect to disease control, product quality and purity. Certified seed assures adherence to strain characteristics such as plant or fruit quality, maturation time, disease resistance and climate requirements. Farmers could keep their own seed year after year but generally, the further one gets from certified seed in generations, the less the organism will adhere to its original strain characteristics.

Farmers growing crops for certified seed must be expert as requirements by the Department of Agriculture are rigorous but the payoff is a higher price for their product.

Ryegrass seed is not produced in Canada. Seed production in both Alberta and Ontario was attempted but in both cases the results were poor. (Heath, Metcalfe and Barnes, 1975.) As a result ryegrass seed for Canadian use is purchased from the U. S., most of which is produced in the state of Oregon.

Current Tests

In 1980 McCardle Bros. began experimenting with ryegrass seed production. They had already invested in equipment for harvesting timothy seed and being able to

harvest ryegrass with the same machinery made the project look even more desirable. They also have presently under construction, a 3/4 million dollar grain plant which will store, mix, clean and chemically treat grain for commercial sale. This plant will also be able to handle ryegrass seed.

The results of their test plots in ryegrass seed production were very encouraging. They began testing one variety in 1981 which had not been certified for use by the Canadian Department of Agriculture. It is a new variety which has been developed and patented in Britain and for which they purchased rights to sell as certified seed in 1984. They began growing it for experimental purposes and after learning many things about the variety by strictly trial and error basis, can now produce 1,100 kg/ha. This variety called Lental is now certified for use by the Department of Agriculture and is a perennial meaning it produces seed the second year. They also produce an annual variety called Aubade and both varieties grow exceedingly well in P. E. I.

P. E. I. has a total annual precipitation of 1086.8 mm with 1935.9 hours of bright sunshine and a temperature in winter which seldom falls below -8 c (Statistics Canada, 1984) so conditions for growing these two varieties of ryegrass on P. E. I. are ideal.

4

Ryegrasses have been traditionally used for hay and pasture in Australia, New Zealand, the British Isles, and the temperate regions of Europe. (Heath, Metcalfe and Barnes, 1975) The U. S. and Canada use ryegrass for sheep, dairy, and beef production. It is traditionally less winter hardy than certain other forage crops such as clover and timothy and as a result much more of these two crops is used in the Maritimes. 771,000 kg of timothy and clover were planted in the Maritimes in 1983 which is 5 times the 149,000 kg of ryegrass planted. (Agriculture Canada, 1984)

The recent tests conducted by McCardle Bros. showed that new varieties winter exceptionally well and this, together with characteristics which make ryegrass quite desirable for forage, organic matter and to prevent soil bleaching and erosion opens new markets for the crop at home and further possibilities exist for shipping ryegrass seed to Europe. The seed grasses are, at present, the smallest part of their operation and indeed make up only 17% of the total forages grown in the Maritimes but McCardles see them as having great potential for use as forage and organic matter by P. E. I. farmers and thus a marketable seed crop for their own business.

CHAPTER 2

Production Background and DesignPurpose of the Media Presentation

Farmers generally, are a difficult group to deal with where getting them to change their farming practices are concerned. (Rodgers and Burge, 1972) Larger corporate farms such as in Western Canada where the degree of mechanization is high, and owners tend to be highly educated in farming technology and business would be the exception, but the Maritimes and in particular, P. E. I., is dominated by small family farms. Farmers pass down their practices and techniques from generation to generation and take great pride in their methods. Change generally takes place over a long period of time.

Information channels to farmers come from word of mouth through local co-operatives; seed and fertilizer dealers; and local federal and provincial Department of Agriculture field personnel.

Department of Agriculture officials and representatives of various farm supply companies indicated to the author that print material goes largely unread. Chemical companies, in fact use a large color code on farm chemical containers indicating the degree of toxicity knowing full

well that beyond instructions on the type of mixture required for use, all other instructions will go unread.

Based on the nature of the target audience, it was felt a slide/sound production would be used to present information on the new ryegrass seed available. It could also be dubbed to the video format.

This format would be highly visual, portable, and the production short enough to maintain audience attention. (Witt, 1981) It also offered the potential to present graphics.

Target Audience

Viewers of the media presentation included two groups:

- 1) P. E. I. farmers
- 2) seed cooperatives personnel.

McCardle Bros. sell seed from the farm, however, much of the seed they produce is marketed through local cooperatives. It was necessary that managers and sales personnel of the cooperatives understand the uses and capabilities of ryegrass.

Educational Objectives

The objective of the media presentation was to inform farmers of the capabilities of the new pedigreed ryegrass seed and show them that it also has the same benefits as the

traditional forage crops plus several other advantages, thus encouraging him/her to grow it.

Farmers were already familiar with the timothy clover and fescues for forage, so the program built on this knowledge and presented a good deal of the information by comparison of these to the ryegrass.

Outline of Content and Format

The program, because of the nature of the target audience, was intended to be no longer than ten minutes in order to maintain audience attention. (Flemming and Levis, 1978) It contained 90 slides including graphics overlays in the form of print over pictures to give good visibility and a good comparative measure when contrasting forage varieties.

The production commenced by comparing and contrasting the new pedigreed ryegrass with the traditional timothy and clover. It then listed some additional benefits. The third part of the presentation focused on the recurring problems with foreign seed then examined the benefits of purchasing ryegrass seed from the new P. E. I. market. Finally it presented a brief interview with a farmer who had grown it and found it to be a good forage crop.

The program was designed to be viewed at an agricultural exhibition or at a seed sales office where the farmer has only a few moments to spend.

A Rationale for the Media Selection and Production Design

Since print material is not commonly used by the greater portion of the target audience, word of mouth could possibly have been another method of disseminating information. There were several problems implicit with this method 1) the "talking head" type of presentation has not shown itself to be an effective means of communicating information (Flemming and Levie, 1978). 2) the same information may not be communicated each time the presentation was made 3) the target audience may have a negative disposition towards a peer lecturing them on what to grow and how to grow it (Rodgers and Burdge, 1972).

These factors together with cost considerations and an understanding of the effectiveness of the a/v media in appealing to the senses (Witt, 1981) suggested the slide/sound format would be the most appropriate media. Several considerations, the most apparent being the general scarcity of slide/sound sync. mechanisms and conversely, the increasing availability of video systems made transferring the slide/sound presentations to video seem logical.

An examination of the material to be presented indicated a visual element would be required to show growth of crops over a summer period and also to make graphic comparisons of productivity and the like. At the same time, a need was perceived for pre-packaged presentation that would ensure all vital parts were covered each time the presentation was made. It was also decided that background audio would be used to heighten viewer interest in the production and lack of the audio/visual element would have made this impossible.

With the slide/sound format, slides were able to be shot over the past three years of the growing cycles of the ryegrasses. This was able to be done even before the production script was finalized. The last few slides that were found to be missing were then easily shot in the latter stages of the production.

The slide/sound format also added the flexibility of being able to manipulate the presentation after the pilot testing.

The production incorporated the relevant principles of instructional message design outlined by Dwyer (1978) and Flemming and Levie (1977). The story board presents the production in its entirety. (APPENDIX A)

The former interview at the end of the presentation was based on psychological modeling theories outlined by Bandura (1971) and Rogers (1983). This theory suggests that members of a particular population are more likely to accept a condition if they can see other accepted members of that same peer group embrace it.

Production Requirements

The following items were furnished by the author:

35 m.m. camera
close-up lenses
film (color slide)
slide trays
audio tape
audio tape recorder
microphone
video tape

School district #8 Newcastle, N. B., agreed to supply:

video camera
Beta I format V.C.R.
slide projectors
Wollensac audio sync. unit
Kodak slide dissolve unit

In addition Concordia University Avista provided:

-) slide duplicator
- Kroy lettering machine
- high contrast copy film
- photo duplicating machine

Concordia audio production studio was used for audio mixing.

CHAPTER 3

MethodEvaluation Method Rationale

Until recent years and indeed in many cases, to the present day, thousands of instructional products were distributed without being tested and revised prior to distribution. Studies have demonstrated that by simply trying out the materials on several learners and revising those materials on the basis of that test, a significant difference in the effectiveness of the materials can be realized. (Dick & Carey, 1985)

In 1967, Scriven first coined the term formative evaluation which is now held as the process used to obtain data for instructors' use to increase the efficiency and effectiveness of their instructional materials. Formative evaluation has its emphasis on collection of data and feedback in order to revise the instructional materials as opposed to summative evaluation which is recognized as being the final version in which people collect data to determine whether they are effective as claimed. (Romiszowski, 1981)

There are a number of models for formative evaluation. The literature generally holds that a continuous formative evaluation strategy is desirable with the number of evaluations varying from author to author. Dick and Carey,

(1978) present a three part formative evaluation, the strategies being; one to one evaluation, small group evaluation and field evaluation.

Another model, proposed by Saunders and Cunningham (1973) presents a four part evaluation, the stages being; predevelopmental activities, evaluation of objectives, formative interim evaluation and a formative product evaluation.

The reality of the situation, however, becomes apparent to us when we realize that all aspects of a production take time and cost money. Formative evaluation is critical in the educational context, but its limits are dictated by the constraints mentioned above.

Ardaway (1983) proposes a time-saving model for formative evaluation. It begins with a one-to-one review with subject matter experts with the early version designed to correct any errors with content. The next part combines pilot testing and field-testing into a single activity that is carried out on-site. In this model a working version is presented under actual field conditions but with groups small enough to simulate pilot testing.

Ardaway (1983) suggests this allows for the type of detailed feedback one requires in the formative evaluation process.

This paper uses a marginally more detailed formative evaluation method than proposed by Ardaway in that the one-to-one review with subject matter experts looked only at the slide/sound production. The combined pilot testing and field testing followed.

Production Evaluation

The slide/sound production itself was designed following a model presented by Dick and Carey (1978). A summary of the design process appears in figure 1.

Formative evaluation commenced with a presentation of the production to the client to insure no errors or omissions were apparent with regard to content.

The second part of the formative evaluation involved presentation of a pilot test to three members of the target audience. Testing occurred on an individual basis and care was taken to simulate the same type of conditions under which the final phase of the formative evaluation would occur with the rest of the intended audience.

The pilot testing of the three farmers indicated few, if any, difficulties with the slide/sound production (one farmer complained the sound was too loud) but numerous problems with the pre and post questionnaires were apparent. Most of the problems related to question clarity. After the

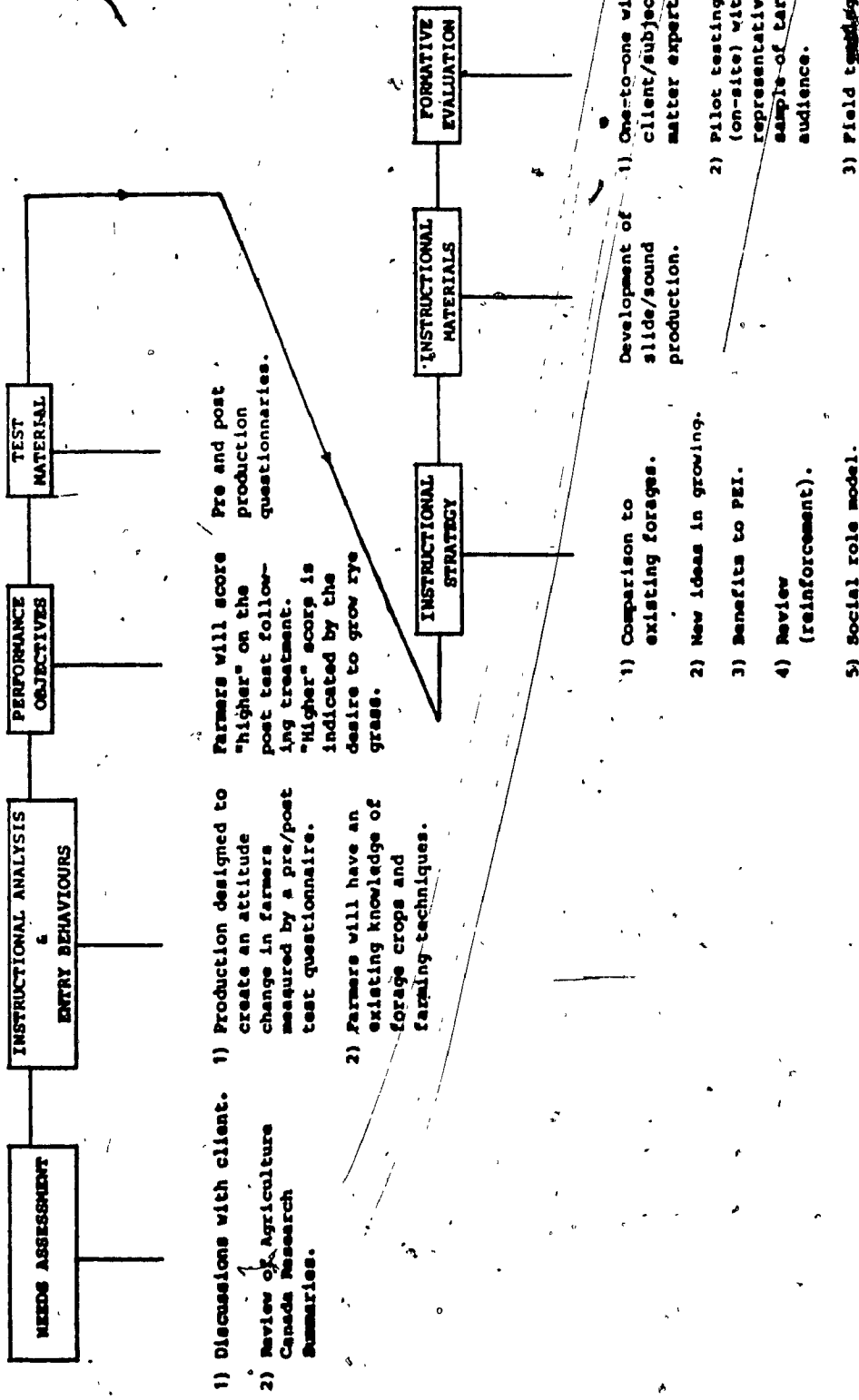


FIGURE 1. PRODUCTION EVALUATION DESIGN

first subject was pilot tested, the questionnaires were modified.

The second subject was pilot tested with the revised questionnaires and this presentation saw only minor changes. The third pilot tested subject indicated a workable presentation was ready as no major revisions were required at that point.

Testing Procedure

A total of 31 members of the target audience were tested. Twenty-two were tested in Kinkora, P. E. I., following a meeting of the P. E. I. Potato Producers Association. This was done by arrangement with the president of the P. E. I. Potato Producers Association who asked all members attending the meeting to stop at the adjacent room for a few minutes to see a production on ryegrass. It was thought that if only a small number of those in attendance appeared later for the presentation there would be a threat to internal validity by way of group bias (Drew, 1980). All but 2 attending the meeting came to the production.

Tables were set up in rows and after farmers had filled the seats a brief explanation of the procedure was presented. There were no questions.

The program presented to the target audience proceeded as follows:

- (1) pretest (4 minutes)
- (2) presentation of slide/sound production (10 minutes)
- (3) post test (2.5 minutes)

The pretest was distributed in such a way that each person had a test with a number on it which was between 1 and 22. Pencils were distributed. When the pretest questionnaire was complete, the production started immediately.

When the production was finished, the post test, which was numbered from copy 1 to 22, was distributed in such a way that the numbers matched--in other words, the respondent who received copy 1 of the pretest received copy 1 of the post test and so on.

When farmers finished, they placed their tests on the table and left the room.

Of the 22 who sat for the test, 3 did not complete the questionnaire.

It has been suggested by the P. E. I. Department of Agriculture that members of the P. E. I. Potato Producers Association represented a good cross-section of the farming community of P. E. I. and examination of questions 1 to 5 of the pretest bore this out.

Another 9 farmers were chosen at random from a list supplied by the P. E. I. Farm Bureau. Each was visited individually and presented with the slide/sound version of the production as opposed to the video format to prevent another possible threat to internal validity by way of instrumentation.

The video format was not used in any part of this testing procedure.

CHAPTER 4

Results and DiscussionTest Data SummaryThe Pretest

The pretest which contained 12 questions (Appendix B) opened by advising the respondents that it was not a government survey and that their names were not required. It was felt this would exact a more accurate and candid response from the target group.

Question 1 had an outline map of P. E. I. and asked farmers for a pencil mark indicating the general whereabouts of their farm. Not all subjects marked the map. A summary of the responses appears in Figure 2.

Question 2, which asked farmers to show the primary production of their farm had several respondents indicate more than one primary production area. The pretest responses summary appears in Table 1. Of all the responses, 21 were potato farmers and 17 collectively indicated beef, dairy, grain, and mixed farming. Potato farmers, then, were calculated to represent 55% of total responses while the other four categories accumulated 45% of the responses.

Twenty-five of 28 respondents were full-time farmers; 10 farmed their own land while 18 used both their own and rented land and 24 farmed more than 200 acres.



Figure 2 Distribution of Residence Locations of Respondents

TABLE 1
SUMMARY OF PRETEST RESPONSES

- (2) What is the primary production of your farm?
(Check one)
- | | | |
|---------|-----------|---------|
| 4 Dairy | 21 Potato | 4 Beef |
| 6 Grain | 3 Mixed | 0 Other |
- (3) Do you farm:
25 full time 3 part time
- (4) Is your farm:
10 your own land? (or family land on which you do not pay rent)
0 rented land
18 both your own and rented land?
0 other
- (5) Do you farm:
1 less than 100 acres
3 100 - 200 acres
24 200 or more acres
- (6) A. Do you usually grow timothy?
18 yes 9 no
- B. If "yes" in part A, approximately how much?
* acres
- C. Do you plan to grow timothy next season?
17 yes 7 no
- D. If "yes" in part C, approximately how much?
* acres
- (7) A. Do you usually grow clover?
22 yes 5 no
- B. If "yes" in part A, approximately how much?
* acres
- C. Do you plan to grow clover next season?
19 yes 6 no
- D. If "yes" in part C, approximately how much?
* acres

- (8) A. Do you usually grow any ryegrass?
14 yes . 14 no
- B. If "yes" in part A, approximately how much?
* acres
- C. Do you plan to grow any ryegrass next season?
12 yes 2 no
- D. If "yes" in part C, approximately how much?
* acres
- (9) A. Do you grow any other grasses or forage crops?
3 yes 21 no
- B. If "yes" above please specify. ____
- C. Of the crop(s) in part "B" above, how much?
* acres
- D. Do you plan to grow these crop(s) next season?
5 yes 4 no
- E. If "yes" in part B, approximately how much?
* acres
- (10) For what purpose do you grow timothy, clover, or ryegrass? (Check one or more)
- 10 forage for cattle
 - 16 organic matter to build up the soil
 - 17 rotation crop for potatoes
 - 2 silage
 - 11 soil erosion prevention
 - 7 hay
 - 1 other (please specify) not specified
- (11) Have you ever experimented with any crops that you or other farmers you know have never grown before?
3 yes 21 no
- (12) If "yes" in question (11) was it/were they successful?
1 yes 2 no

This varied cross-section, then, well represented the audience for which this production was intended--namely, dairy and beef farmers who require a substantial forage crop or potato farmers who need a good rotation crop for their potatoes, the benefits of this crop being presented in the text of the storyboard.

Questions 6 through 10 gleaned information regarding the farmers pre-disposition toward ryegrass.

Questions 11 and 12 asked if the respondents had ever experimented with crops. It was designed to help formulate an impression of how much risk the subjects were prepared to take. One would clearly get the impression that members of the population are not risk takers as 21 of 24 or roughly 88% indicated they had never experimented with crops other than those that were traditionally grown in the area.

Question 13 asked for any other comments, none of which were written, but a few verbal comments are presented later in this paper.

The Post Test

The first 5 questions of the post test checked for difficulties with the production itself. After pilot testing and modifications, no difficulties were encountered in the field test. A summary of the post test responses appears in Table 2.

TABLE 2
SUMMARY OF POST TEST RESPONSES

- (1) Did you find the slides clear? (Check one)
28 yes 0 no
- (2) Was the print on the slides clear?
28 yes 0 no
- (3) Was the sound clear?
27. yes 0 no
- (4) The speed of the show was:
0 too fast 28 just right 0 too slow
- (5) As far as the information presented it was:
0 too much 27 just right 1 not enough
- (6) Did the two farmers in the production seem like real farmers to you?
26 yes 2 no
- (7) Did they seem like P. E. I. farmers?
27 yes 1 no
- (8) Did the slide show give you any new information about ryegrass?
24 yes 4 no

Answer this question (9) only if you had already planned to grow ryegrass this coming season.

- (9) As a result of this slide show, do you think you might plan to grow more ryegrass this coming season?
9 yes 2 no
- (10) As a result of this slide show do you think you might grow ryegrass this season?
13 yes 3 no
- in future seasons?
20 yes 2 no

(11) From the slide show can you remember some advantages of ryegrass over traditional forage crops such as timothy and clover?

28 yes

0 no

If "yes" above can you write one of them on the line below? various responses

Questions 6 and 7 investigated the acceptance of the two farmers in the production used as social role models. 26 of 28 respondents felt they seemed like real farmers. 3 farmers indicated verbally to the author that they knew one of the farmers in the production.

Question 8 asked the respondents if any new information was presented about ryegrass; i.e. information they were previously unaware of. 24 of 28 responded "yes."

Questions 9 and 10 were used to discern attitude change and questions 11 and 12 were designed to give some impression of how carefully the target audience listened to the program. Question 11 was general and 12 was specific. 11 asked respondents to write one item they had learned about ryegrass. 24 responded with a variety of answers, all of which had been presented in the production. 4 did not answer.

Question 12 asked specifically for the two "varieties" McCardle Bros. grow, which were LENTAL and AUBADE. The dichotomy seemed to elicit conditioned responses of "annual and perennial" from 14 farmers and only 7 seemed to read or comprehend the word "varieties." 7 did not respond.

All 28 respondents answered "yes" they could remember some advantages of ryegrass over traditional forage crops,

but in the second part of the question which presented a space to write "one" of them, only 24 responded.

Five of 28 subjects responded to question 13 which asked for comments.

Attitude Measurement Data

While many questions on the pre and post tests collected information to monitor external validity, question 8 of the pretest and questions 9 and 10 of the post test specifically sought data leading to assessment of attitude change.

Two predispositions were measured:

- 1) farmers who didn't grow ryegrass.
- 2) farmers who did grow ryegrass.

In the case of farmers who didn't grow ryegrass, a simple question on the post test asking if they would now grow ryegrass as a result of seeing the slide show was the measurement for attitude change.

In the case of farmers who presently were growing ryegrass, the question directed to them on the post test asked if they were now interested in growing more ryegrass.

Most of the farmers purchase seed in mid May to early June, but many may purchase it much earlier depending on the quantity of the supplies. For this contingency, the second part of question 10 on the post test asked if farmers would

be interested in growing it in future seasons. Farmers who had already bought this year's seed but were motivated to try ryegrass had the option, then, of checking this question.

Table 3 presents a summary of the frequencies.

After 3 tests which were not completed were discarded (all from the group session) there were 11 ryegrass growers and 14 who did not grow it.

Farmers who did not grow ryegrass showed that 13 of 14 wished to grow it after the treatment by way of the slide/sound production. Table 2 shows that there were 3 "no" responses here but examination of the tests showed that two farmers who identified themselves as being growers of ryegrass on the pretest erroneously checked the wrong category of the post test. This left a 13 to 1 ratio which represents a 93% change in attitude.

For farmers who grow ryegrass, 9 indicated they would be growing this season. The 2 who did not plan to grow it were the same 2 who answered "no" in the post test, indicating they did not plan to grow more as a result of the production.

The difference in attitude toward ryegrass in the post questionnaire again proved to be significant as 9 of 11 farmers planned to grow more as a result of the production

TABLE 3

FREQUENCIES OF RESPONSES BEFORE AND AFTER TREATMENT

BEFORE TREATMENT		AFTER TREATMENT	
FARMERS WHO DO NOT GROW RYEGRASS			
PLAN TO GROW THIS SEASON		PLAN TO GROW THIS SEASON	IN FUTURE SEASONS?
YES	0	YES 13	YES 20
NO	14	NO * 1	NO 2

TOTAL	14		
FARMERS WHO GROW RYEGRASS			
PLAN TO GROW THIS SEASON		PLAN TO GROW MORE THIS SEASON	
YES	9	YES	9
NO	2	NO	2

TOTAL	11		

* SHOWS 3 IN TABLE 2 (EXPLANATION IN RESULTS SECTION)

which represents roughly an 82% attitude change.

Twenty of 22 farmers planned to grow ryegrass in future seasons. Judgement of this part of the question would appear to be of minimal value as both previous growers and non-previous growers obviously answered the question since there was a total of 22 responses and it is not known if previous growers who checked this plan to grow "more" which was the criterion used to discern attitude change for that group.

Discussion

When contemplating the whole concept of farming and farmers, we generally confine our impressions to that of production--that is to say, farmers are producers. We would seldom allow ourselves to think of them as consumers.

In searching the literature and the marketplace, one becomes aware that there are very few productions of this type available to farmers and the result of this study indicates that a media production has a significant impact on the target audience.

Farmers consume huge volumes of seed, insecticides, and fertilizer, as well as billions of dollars of machinery and support materials.

The information presented in the ten minute production was relatively new and put together from a number of

sources, but the importance of it to the P. E. I. farmers and the potential dollar value to both the producer and the buyers of this seed grass would seem to make more productions of this type quite valuable.

Considering that 24 of 28 respondents indicated that they had learned something new from the production and that, as already indicated in this paper, they don't respond well to print medium, it would appear that there is a need for good quality educational materials for this group. A response in this area could only help the small family farmers in their struggle to survive by increasing their efficiency.

The results are very encouraging for using this medium to disseminate information to farmers. One has to look at these results with a certain amount of discretion since the genial nature of the target audience would continually lend itself to the Hawthorne Effect influencing internal validity.

Since the visual and sound medium has once again proven itself to be a powerful tool when used effectively, it would appear that farmers represent an untapped resource. It has occurred to the author that since the farming community moves so much more slowly than the rest of the consumer world, they might present themselves as a rather

vulnerable target with unscrupulous use of the visual media to effect adoption of new methods or materials which would not prove to be beneficial to them. The Department of Agriculture would do well to monitor such innovations carefully.

Suggestions for Further Study

A delayed post test next spring to see how many farmers who viewed the production actually planted ryegrass would be an interesting study. If it was found to be effective in the long term, perhaps the P. E. I. Department of Agriculture and seed cooperatives would find the visual media an efficient way to spread new product information.

Because of time constraints, this production was not actually tested in a place such as an agricultural fair. Several key elements to the presentation, such as location, type of medium, time of day, and the like could be studied in such a setting.

Other elements of this type of production could also be studied, such as the two farmers used as role models. The slide/sound format could be manipulated to remove this portion to see if there is a change in farmer acceptance of the new product.

The audiences tested consisted of both people who knew the ryegrass producers and people who did not know them. A

study of responses using two groups, one who knew the farmers and another complete group who had no previous knowledge of the McCardle Bros., might stratify or segregate peer prejudices to see if they had any effect on the A/V production acceptance.

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APPENDIX A

STORYBOARD

Storyboard for
RYEGRASS

Produced by
R. Gillis

for
McCardle Bros. Inc.
Kinkora, P.E.I.

Copyright 1985 R. Gillis

Program/Sequence No. 1

Narration:



Notes

Program/Sequence No. 2

Narration:



Timothy and Clover

Notes

Program/Sequence No. 3

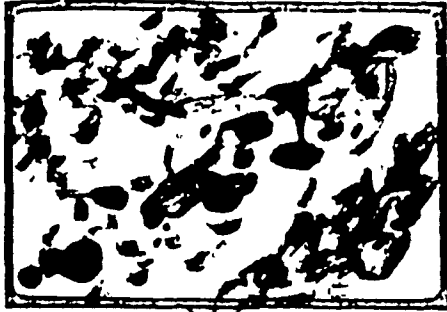
Narration:



have been most commonly grown

Notes

Program/Sequence No. 4



Notes

Narration:

in P.E.I. for a number of years

Program/Sequence No. 5



Notes

Narration:

There is, however, another forage
which has received little attention
and that's ryegrass

Program/Sequence No. 6



Notes

Narration:

Now pedigrees of annual and
perennial ryegrass made them
extremely attractive for growing
by P.E.I. farmers.

Program/Sequence No. 7



Notes

Narration:

The growing season of annual
and perennial ryegrass together
range from early summer to
late fall.

Program/Sequence No. 8



Notes

Narration:

Annual ryegrass planted the beginning
of May.....

Program/Sequence No. 9



Notes

Narration:

establishes itself quickly.....

Program/Sequence No. 10

Narration



Notes

Handwritten lines for notes, currently blank.

Program/Sequence No. 11

Narration

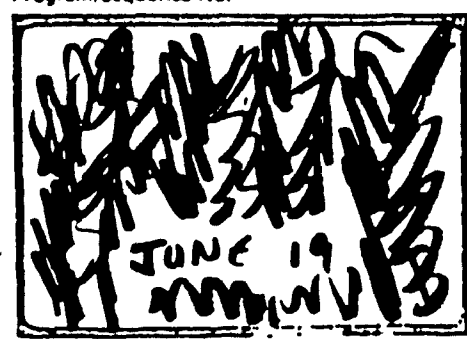


Notes

Narration text: "and has a cover like this on June 12." followed by several blank lines.

Program/Sequence No. 12

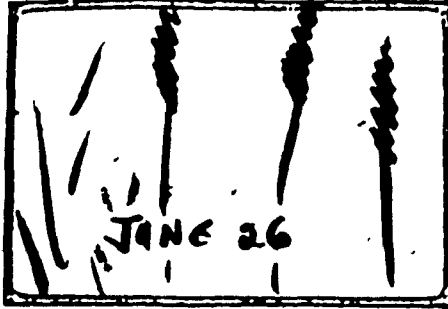
Narration.



Notes

Narration text: "This is seven days later." followed by several blank lines.

Program/Sequence No. 13



Notes

Narration:

And by June 26 it is producing
seed tillers.

Program/Sequence No. 14

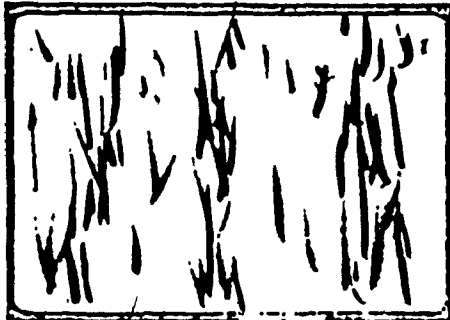


Notes

Narration:

When the first crop is cut in
early August

Program/Sequence No. 15

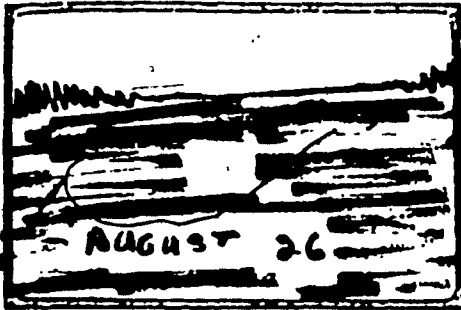


Notes

Narration:

new growth begins again.

Program/Sequence No. 16

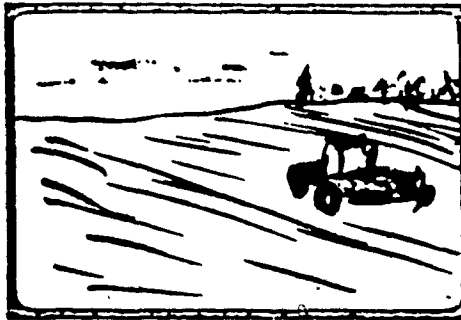


Notes

Narration.

This is the second growth on
August 28th.

Program/Sequence No. 17



Notes

Narration

Perennial ryegrass can be seeded
in late summer or early fall.

Program/Sequence No. 18

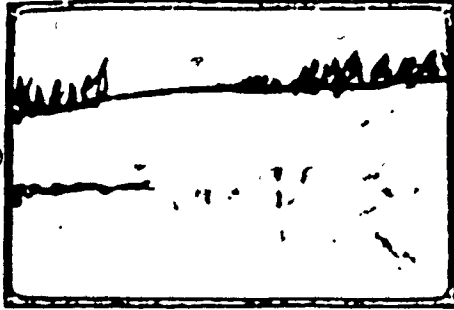


Notes

Narration.

It establishes itself quickly

Program/Sequence No. 19

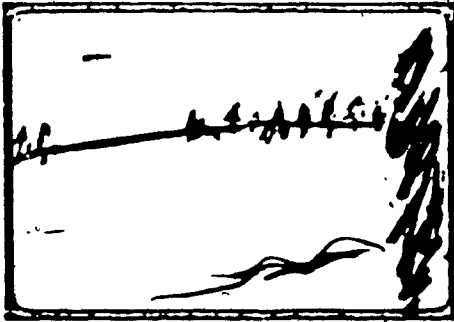


Notes

Narration

and needs to achieve

Program/Sequence No. 20



Notes

Narration

some vigour before snow falls.

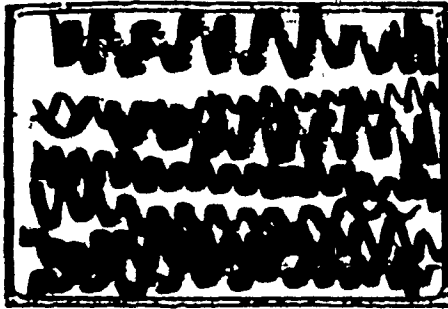
Program/Sequence No. 21



Notes

Narration.

Program/Sequence No. 22

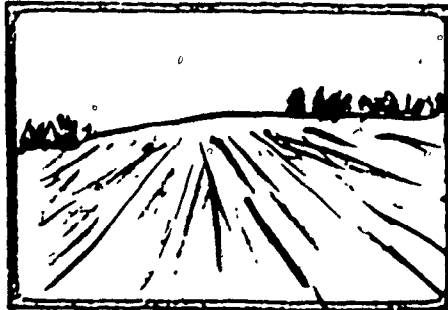


Notes

Narration

The warm spring sun brings
it to life very quickly.

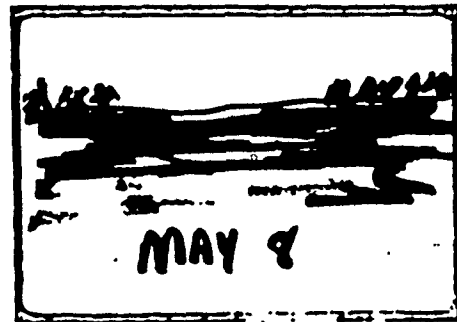
Program/Sequence No. 23



Notes

Narration

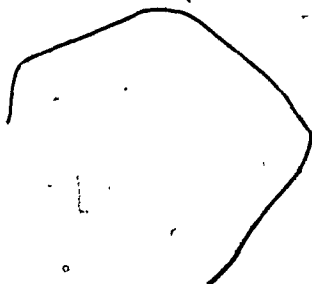
Program/Sequence No. 24



Notes

Narration.

And produces this growth by
May 8th.



Program/Sequence No 25

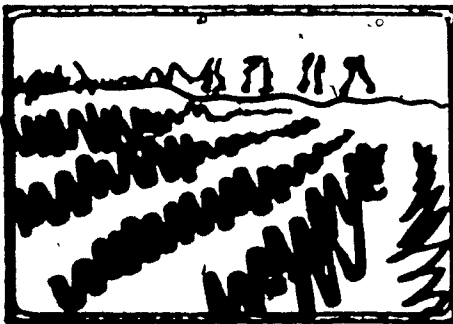


Notes

Narration

On June 25th seed tiliers are ripening.

Program/Sequence No 26



Notes

Narration

After cutting.....

Program/Sequence No. 27



Notes

Narration:

and an application of fertilizer.....

Program/Sequence No. 28



Notes

Narration

The second crop looks like this

by August 28th.....

Program/Sequence No. 29



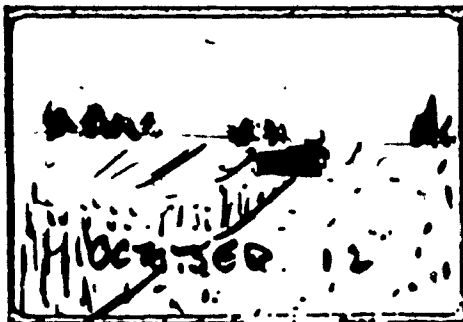
Notes

Narration

And is producing seed tillers

by September 11th.

Program/Sequence No. 30



Notes

Narration

Harvesting can take place again

in October.

Program/Sequence No. 31

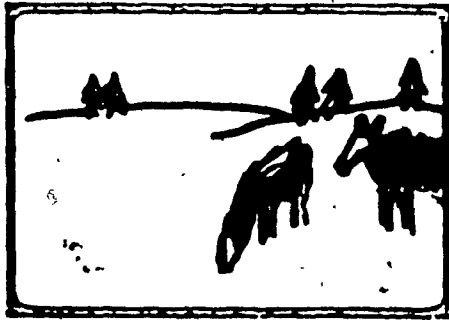


Notes

Narration

So annual and perennial ryegrasses are very productive and have an extremely long growing season.

Program/Sequence No. 32



Notes

Narration

Added to this is the vigour of new strains of ryegrass.

Program/Sequence No. 33



Notes

Narration:

For grazing they can be used from mid May to mid November with remarkable recovery.

Program/Sequence No. 34

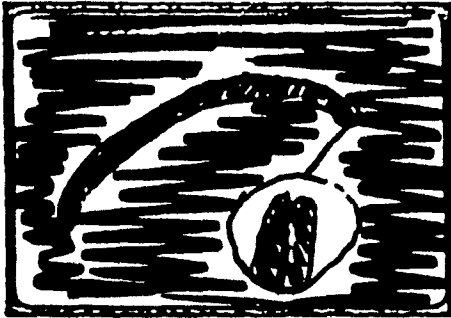


Notes

Narration.

Ryegrass is a good rotation crop
for potatoes as

Program/Sequence No. 35



Notes

Narration

the most common potato pathogen,
a small worm-like creature....

Program/Sequence No. 36



Notes

Narration.

was not found in ryegrass sampled
over 3 years by the P.E.I. dept. of
Agriculture

Program/Sequence No. 37

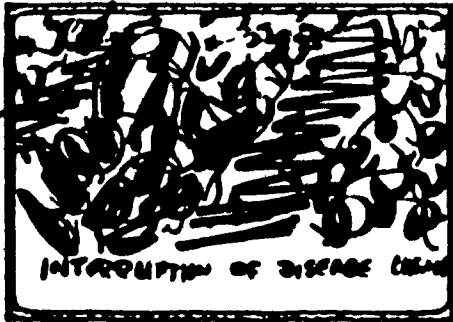


Notes

Narration:

In addition, potatoes have
 common pathogens such as Verticellum

Program/Sequence No. 38

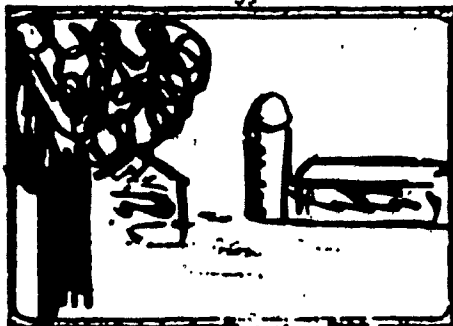


Notes

Narration:

and Rhizectonia with other forages
 but don't with ryegrass. Ryegrass
 can be very important then, in
 breaking the potatoe disease cycle.

Program/Sequence No. 39



Notes

Narration:

Perennial ryegrasses are excellent
 for silage.

Program/Sequence No. 40

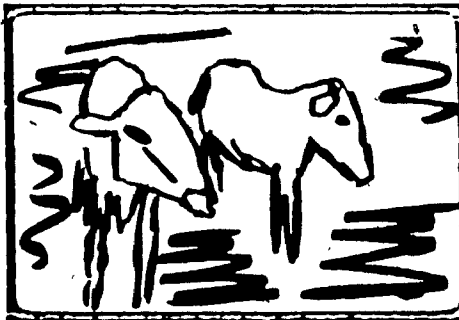


Notes

Narration

Tests have shown them to be superior to Timothy in

Program/Sequence No. 41



Notes

Narration

intake, digestibility and yield per hectare of digestible dry matter.

Program/Sequence No. 42



Notes

Narration.

With early crops such as peas and early potatoes.....

Program/Sequence No. 43



Notes

Narration.

Because ryegrass establishes

itself very quickly, it is

Program/Sequence No. 44



Notes

Narration:

excellent protection against erosion.....

As you see here, erosion only occurred

where ryegrass wasn't seeded.

Program/Sequence No. 45



Notes

Narration:

It also protects against bleaching

by the sun.

Program/Sequence No. 46



Notes

Narration:

P.E.I. soils are naturally light and sandy and therefore needs a good deal of organic matter.

Program/Sequence No. 47



Notes

Narration:

Clover, for instance, has a single heavy tap root but ryegrass has a filiferous bulky foot mass.....

Program/Sequence No. 48



Notes

Narration:

which makes it excellent organic matter for the soil.

Program/Sequence No. 49



Notes

Narration

Perennial ryegrass may be underseeded
with cereals.

Program/Sequence No. 50

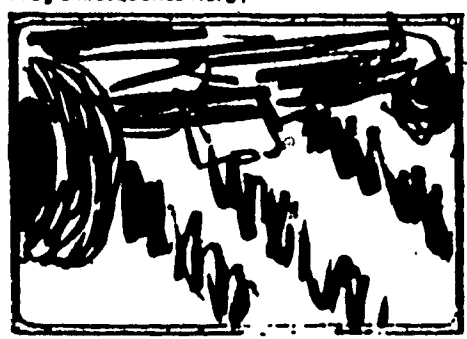


Notes

Narration

It generally remains about
15-20 cm high without competing
with the cereal.

Program/Sequence No. 51



Notes

Narration

Once the cereal is harvested.....

Program/Sequence No. 52

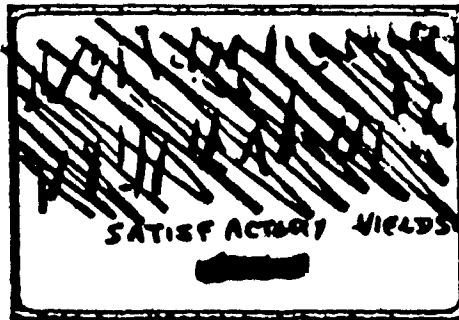


Notes

Narration:

the grass produces quickly and is soon ready for grazing or cutting again.

Program/Sequence No. 53

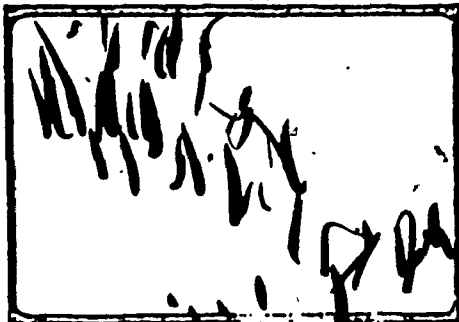


Notes

Narration:

Annual ryegrass and legume mixtures have been found to produce satisfactory yields of good quality with very little fertilizer which will help keep production costs.

Program/Sequence No. 54

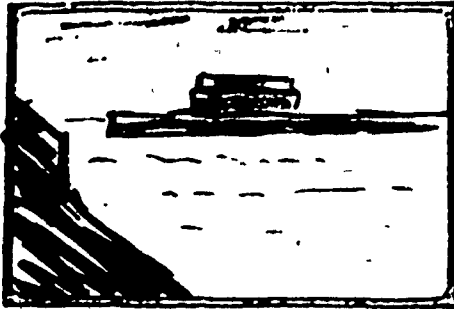


Notes

Narration:

Perennial ryegrass has been found to winter very well on P.E.I. except in the case of extreme winters and may be grazed for 2 successive years.

Program/Sequence No. 55



Notes

Narration

Until recently, ryegrass seed has only been available from foreign markets.

Program/Sequence No. 56



Notes

Narration

It has traditionally shown poor germination

Program/Sequence No. 57

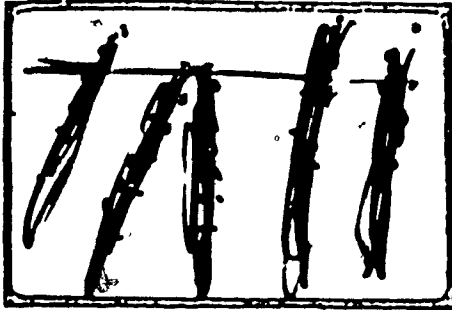


Notes

Narration:

and is often a mixture of annual and perennial seed which causes problems in

Program/Sequence No. 58

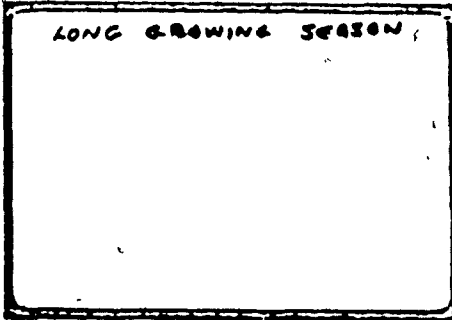


Narration

competition with underseeding.

Notes

Program/Sequence No. 59

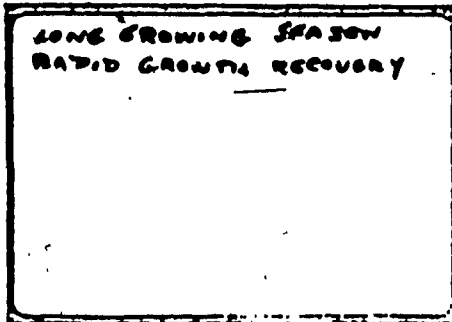


Narration

In summary, then, ryegrass in comparison to traditional forages offers a longer growing season.

Notes

Program/Sequence No. 60



Narration

Rapid recovery from grazing,

Notes

Program/Sequence No 61

LONG GROWING SEASON
RAPID GROWTH RECOVERY
INTERRUPTION OF DISEASE CYCLE

Narration

an interruption of the potato
disease cycle.

Notes

Program/Sequence No 62

LONG GROWING SEASON
RAPID GROWTH RECOVERY
INTERRUPTION OF DISEASE CYCLE
EXCELLENT SILEAGE

Narration

Excellent silage

Notes

Program/Sequence No. 63

LONG GROWING SEASON
RAPID GROWTH RECOVERY
INTERRUPTION OF DISEASE CYCLE
EXCELLENT SILEAGE
GOOD EROSION PROTECTION

Narration:

good soil erosion protection.

Notes

Program/Sequence No. 64

Narration

LONG GROWING SEASON
RAPID GROWTH RECOVERY
INTERMEDIATION OF DISEASE CO.
EXCELLENT SILAGE
GOOD GROWTH RECOVERY
EXCELLENT ORGANIC MATTER

and an excellent organic matter.

Notes

Program/Sequence No. 65

Narration

GOOD UNDERSEEDING

In addition to this ryegrass underseeds
will with cereals;

Notes

Program/Sequence No. 66

Narration

GOOD UNDERSEEDING
SATISFACTORY YIELDS.

provides satisfactory yields with a
minimum of fertilizer.

Notes

Program/Sequence No. 67



Notes

Narration

and perennial ryegrass usually
winters well on P.E.I. and may be
grazed for 2 years.

Program/Sequence No.



Notes

Narration:

Mr. Robert Hammel has grown ryegrass
for 4 years and has this to say about
it "...I know one thing its great for
erosion enh?

Program/Sequence No. 69



Notes

Narration:

...cause its got a great root system
on it...its good and thick...and
the cows milk....

Program/Sequence No 70



Notes

Narration

on it. Its high in protein... the
 cows you know. I know there's some
 cows up 25 milking on ryegrass.

Program/Sequence No



Notes

Narration

We strip grazé, 80 head of cattle
 on the 25 acres there and if ah...
 we could easily um... we could easily
 ah... have twice the number of head
 on it... I know we could have 150 head
 on that ryegrass strip grazing... you
 wouldn't believe it...."

Program/Sequence No. 72



Notes

Narration:

Mr Ernie Mulligan: "well... ah... before
 we were running a 3 year crop rotation
 ... we were running potatoes, grain and
 ah clover or timothy and cut and
 plow it down in the fall of the year.

Program/Sequence No. 73



Notes

Narration.

now, with the ryegrass...shortened
up our rotation to a two year potato
rotation instead of a 3 year

Program/Sequence No. 74



Notes

Narration.

because we're using ryegrass plus
the fact that we're short a land
in this part of the country."

Program/Sequence No. 75



Notes

Narration:

McCardle Bros. of Kinkara P.E.I.

Program/Sequence No 76

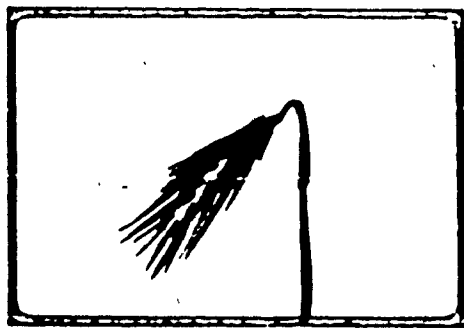


Notes

Narration

as well as producing seed grains
and seed potatoes.

Program Sequence No



Notes

Narration

Program/Sequence No. 78



Notes

Narration

Program/Sequence No 79

Narration



produce ryegrass certified seed
of both the annual and perennial
varieties.

Notes

Program/Sequence No 80

Narration



It is high quality seed with
good germination;

Notes

Program/Sequence No. 81

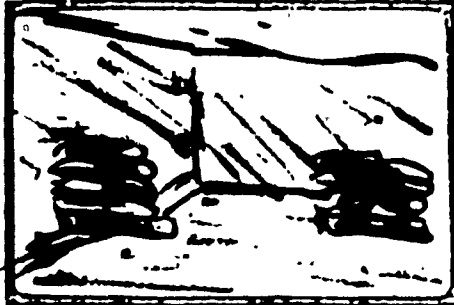
Narration:



offers less chance of importing
disease to the island;

Notes

Program/Sequence No. 82



Notes

Narration

is a better price than foreign seed

Program/Sequence No. 83



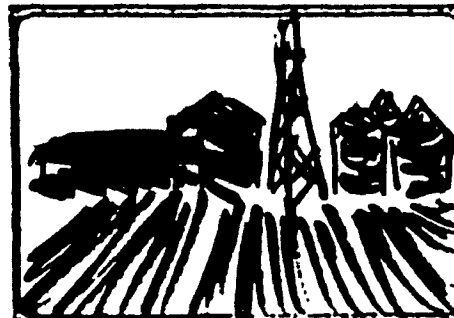
Notes

Narration

and keeps money in the P.E.I.

economy.

Program/Sequence No. 84



Notes

Narration

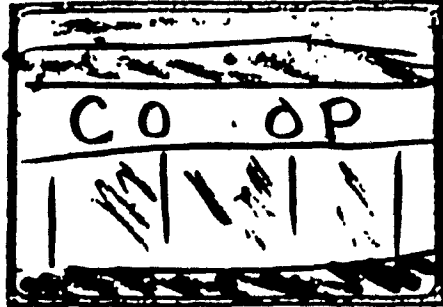
McCardle Bros. ryegrass seed

may be purchased from McCardle

Bros. in Kinkora.

Program/Sequence No. 85

Narration.

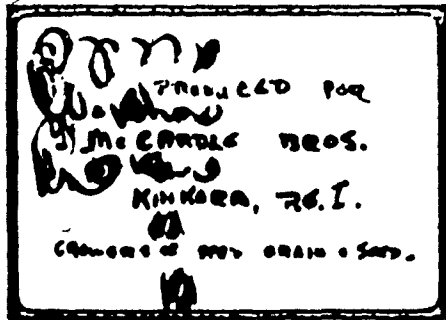


or ask for it at your local seed
dealer.

Notes

Program/Sequence No. 86

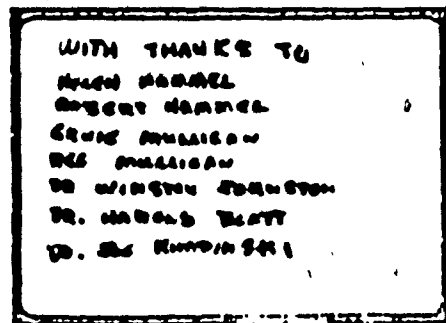
Narration



Notes

Program/Sequence No. 87

Narration



Notes

Program/Sequence No 88

Narration

NARRATOR
NEIL SHEE

Notes

Program/Sequence No 89

Narration

AUDIO MIX.
JOHANNK ROY

Notes

Program/Sequence No. 90

Narration.

PHOTOGRAPHY
FRED MCCARDLE
BOB GILLIS

Notes

Program/Sequence No. 91

Narration.

PRODUCER
R. GILLIS

Notes

Program/Sequence No. 92

Narration.

PRODUCED AT
CONCORDIA UNIVERSITY
MONTREAL, CANADA
1995

Notes

Program/Sequence No.

Narration:

Notes

APPENDIX B

Pretest

This information is not a government survey. It is designed to gather information about the farmers that are being sampled as a group.

Your name is not required so please answer as accurately as you can.

- (1) On the outline map below, please make a pencil mark indicating the general whereabouts of your farm.



- (2) What is the primary production of your farm?
(Check one)

Dairy

Beef

Potato

Grain

Mixed

Other (please specify) _____

(3) Do you farm:

___ full time?

___ part time?

(4) Is your farm:

___ your own land? (or family land on which you do not pay rent)

___ rented land?

___ both your own and rented land?

___ other (please specify) _____

(5) Do you farm:

___ less than 100 acres?

___ 100 - 200 acres?

(6) A. Do you usually grow timothy?

___ yes

___ no

B. If "yes" in part A, approximately how much?

___ acres

C. Do you plan to grow timothy next season?

___ yes

___ no

D. If "yes" in part C, approximately how much?

___ acres

(7) A. Do you usually grow clover?

___ yes

___ no

B. If "yes" in part A, approximately how much?

___ acres

C. Do you plan to grow clover next season?

___ yes

___ no

D. If "yes" in part C, approximately how much?

___ acres

(8) A. Do you usually grow any ryegrass?

___ yes

___ no

B. If "yes" in part A, approximately how much?

___ acres

C. Do you plan to grow any ryegrass next season?

___ yes

___ no

D. If "yes" in part C, approximately how much?

___ acres

(9) A. Do you grow any other grasses or forage crops?

___ yes

___ no

B. If "yes" above, please specify. _____

C. Of the crop(s) in part "B" above, how much?

___ acres

D. Do you plan to grow these crop(s) next season?

___ yes

___ no

E. If "yes" in part D, approximately how much?

___ acres

(10) For what purpose do you grow timothy, clover, or ryegrass? (Check one or more)

___ forage for cattle

___ organic matter to build up the soil

___ rotation crop for potatoes

___ silage

___ soil erosion prevention

___ hay

___ other (please specify) _____

(11) Have you ever experimented with any crops that you or other farmers you know have never grown before?

___ yes

___ no

(12) If "yes" in question (11) was it/were they successful?

___ yes

___ no

(13) If you have any other comments to make, please feel free to do so at the bottom of this page or on the back.

APPENDIX C

Post Test

The first few questions are designed to see if you had any difficulty with the slide show.

(1) Did you find the slides clear? (Check one)

yes

no

(2) Was the print on the slides clear?

yes

no

(3) Was the sound clear?

yes

no

(4) The speed of the show was:

too fast

just right

too slow

(5) As far as the information presented it was:

too much

just right

not enough

(6) Did the two farmers in the production seem like real farmers to you?

___ yes

___ no

(7) Did they seem like P. E. I. farmers?

___ yes

___ no

(8) Did the slide show give you any new information about ryegrass?

___ yes

___ no

Answer this question (9) only if you had already planned to grow ryegrass this coming season.

(9) As a result of this slide show, do you think you might plan to grow more ryegrass this coming season?

___ yes

___ no

(10) As a result of this slide show do you think you might grow ryegrass this season?

___ yes

___ no

in future seasons?

___ yes

___ no

(11) From the slide show can you remember some advantages of ryegrass over traditional forage crops such as timothy and clover?

___ yes

___ no

If "yes" above can you write one of them on the line below?

(12) What two varieties of ryegrass do McCardle Bros. grow?

1. _____ 2. _____

(13) If you have any comments to make please feel free to do so on the bottom of this page or on the back.

Thank you for your time and effort in completing this questionnaire.