



RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

Final Report Video: Reducing Feather Pecking

**A report for the Rural Industries
Research and Development
Corporation**

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Foreword

Research funded by RIRDC and undertaken by the South Australian Research and Development Institute (SARDI) in recent years has investigated feather cover of laying hens. A better understanding of the effects of feather cover on production, welfare issues and different types of pecking has resulted and is particularly relevant to Australian poultry farms. This research is used as a basis for a video designed to inform farmers, their employees and students of how to manage feather cover and pecking problems.

The video aims to improve feathering in laying hens by demonstrating behaviour and relevant husbandry practices. It is a form of technology transfer that provides details of:

- husbandry
- types of pecking
- understanding bird behaviours
- strategies to improve feather cover
- benefits of improving feather cover

The video highlights the need for a good understanding of bird behaviour so that observations made in the shed will be more meaningful to the stockperson and manager. It relates behaviour to pecking problems and shows how strategies can be put in place to minimise pecking problems and feather loss. By doing this, savings in feed costs can be achieved.

The video is a stand alone work but can also be used as a resource in Murrumbidgee College of Agriculture's distance education course 'Commercial Layer Management', also funded by RIRDC. Both projects use some of the large amount of scientific and practical information known about the egg industry and present it in an accessible and thought provoking way for farmers, their employees and students.

Peter Core
Managing Director
Rural Industries Research and Development Corporation

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Executive Summary

Research funded by RIRDC and undertaken by the South Australian Research and Development Institute (SARDI) has been used as the basis for a video designed to inform farmers, their employees and students of how to manage feather cover and pecking problems in laying hens. The video aims to improve feathering in laying hens, promote researcher-farmer dialogue and provide a vehicle for investigation of emerging media delivery forms.

The video shows that farmers can suffer increases in feed costs because of poor feather cover of hens in winter. Feed cost increases of 15% and loss in egg income of 8% are possible for hens with poor feather cover in winter. This is estimated to cause a loss of \$37,000 annually for an average farm which has 30,000 layers.

The video highlights the need for a good understanding of bird behaviour so that observations made in the shed will be more meaningful to the stockperson and farmer/manager. It relates behaviour to pecking problems and discusses strategies to minimise pecking problems and feather loss. By doing this, savings in feed costs can be achieved.

The video is a stand-alone work but can also be used as a resource in Murrumbidgee College of Agriculture's distance education course 'Commercial Layer Management'. It is suitable, therefore, for both on and off-the-job training where it can motivate and encourage farmers and their employees to more closely manage and monitor the appearance and behaviour of birds in cages.

The video style is derived from forms of communication associated with industry seminars such as verbal exposition and visual description. This approach allows the viewer to gain a sense of being part of the event – gaining new knowledge and interacting with research staff. It allows the viewer to make sense of the information, putting their own interpretation on what is presented rather than being given all the answers. It embraces the current cognitive theories of learning where people construct their own meaning by actively integrating new knowledge with existing understandings so that deeper learning results.

With advances in computer technology, many new delivery mechanisms are becoming available. Anticipating the future use of delivery mechanisms such as CD-Rom, DVD and the Internet, the video has been made so that it can be easily re-versioned. This process allows segments of the video to be used with a database approach where segments can be readily accessed and tailored for various audiences.

As for the preceding videos – dealing with Beak Trimming and Water Vaccination – this video will be evaluated to ascertain its effectiveness with viewers in various situations. This will be done in a number of settings, including industry seminars, conferences, educational settings and with individual farmers. An evaluation form has been produced for use with all viewers and this will be backed up by discussions with people who view the video and initiate screenings.

The image of the egg industry is often portrayed in a negative light. This is not helped by many farmers not adopting new technology especially where this affects management. Both

the video and the associated distance education materials will assist with the uptake of best practice management by industry and so assist the technology transfer process. The video also demonstrates research that may assist the egg industry in discussions on caged hen welfare. It shows that hens in cages continue to exhibit a range of normal behaviours and that feather loss does not cause long-term pain to hens.

Objectives

The aim of the video is to improve feathering in laying hens by demonstrating behaviour and relevant husbandry practices.

The objectives were to utilise the outcomes of project DAN-152A to produce a video entitled “Reducing Feather Pecking”. DAN-152A was the first stage of the project that produced a draft video. The objectives of this project were to:

- produce and evaluate a media package which demonstrates husbandry practices to the egg industry
- improve information and technology transfer of latest husbandry practices to the egg industry

These objectives were expanded with the following clarification:

The video package will highlight the main behavioural activities of hens in cages including time spent eating, drinking resting and preening including activities not normally recognised by stockpersons such as dust bathing in cages, pre-laying behaviour and stereotype behaviours.

The video package will highlight some of the behavioural vices of hens such as feather pecking and vent pecking and illustrate how these vices may be minimised through rearing practices, beak trimming, changes to light intensity, use of abrasive strips and use of stock wound sprays. Latest research findings of the effects of feather loss and feather abrasion on the behaviour of hens and skin condition will be discussed.

Introduction

This project was undertaken to publicise the findings of various research projects that have provided information concerning the feather cover of laying hens. The research indicates that improving feather cover can decrease feed costs in winter and so increase the profitability of egg farmers. To improve feather cover, however, requires farmers and stockpersons to have a greater understanding of bird behaviour and the strategies for overcoming pecking problems.

The research findings have been promoted by the production of a media package containing a video, fact sheets and checklists. This package is designed to provide egg farmers and their staff with a summary of the bird behaviours that affect feather cover and the strategies that can be used to overcome pecking problems. Rather than provide information in a traditional teacher-centred manner, the video uses a cognitive approach that assists viewers to be active observers and to think about feather cover issues.

Project Background

The idea for this project came from two sources:

- a research proposal on feathering in laying hens by Phil Glatz (SARDI) and Roly Bishop (WA Dept of Ag) in 1993/94.
- a proposal for the production of a media package focused on understanding bird behaviours by Ian Dinning, Phil Glatz and Christine Lunam. This proposal followed on from previous work by this group on the dissemination of research.

The then Egg Industry Research and Development Council (EIRDC) encouraged a broader collaboration involving NSW Agriculture. This was funded as project DAN152A with the intent that the media package produced would be linked to the relevant components of the Commercial Layer Management distance education course being produced by Murrumbidgee College of Agriculture and funded by EIRDC.

During 1996-97, project DAN152A identified a range of issues pertinent to media applications in egg industry education and produced a draft video. The video was submitted to the RIRDC Egg Committee who suggested changes including a stronger focus on feather cover. These changes were implemented as the second phase of video production and constitute this project – DAN174A.

Technical Background

Feather pecking has always been a serious problem of poultry. It consists of pecking directed at the feathers of other birds, sometimes involving plucking out and eating these feathers. It may result in severe damage of the birds with bare patches and wounds to the skin in more serious pecking attacks eventually leading to death of the bird. Frequency of pecking is high in cages and while cannibalism is generally controlled, feather cover in older hens is quite poor, creating a negative image of the caged hen among the public.

Birds with feather damage receive more light pecks, toe pecks and feather pulling than birds without damage (Leonard *et al.* 1995). Recent genetic studies selecting birds for a low tendency to feather peck have produced promising results (Kjaer and Sorensen, 1997; Hester *et al.* 1996; Craig and Muir, 1996).

Feather pecking is a form of redirected ground pecking (Blockhuis, 1986, 1989). Ground pecking apart from food gathering is a form of exploratory behaviour serving to gather visual, tactile and gustatory information (Blockhuis and Van Der Haar, 1985). Feather pecking is also considered to be a stereotypic behaviour. Some birds develop very high frequencies while others show very low frequencies (Kostal *et al.* 1992). This may account for the wide variation in the feather cover noted in the field. Regular pecking and feather removal may lead eventually to vent pecking as the bird matures (Savory and Mann, 1997).

It is well known that feather cover of laying hens declines as the bird ages (Tauson, 1986). By the end of a lay, some hens are almost naked. When hens lose their feathers over large parts of their body due to feather pecking (Hughes and Michie, 1982), abrasion and moulting, there is a decline in their natural heat insulation and increase in convective heat loss from the bird (Mitchell, 1985).

Food consumption increases when the plumage cover decreases (Emmans and Charles, 1976; Biedermann *et al.* 1993 and Damme and Pirchner, 1984) and can be 10-30% higher in hens with reduced plumage. In Australia, considerable proportions of the national flock are old hens with deteriorating feather cover. During winter (or more particularly when environmental temperatures are below 20⁰C), these hens could be consuming millions of dollars worth of additional feed.

Poor plumage has also been shown to decrease efficiency of feed utilisation (Leeson and Morrison, 1978; O'Neil *et al.* 1971; Tauson and Svensson, 1980; Tullet *et al.* 1980, Raastad and Katle, 1989 and Damme and Pirchner, 1984). The authors state that it is important that feather cover of layers be maintained when hens are housed in cold and thermoneutral temperatures.

Biedermann *et al.* (1993) reported that brown layers with intact plumage had reduced mortality, higher egg production, lower feed consumption and fewer cracked eggs, while Mills *et al.* (1988) found that there was a negative correlation in 52 week old layers between feathering and egg production.

The poor feather cover of older hens in cages has been an important factor contributing towards negative perceptions of the caged layer industry by welfare groups. While older caged hens maintain good health and performance, their feather cover deteriorates to a level where considerable body areas are naked. Hens with poor feather cover are also more susceptible to pecking attacks from other hens and to abrasions. Recent anatomical and behavioural studies by Glatz and Lunam (1996) indicate that welfare of birds with poor feather cover is not compromised. Barnett and Glatz (1995) report that while the cosmetic appearance of the bird is affected when it has poor feather cover, it has few implications for their welfare based on physiological variables.

Behaviour of hens is the main indicator used to determine if welfare of hens is compromised in a given environment. Many of the behavioural indicators used by researchers to assess

the welfare of hens are generally poorly understood and not easily recognised by egg farmers and others employed in the egg industry. For instance, behaviours such as dust bathing in cages (Vestergaard *et al.* 1993), stereotype behaviours (Kostal *et al.* 1992), pre-laying behaviour (Hughes *et al.* 1988) and behavioural profiles of hens in cages (Preston 1986) have been captured on video and can be useful in providing basic information to farmers on the relationship between behaviour and husbandry. Disseminating this information widely can improve the level of understanding between researchers, welfare groups and the industry.

Distance Education

In parallel with video production to promote RIRDC's research outcomes, Murrumbidgee College of Agriculture has been producing a distance education course for the egg industry. Commercial Layer Management is a Certificate IV level distance education course designed for managers of commercial egg farms. This RIRDC funded project contains the following units:

- A Hatchery and Breeder Management
- B Land Use, Housing and Equipment
- C Health and Welfare
- D Feeding Practices
- E Rearing Pullets
- F Layer Management
- G Running the Business I
- H Running the Business II
- I Industry Issues
- J Products and Marketing

The Commercial Layer Management course allows students to study at home and/or in the workplace. Students, whether they be farmers, managers, employees or those wishing to enter the industry, are encouraged to investigate other reference sources in addition to the supplied notes. It was in this context that the educational strategy for the video was developed. The emphasis in the video is to encourage consideration and discussion rather than rote learning.

The video can also be used in seminars and as a stand-alone resource for those not wishing to enter a formal course. In this role, it supplies a concise summary of feather cover and pecking problems. Farmers and their employees can use the video to improve their husbandry skills and so increase farm profitability. It is also intended to encourage dialogue between producers and researchers.

The video, therefore, has a dual role as a resource for the Commercial Layer Management course and as a stand-alone approach to assist technology transfer. It joins other videos already produced – Water Vaccination and Beak Trimming – to provide a sharing of research knowledge within the Australian Egg Industry. They also have a potential international role with the Beak Trimming video being sold to Dr Peter Lewis, UK who has written articles in UK and South African publications advocating recommendations given in the video for beak trimming.

The Video Production Approach

The project has worked away from the traditional educational film approach that is typically teacher-centred and in keeping with the practices that were current in the early decades of film making (Endman 1990). Instead, efforts have been made to engage viewers as active learners and thinkers and to position them amidst producer-researcher dialogues. This positioning is through emulating industry discourses, revealing the sources of knowledge and perspectives involved, using contributors' own voices and avoiding the type of narration which takes away the need for active interpretation by viewers.

Video production was approached as open-ended qualitative research to enable the investigators the opportunity to investigate the potential benefits of different media styles. Contemporary media developments, associated media forms and stylistic devices were considered and a form of video conducive to re-versioning was adopted.

The initial script structure was conceived as thematically linked video reference files. The amount of information involved demanded a longer piece than initially expected and, in turn, a more complex structure. Integral to the form of the video are verbal expositions with summarising text, metaphors and visual orientations to situations which allow positioning to occur without verbal explanation. A simple narrative was implied by the sequence of situations.

To varying extents, cinematic works require viewers to engage in fleshing out the text from inevitably fragmentary material, guided by the underlying strategies of the tape's construction (Armes 1989). Metaphors and the subtle narrative thread were intended as clues to aspects of the video's content. Metaphor plays an important role, having a pervasive and fundamental effect in structuring the way viewers think and act (Fairclough 1992). Reading was selected as a relevant metaphor in this project and repeatedly used to hint at being observant (reading the signs – of the flock) and to hint at being informed (seeking industry information – including from the video itself).

To improve audience engagement, the video uses viewers' interpretations, emotions and expectations as a primary element (Bardwell and Thompson, 1996). This means that viewers are encouraged to use a constructivist learning approach that has them actively engaged in the learning process. This form of learning provides deeper understanding as well as longer-term retention of the knowledge gained.

The video includes a mix of actual and implicit voices instead of a single authority. The different voices provide industry personnel a positive role in controlling the way they and their industry are represented. In turn the viewers' understanding of the video is shaped and coloured by their interpretation of the verbal discourse and wider social processes involved (Fairclough, 1992).

The video's modular style prepares for digital media forms, eg. Internet, CD-Rom and DVD, where graphics, audio and video can be used for different purposes. Parts of the video could be used as interactive multimedia clips or in a database framework allowing video programs to be affordably reversioned for particular audiences. Producer response arising

from previous video projects (Beak Trimming and Water Vaccination) suggests that re-versioning is a valuable feature (Dinning *et al.* 1997).

Methodology

Three professional areas were involved in developing the video – technical poultry research, education and media production. These were combined to develop a product that can be used in a number of contexts including extension activities, industry development, vocational education and training and higher education. The methodology for the second phase of video production involved:

1. Ongoing electronic communication and meetings to enable the dispersed project team to collaborate.
2. Reviewing the draft video, existing script material, strategies considered and feedback from DAN-152A.
3. Rescripting in the light of suggested changes and budget constraints. This included making feather cover issues the focus of the video program. Some consideration of new media forms and practices was also maintained.
4. Establishing a process for gaining comments on the project and its propositions.
5. Preparing video responses and on-farm audit forms to accompany the videotapes.
6. Obtaining script feedback.
7. Proceeding from script approval through pre-production, production, offline editing, online editing and the production of artwork for printing.

Video Style

The video is designed to generate ideas, questions, and insights into feather cover. Thus, rather than providing all the answers, the video raises questions so that the viewer will construct their own strategy about how they can deal with the feather cover issue. This encourages farmers to be innovative in their approach to solving problems. By doing this, the researcher is not portrayed as the expert with all knowledge who tells the farmer how birds should be managed. Rather, the video is designed to portray researchers and farmers pooling information so that others can benefit. It is left up to the viewer to decide the relevance of the information for themselves instead of assuming that the information is relevant to all viewers.

A modified constructivist approach was used for this project. This provided a script that does not fit into the traditional ‘show and tell’ of many educational videos which use a behaviourist methodology (Gage & Berliner, 1988, Case and Bereiter, 1994). The constructivist approach to learning (Lefrancois, 1991; King, 1995; Driver, 1988) encourages people to form their own view about the material presented, rather than be provided someone’s set answer to a problem. During this process, learners compare new information with the knowledge they already possess and so construct new meaning from the material presented.

The comparison below shows the difference between a constructivist and the traditional behaviourist methodology still common in many educational products. This video fits between these two educational approaches. Originally a constructivist approach was proposed for the video but the response from the RIRDC Egg Committee suggested that a more straightforward approach was required. This gives the video more structure and helps to satisfy those who want to gain clear-cut information using behaviourist methodology.

Constructivist Approach to Learning	Behaviourist Approach to Learning
Eg. A well-balanced video where the viewer forms their own judgements.	Eg. Videos where viewers are provided information with little opportunity for their own judgements.
<ul style="list-style-type: none"> · Learner centred · Many sources of knowledge · Learners form their own view of the information provided · Active learning · Learners accept or reject information according to their prior knowledge · Longer term retention of information 	<ul style="list-style-type: none"> · Instructor centred · One infallible source of knowledge · Learners accept one view of the information provided · Passive learning · Learners tend to accept information on face value · Shorter term retention of information

Some of the constructivist approaches the video uses to assist learning include:

- The use of more than one voice
- Both producer and researcher involvement
- A range of strategies provided
- Providing the viewer with the chance to choose the strategies that best suit them
- Providing time for viewers to think about what is presented

Results

The video package is designed to generate thought and insights regarding feather cover. It contains:

- a 15 minute video
- an information sheet explaining how the video fits with national competencies
- a daily checklist for stockpersons
- a checklist for the farmer to use with each batch
- an evaluation sheet

The video itself is comprised of eight sections. These are:

1. Introduction
2. Husbandry
3. Types of pecking
4. Understanding behaviours
5. Strategies
6. Benefits of improved feather cover
7. Ending
8. Practise observation

A modified constructivist approach is implicit in the script. This provides a video with some variation from the 'show and tell' of traditional, rote learning educational film and video; although an extensive scientific exposition is included. This exposition is highlighted by the use of photos, text, graphics and video clips.

The constructivist approach to learning encourages people to actively form an understanding of the material presented; rather than looking for readymade instructions and answers. This process values learners' existing knowledge, their ability to assimilate new information and to independently relate information to their own particular situations.

Consistent with this approach, researchers are not portrayed as all-knowing experts who drill producers and staff on how birds should be managed. The video depicts producers and researchers in dialogue and is intended to engage viewers in the consideration of significant research questions and the way they should deal with the feather cover issue.

During the project, some aesthetic and other narrational methods relevant to multimedia were considered. Although the product is a linear video program, emerging-media considerations are reflected in the video style. This may enable future re-versioning of the video program so that it can be delivered in different forms or to different audiences.

The metaphor of reading and listening (in the seminar/in the shed) is used to reinforce the need for observation and as a vehicle to set the scene for the information presented. This was used because:

- it introduces the program's themes
- it positions the viewer ie. a farmer-scientist dialogue
- it tells the viewer a story to maintain their interest rather than just presenting information as in an instruction manual
- the interactions during the seminar shape the video and provide structure

- the seminar setting provides viewers with breaks from technical information allowing better retention – some viewers interpret this as clutter (eg. coffee break scene)
- it encourages farmers to recognise activities such as seminars are a useful way to gain knowledge that can assist them - this helps breakdown barriers so that continual learning is promoted
- the seminar provides a visual orientation for each section in the video as well as the producer/scientist environment
- the seminar personalises the information
- it depicts information sharing in a positive light

The development of collaboration between investigators in the research, education and film-making fields has been a positive outcome of the project. This collaboration has enabled the sharing of knowledge as well as linkage of the video to distance education materials. The skills brought to the project have benefited all involved and will be used by each project team member in future work.

Discussion of results

This project has proved to be a catalyst for closer liaison between the project team and the egg industry. It has challenged both groups to work closely together so that a common approach to technology transfer through media could be found. The questions raised about the educational approach taken and the potential of new media forms provide valuable knowledge that can be applied to future projects.

The project has produced a video that provides the egg industry with a concise discussion of feather cover and pecking problems and a comprehensive introduction to strategies for reducing these problems.

Concerns expressed by the RIRDC Egg Committee during the project's development - (ie. the video not being straightforward enough), were addressed within the funding constraints by modifying the script and final video. These modifications included:

- using headings and summaries of each section
- providing more footage of birds than shown in the draft video
- eliminating unclear producer comments
- changing some phrases
- reducing the office footage
- rearranging the order of some sections

The video was structured to position the viewers as active observers and used visual and audio metaphors to encourage thinking and analysis. This approach was selected for the husbandry video because:

- the preceding videos have been effective in conveying information and generating discussion
- it avoids a rote learning approach common in shallow educational materials
- it makes people think more deeply about what they are learning
- it compliments the distance education course material being produced by Murrumbidgee College of Agriculture
- it encourages viewers to talk to farmers, farm employees and researchers, attend seminars and read magazines and books

The video is linked to the home study notes in a section on stockmanship that provides details on the behaviours presented in the video. The emphasis in the video is to encourage consideration and discussion especially of pecking behaviour, rather than to show and explain every bird behaviour in detail. By doing this, we have attempted to provide stimulus material that could be used by people in various roles in the poultry industry - from managers through to their employees.

People who view the video will provide vital feedback to the project team. This feedback will not be known until evaluations are analysed. The investigators' experience is that once viewers have looked at the video a number of times they gain a greater appreciation and acceptance for the approach taken and the knowledge gained. It should be noted that the beak trimming video developed using the constructivist theory of learning has been used in the UK and South Africa as a training video.

The investigators will monitor the distribution of the video – who initiates screenings and viewers' responses. Evaluation will involve viewer questionnaires, sales records, follow up contact to ascertain use and arranged screenings to selected audiences.

Comparative judgements will also be made regarding alternative media approaches for future projects. Some possibilities include, the integration of powerpoint presentation material into video, the generation of video material from actual seminars and video on the Internet. Media options which were regarded as future possibilities during the first phase of this video production will also be reviewed.

Implications

1. Farm Profitability

- *The video will help to contribute to improved profitability of farmers.*

The video promotes the idea that farmers can suffer considerable increases in feed costs and losses in egg income because of poor feather cover of hens in winter. Feed cost increases of 15% and loss in egg income of 8% is possible for hens with poor feather cover in winter. This is estimated to cause a loss of \$37,000 annually for an average farm, which has 30,000 layers. The egg industry, therefore, can benefit greatly by improving feather cover of hens.

2. Industry Training

- *The video will help to contribute to better training opportunities for farmers and their employees.*

In recent years, there has been a significant decline in the number of skilled stockpersons available to the egg industry. With the emphasis towards larger and more automated production units, less attention is being given to basic husbandry issues that influence feather cover. The video can motivate and encourage farmers to more closely manage and monitor the appearance and behaviour of birds in cages and also serve as a basic training tool for new staff and students studying the poultry industry. Sales of the video and use as a training tool will provide guidance on future media projects and help to quantitate the need for relevant educational materials.

3. Video Style

- *The educational methodology used in the video will help to contribute to greater uptake of new technology by industry.*

Three videos (Beak Trimming, Water Vaccination, Feather Cover and Pecking Problems) have now been produced to promote RIRDC outcomes to industry, all of which have used a constructivist style. This has raised questions initially as to why information has not been provided in a straightforward 'show and tell' manner. The project team has consistently argued that this style promotes deeper learning by raising questions in viewers minds and that if farmers are to implement the messages promoted, they need to construct their own meaning from the video. Future projects should consider the style used to ensure maximum learning and adoption.

4. Public Perception

- *The video can assist the egg industry in its discussions on caged hen welfare.*

Public perceptions tend to be negative towards hens being kept in cages. The video demonstrates that hens in cages continue to exhibit a range of normal behaviours. It also shows that feather loss does not cause long-term pain to the hens. Both of these findings could be used by the industry in its discussions on caged hen welfare.

Recommendations

1. Representatives of the egg industry assist with promotion of the video where possible so that the feather cover message is widely dispersed.
2. Representatives of the egg industry assist with promotion of the Commercial Layer Management distance education materials associated with the video.
3. Promotion should use existing channels to minimise cost.
4. Evaluation of the video be collected and collated by Murrumbidgee College of Agriculture and distributed to egg industry representatives.
5. Future videos should be distributed through Murrumbidgee College of Agriculture as a central point of contact.

Communications Strategy

The video will be promoted from the second half of 1999. This will involve distribution of brochures, articles in poultry publications, screenings at seminars and field days, information on a web site as well as cross promotion with the Commercial Layer Management distance education materials.

Further Technology Transfer Required

Discussions with the RIRDC's Egg Committee indicate that the industry would benefit from video production in the following areas:

- Daily observation of hens by inexperienced stockpersons
- Clear demonstrations of other husbandry practices
- The shed environment including temperature, light, biosecurity and air quality
- The equipment used in a shed including waterers and feeders
- The birds including other normal and abnormal behaviours, bird handling methods and identification of sick birds.

These topics should be considered for further video production so that best practice management and technology can be disseminated to the egg industry.

If future videos are produced, a review by independent educational specialists should be carried out into the effectiveness of technology transfer methods in the egg industry. This should include:

- Educational methodology.
The use of newer (constructivist) and older (behaviourist) instructional methods and their impact on technology transfer.
- Re-versioning
The need for educational materials for selected audiences and different media forms.

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Appendices

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4. Daily checklist	Page 35
5. Batch checklist	Page 36
6. Evaluation form	Page 37

Script Summary

December 1998

Section	Content
1. Introduction	Title: "Feather Cover and Pecking Problems" Reference to forthcoming seminar Reference to cost savings
2. Husbandry	Reading the signs Routine checking Bloodstained eggs Record keeping Vent pecking Summary
3. Types of Pecking	Peck order 3 types of pecking Summary
4. Understanding Behaviours	Normal, abnormal Aggressive pecking Bird behaviours shown Summary
5. Strategies	Beak trimming, rearing, sprays, light intensity, shifting birds, enrichment devices, cage design (perches, solid sides, orientation of cage wire) and abrasive strips Summary
6. Benefits of Improved Feather Cover	Welfare issues, cost savings
7. Ending	Producer opening mail showing: Seminar summary Credits
8. Practice Observation	Behaviours shown, viewers identify problematic behaviour

FEATHER COVER AND PECKING PROBLEMS

SCRIPT
December 1998

Part 1. TITLE SEQUENCE

Text	Image and Sound Notes	Headings and Captions
<p>Producer on the phone VO [voice over]</p> <p>YEAH. WHAT TO LOOK FOR IN THE SHED. SURE I CAN TALK ABOUT THAT</p> <p>Phil Glatz on the phone VO</p> <p>I INTEND TO SHOW THAT THEY CAN INCREASE PROFITS BY IMPROVING FEATHER COVER.</p>	<p>Producer opening mail regarding a forthcoming seminar on feather cover. A leaflet shows a well feathered bird and one with poorer cover.</p> <p>Phone rings</p> <p>Phil Glatz opening email - re the seminar</p> <p>Phone rings</p> <p>Title superimposed over a shot in Phil Glatz's office. Photo on Phil's desk of a well feathered bird - zoom in or framed well</p>	<p>FEATHER COVER AND PECKING PROBLEMS</p>

Part 2. HUSBANDRY

Text	Image and Sound Notes	Headings and Captions
<p>Phil Glatz (continuing from the title sequence)</p> <p>YOU CAN'T ATTEND TO FEATHER COVER AND PECKING PROBLEMS WITHOUT HIGH STANDARD HUSBANDRY. THAT INCLUDES CHECKING THE BIRDS EVERY MORNING AND BEING ABLE TO RECOGNISE THEIR CONDITION.</p> <p>Producer's comment VO</p> <p>AS SOON AS I WALK INTO A SHED I CAN VIRTUALLY TELL BY THE TONE OF THEM WHETHER THEY ARE CONTENTED. IF YOU LISTEN - THERE - YOU HAVE JUST GOT THAT TONE - IF THEY WERE FRIGHTENED THERE WOULD BE A HIGH SHRILL OR IF THEY WERE UNDER STRESS THERE WOULD BE NO NOISE AT ALL.</p> <p>Phil Glatz continuing</p> <p>PRODUCERS AND STAFF HAVE TO READ THE SIGNS. THEY NEED TO RECOGNISE PROBLEMS EARLY AND FIND SOLUTIONS. BLOOD STAINED EGGS IS A GOOD EXAMPLE.</p> <p>Producer's comment (VO)</p> <p>BLOOD STAINED EGGS. THAT CAN BE A RUPTURE IN THE BIRD.</p> <p>Producer's comment (VO)</p> <p>IT CAN BE CAUSED BY BIRDS FIRST COMING INTO LAY, BY LAYING A VERY BIG EGG AND THE BODY IS NOT BIG ENOUGH TAKE THAT EGG.□</p> <p>Shed manager</p> <p>... NOTICE BLOOD STAINS ON THE EGG AND ALSO ON THE FLOOR BENEATH THE CAGE</p> <p>Producer's comment (VO)</p>	<p>Transition sound draws attention to the superimposed heading.</p> <p>Phil Glatz's office. Phil on the phone</p> <p>Manager and staff member entering the shed. Visual description of routine checking, including point of view shots of cages with generally healthy birds, close ups of alert birds, bright eyes and bright upright combs.</p> <p>Also show frightened birds and observations of a sick looking bird and a comment being written on a record sheet.</p> <p>Phil Glatz on the phone. Close up</p> <p>Industry magazine with the headline: What To Do About Blood Stained Eggs and pictures of contributing producers.</p> <p>Illustrative images of blood stained and large/small eggs included</p> <p>Shed manager demonstrating what to look for during routine checking</p>	<p>Superimposed heading stays for the whole section: HUSBANDRY</p> <p>Appropriate captions</p> <p>Appropriate captions</p> <p>Superimposed heading</p>

<p>ONCE YOU HAVE GOT A BLOOD STAINED EGG ALWAYS LOOK AT THE BIRDS IN THAT CAGE TO SEE IF THEY ARE ALRIGHT, BECAUSE THEY HAVE STRAINED THEIR BACKSIDES AND THE OTHER BIRDS IF THEY SEE IT, WILL TAKE TO IT STRAIGHT AWAY AND PICK IT OUT</p> <p>Phil Glatz VO</p> <p>STOCKWOUND SPRAY CAN BE APPLIED TO AFFECTED AREAS.</p> <p>YOU MAY FIND THAT THE COLOURED SPRAY DETERS FURTHER PECKING OR THAT PECKED BIRDS NEED TO BE SHIFTED.</p>	<p>Bird being vent pecked</p> <p>Phil Glatz in the shed, noticing a blood stained egg, identifying a vent pecked bird and applying stock wound spray.</p> <p>Background sounds change from shed to people sounds.</p> <p>Seminar participants taking a coffee break.</p> <p>Seminar room. Whiteboard has key words from the preceding session - which also serve as a summary for Part 2:</p> <p>HUSBANDRY</p> <ul style="list-style-type: none"> • Routine checking • Reading the signs • Reporting problems to supervisors • Record keeping 	<p>cont.: HUSBANDRY</p> <p>Caption: Vent Pecking</p>
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Part 3. TYPES OF PECKING

Text	Image and Sound Notes	Headings and Captions
<p>Seminar participant's comment (VO)</p> <p>THERE IS A PECK ORDER IN THE CAGES AND IF A BIRD GETS OUT OF A CAGE, AND YOU JUST GO BACK AND PUT IT IN ANYWHERE, QUITE LIKELY THERE IS GOING TO BE A FIGHT BECAUSE THEY HAVE TO RE-STABILISE THE PECK ORDER</p> <p>Phil Glatz</p> <p>THERE ARE 3 TYPES OF PECKING.</p> <p>AGGRESSIVE PECKING INCLUDES PECKING AT THE HEAD, BODY AND PARTICULARLY THE VENT.</p> <p>NON AGGRESSIVE PECKING IS GENTLE PECKING AT THE FEATHERS OF OTHER BIRDS.</p> <p>AND STEREOTYPE PECKING, IS PECKING AT THE CAGE FLOOR AND ANY PARTS OF THE ENVIRONMENT. REPETITIVE PECKING OF THEIR FEET, AND OTHER BIRD'S FEET, IS ALSO STEREOTYPE PECKING.</p>	<p>Continuing from Part 2, seminar participants talking during a coffee break with interesting but 'low key' poultry images and posters in the coffee break area</p> <p>Transition sound draws attention to the superimposed heading.</p> <p>Phil Glatz exposition at the seminar</p> <p>An overhead projector list of the types of pecking is revealed:</p> <p>AGGRESSIVE NON-AGGRESSIVE STEREOTYPE</p> <p>(This part foreshadows part 4 and makes it clear that all pecking is not problematic)</p>	<p>Superimposed heading stays for the whole section: TYPES OF PECKING</p>

Part 4. UNDERSTANDING BEHAVIOURS

Text	Image and Sound Notes	Headings and Captions
<p>Phil Glatz seminar presentation continuing</p> <p>PRODUCERS AND STAFF WHO CAN RECOGNISE THE DIFERENCE BETWEEN NORMAL AND ABNORMAL BEHAVIOURS WILL DETECT PROBLEMS EARLY. THIS PUTS THEM IN A GOOD POSITION TO IMPLEMENT STRATEGIES TO OVERCOME PROBLEMS SUCH AS AGGRESSIVE PECKING AND ITS EFFECTS ON FEATHER COVER.</p> <p>Seminar participant (VO):</p> <p>COMING TO THE QUIZ? I'LL SEE YOU THERE.</p> <p>Phil Glatz VO</p> <p>TO MAINTAIN THEIR FEATHER CONDITION, BIRDS SPEND CONSIDERABLE TIME PREENING, HEAD SHAKING, FEATHER RUFFLING AND WING AND LEG STRETCHING.</p> <p>Phil Glatz VO</p> <p>YOU CAN OFTEN OBSERVE DUST BATHING WHEN THE HENS ARE FEEDING. THEY MAKE DUST TOSSES WITH THE FEED THEN SIT ON THE FLOOR AND RUFFLE THEIR FEATHERS THEN GO BACK TO THE FEED. THEY REPEAT THIS SEQUENCE A NUMBER OF TIMES.</p> <p>THE PROBLEM WITH DUST BATHING IS THAT OTHER HENS ARE ENCOURAGED TO PECK AT THE BIRD DURING THE FEATHER RUFFLING STAGE.</p> <p>AS THIS BEHAVIOR IS STIMULATED BY DUSTY FEED, YOU CAN TRY TO AVOID PROVIDING</p>	<p>Transition sound.</p> <p>Continuing from the previous section, the overhead projector page is changed, revealing text which is almost the same as the statement Phil Glatz is making</p> <p>Overhead projector page is removed. Transition sound</p> <p>Overhead projector is switched off and picked up</p> <p>Sounds of people talking and eating. An overhead projector page features the Stockman's Hall of Fame and text:</p> <p>TEST YOUR KNOWLEDGE WHAT ARE THESE BIRDS DOING?</p> <p>Various hen behaviours are shown - and identified by captions.</p> <p>Bird being pecked during dust bathing</p>	<p>Overhead Projector text serves as the section heading</p> <p>Behaviour captions:</p> <ul style="list-style-type: none"> • cage peck • preening • drinking • head shake • head scratch • restricted wing flap • tail wag • head peck • feather ruffle • dust bathing

<p>THE BIRDS WITH DUSTY FEED.</p> <p>CAGE HENS EXPRESS NESTING BEHAVIOUR IN THE HOUR BEFORE THEY LAY THE EGG. DURING THIS PERIOD HENS EXHIBIT STEREOTYPE PACING AND INCREASED AGGRESSION. YOU MAY FIND THAT THE FLOCK IS MORE EASILY AGITATED IN THE HOURS WHEN MOST OF THEM ARE LAYING.</p>	<p>Time lapse video of bird pacing then laying</p>	<p>Pre-lay behaviour (time lapse video)</p>
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Part 5. STRATEGIES

Text	Image and Sound Notes	Headings and Captions
<p>Phil Glatz</p> <p>STRATEGIES TO IMPROVE FEATHER COVER AND REDUCE AGGRESSIVE PECKING INCLUDE:</p> <p>BEAK TRIMMING. THIS LESSENS BOTH THE DAMAGE CAUSED BY PECKING AND THE BIRDS' DEVELOPMENT OF PECKING VICES.</p> <p>OUR RESEARCH SHOWS THAT THE AGE AT WHICH CHICKENS ARE BEAK TRIMMED ALSO INFLUENCES THEIR PECKING HABITS AND THAT THEY RETAIN THESE HABITS FOR LIFE. . BIRDS TRIMMED AT DAY OLD PECK LESS THAN THOSE TRIMMED AT 10 DAYS OF AGE. SO TRIM AS EARLY AS POSSIBLE TO MINIMISE THE INCIDENCE OF PECKING.</p> <p>THE WAY THE BEAK IS TRIMMED IS CRUCIAL. TRIM HALF OF THE TOP BEAK AND A THIRD OF THE LOWER BEAK USING A HEATED BLADE AND A CAUTERISATION TIME OF 2 SECONDS.</p> <p>THIS METHOD CREATES A GAP BETWEEN THE TIPS OF THE TOP AND BOTTOM BEAKS WHICH LIMITS TISSUE DAMAGE WHEN OTHER BIRDS ARE PECKED. IT ALSO MINIMISES THE FORMATION OF NEUROMAS AND CHRONIC PAIN IN THE BEAK.</p> <p>REARING. BIRDS REARED ON THE FLOOR AND ALSO FED SCRATCH GRAIN WILL PECK AT THE LITTER INSTEAD OF OTHER BIRDS. IN REARING CAGES, HOWEVER, THE BIRDS LEARN TO PECK MORE AT EACH OTHER AND CONTINUE THIS VICE THROUGHOUT THEIR LIVES.</p> <p>SPRAYS. A SPRAY CAN BE USED TO TREAT VENT DAMAGE AND OTHER LESIONS AS SOON AS INJURIES HAVE BEEN FOUND.</p> <p>LIGHT INTENSITY. REDUCING LIGHT INTENSITY IN THE SHED REDUCES THE INCIDENCE OF HEN PECKING. THERE HAS BEEN A VIEW THAT EUROPEAN STRAINS ARE LESS AGGRESSIVE THAN AUSTRALIAN STRAINS, BUT IT IS THE LOWER LIGHT INTENSITY WHICH REDUCES PECKING IN EUROPE. UNDER USUAL AUSTRALIAN CONDITIONS EUROPEAN STRAINS ARE ACTUALLY MORE AGGRESSEIVE THAN LOCAL STRAINS.</p> <p>ULTRA AGGRESSIVE BIRDS. THESE SHOULD</p>	<p>Transition sound draws attention to the superimposed section heading.</p> <p>Phil Glatz giving a seminar presentation using a powerpoint display - on which a list of strategies is built up. Illustrative images are inserted - often in a window.</p> <p>Beak trimmed birds (window)</p> <p>Beak trimming illustrations</p> <p>Birds on the floor, feeding (shown in a window)</p> <p>Birds in rearing cages (shown in a window)</p> <p>Vent spraying (window)</p> <p>Light dimming (window)</p>	<p>Superimposed heading stays for the whole section: STRAEGIES</p> <p>Powerpoint display captions:</p> <p>Beak trimming</p> <p>Rearing</p> <p>Sprays</p> <p>Light intensity</p> <p>Shifting birds</p>

<p>BE SHIFTED FROM THEIR CAGE IF DAMAGE IS NOTICED ON OTHER BIRDS.</p> <p>ENRICHMENT DEVICES. ENVIRONMENTAL ENRICHMENT DEVICES CAN BE FITTED TO THE CAGE. THESE ARE VERY MUCH LIKE THE DEVICES THAT ARE IN BUDGIE AND CANARY CAGES. THEY CAN DRAW PECKING AWAY FROM OTHER BIRDS, ESPECIALLY IF INTRODUCED DURING REARING.</p> <p>CAGE DESIGN. IN EUROPE IT HAS BEEN SHOWN THAT HENS HOUSED IN CAGES WITH HORIZONTAL WIRE FRONTS HAVE BETTER FEATHER COVER, ESPECIALLY ON THE NECK, THAN THOSE IN CAGES WITH VERTICAL WIRE FRONTS</p> <p>AN AUSTRALIAN RESEARCH PROJECT INSTALLED PERCHES IN CAGES AND EVALUATED BIRD WELFARE AND PRODUCTION. FEATHER COVER AROUND THE VENT WAS IMPROVED BECAUSE VENT PECKING WAS DIFFICULT FROM THE PERCH.</p> <p>LIKE WISE, WE HAVE OBSERVED REDUCED INTER CAGE PECKING IN CAGES WITH SOLID SIDES. HOWEVER, AUSTRALIAN PRODUCERS ARE CAUTIONED AGAINST USING SOLID SIDED CAGES IN NATURALLY VENTILATED SHEDS BECAUSE IN HOT CONDITIONS, THE REDUCED VENTILATION WILL RESULT IN HEAT STRESS TO THE HENS.</p> <p>ABRASIVE STRIPS. BIRDS THAT SIT OR STAND ON TOP OF OTHER BIRDS CAN SCRATCH FEATHERS OUT OF THEIR BACKS. ABRASIVE STRIPS ARE BEING USED IN MANY CAGES IN EUROPE AND COULD BE USED UNDER AUSTRALIAN CONDITIONS. THESE COULD BE FITTED TO THE EGG GUARD AND THE BACK OF THE FEED TROUGH AND WILL REDUCE THE LENGTH OF CLAWS AND PREVENT BIRDS FROM BACK SCRATCHING OR CLAWING THE FEATHERS.</p>	<p>Routine checking shown and A visual description of the correct way to put birds in and out of cages.</p> <p>Enrichment device (window)</p> <p>Horizontal and vertical wire cages (window)</p> <p>Birds on perches (window)</p> <p>Solid side cages and naturally ventilated shed (window)</p> <p>Abrasive strip demonstration by Phil Glatz</p>	<p>Enrichment devices</p> <p>Cage design</p> <p>Abrasive strips</p> <p>The completed list of strategies on the Powerpoint display serves as a summary for Part 5:</p> <ul style="list-style-type: none"> • Beak trimming • Rearing • Sprays • Light intensity • Shifting birds • Enrichment devices • Cage design • Abrasive strips
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Part 6. BENEFITS

Text	Image and Sound Notes	Headings and Captions
<p>Phil Glatz</p> <p>WHILE THERE ARE OBVIOUS BENEFITS OF REDUCED PECKING, THE EFFECTS OF POOR FEATHER COVER HAVE BEEN HARDER TO PREDICT. WE HAVE RECENTLY COMPLETED STUDIES INTO THE ANATOMICAL AND PRODUCTION EFFECTS OF POOR FEATHER COVER.</p> <p>Chris Lunam VO</p> <p>THE STUDY WAS UNDERTAKEN TO ASSESS WHETHER POOR FEATHER COVER WAS LIKELY TO CAUSE CHRONIC PAIN. THE SKINS WERE EXAMINED FOR FEATURES ASSOCIATED WITH CHRONIC PAIN IN OTHER ANIMALS. THESE FEATURES INCLUDED THE DISTRIBUTION AND TYPE OF NERVES IN THE SKIN AS WELL AS INFLAMMATION.</p> <p>OUR OBSERVATIONS INDICATE THAT HENS WITH POOR FEATHER COVER DO NOT SHOW ANY ANATOMICAL OR BEHAVIOURAL SIGNS THAT THEY ARE FEELING PERSISTENT PAIN.</p> <p>Phil Glatz</p> <p>OUR RESEARCH SHOWS THAT FARMERS SUFFER CONSIDERABLE INCREASES IN FEED COSTS AND LOSSES IN EGG INCOME BECAUSE OF POOR FEATHER COVER IN WINTER.</p> <p>A PRODUCTION TRIAL SHOWED THERE WAS AN INCREASE IN FEED COSTS OF 15% AND LOSS IN EGG INCOME OF 8% WHEN HENS HAD POOR FEATHER COVER IN WINTER. THIS IS ESTIMATED TO CAUSE A LOSS OF \$37,000 ANNUALLY FOR AN AVERAGE FARM WHICH HAS 30,000 LAYERS.</p>	<p>Transition sound draws attention to the superimposed section heading.</p> <p>Phil Glatz giving seminar presentation</p> <p>Leaflet describing the research project with images of Phil Glatz and Chris Lunam</p> <p>microscope images of features mentioned</p> <p>Phil Glatz giving a seminar presentation with Powerpoint graphics plotting the increased feed costs and reduced egg income associated with feather cover problems.</p>	<p>Superimposed heading stays for the whole section: BENEFITS</p> <p>Microscope image captions</p> <p>Powerpoint graphics serve as a summary of Part 6.</p>

Part 7. ENDING

Text	Image and Sound Notes	Headings and Captions
	<p>Sounds change from public event to domestic sounds.</p> <p>Producer is opening mail regarding a future seminar. Best Practice Checklist Forms relating to feather cover are enclosed. (Such forms are to be supplied with each copy of this video program).</p>	<p>CREDITS:</p> <p>Thanks</p> <p>Production credits</p> <p>Research project references</p> <p>Related video tape and training package references</p> <p>RIRDC credit</p>

Part 8. PRACTICE OBSERVATION

Text	Image and Sound Notes	Headings and Captions
<p>(This part can be used on its own in training situations.)</p>	<p>Brief sequence with music showing hen behaviour being recorded by research cameras and Phil Glatz viewing tapes.</p> <p>Audio instructions of what the viewer will do.</p> <p>The behaviours featured in Part 4 are shown - with an identifying caption preceding each behaviour.</p> <p>Some bird sounds are included with captions</p>	<p>Title: PRACTICE OBSERVATION</p> <p>Introduction to an observation exercise including the question:</p> <p>Which of the following behaviours are problems or can lead to problems?</p> <p>Caption for each behaviour</p> <p>List of problem behaviours</p>

This section has been included so that employees have an opportunity to identify problematic behaviours. It provides a practice opportunity to use the information provided in the video and encourages viewers to extend this practice into the shed. A checklist is provided with the video so that employees can monitor a flock more thoroughly on a daily basis.

Feather Cover & Pecking Problems

Video - fact sheet

National Competencies

The Feather Cover & Pecking Problems video partially addresses the following national competencies:

RUA AG1614PL A	Care of Poultry
1614.2	Observe poultry regularly
1614.3	Display good stock husbandry practices
RUA AG3615PL A	Supervise Unit Operations
3615.2	Monitor and assess flock health
RUA AG4615PL A	Supervise Flock Health Program
4615.1	Supervise flock health strategies

Competencies combined with assessment guidelines and national qualifications make up the endorsed components of the Agriculture Training Package (Poultry Production). These three components of the training package provide a framework for the training of both poultry farm workers and managers. The video could be used as a resource to assist the development of the above competencies.

Further Information

Further information about the Agriculture Training Package (Poultry Production) can be obtained from;

Rural Training Council of Australia
PO Box E10
KINGSTON ACT 2604
Phone: (02) 6273 2514
Fax: (02) 6273 4811
e-mail: rtcaexof@enternet.com.au

BEST PRACTICE CHECKLIST

Daily Check

To monitor feather cover, the following checks should be made by an observant stockperson each day. Signs that should be looked for include:

Check for the following signs	Yes	No	Implication
Is the light intensity at the recommended level?			Pecking problems may increase if light intensity is higher than the recommended level
Are there any blood stained eggs?			Vent pecking may be a problem
Have the birds been flicking feed about excessively?			Dusty feed may be increasing dust bathing which can increase pecking problems
Are there any ultra aggressive birds?			Ultra-aggressive birds may need to be moved to reduce pecking problems
Are there birds with wounds around the head?			Pecking may be problem in the flock
Do the birds seem agitated?			Agitated birds are more likely to cause pecking problems
Is there a trend of reduced feather cover?			Pecking may be problem in the flock, increased feed costs

Stockpersons should also be able to identify bird behaviour. This improves their ability to distinguish between behaviour that is normal or abnormal. Abnormal behaviour that involves pecking often leads to feather loss.

Behaviour - can you identify	Yes	No	Implication
Stereotype pecking			Typical cage behaviour - indicates frustration and potential for pecking if excessive
Aggressive pecking			Abnormal behaviour - feather loss is likely, causing increased feed costs
Non- aggressive pecking			Normal behaviour
Preening			Normal behaviour
Head shaking			Normal behaviour
Feather ruffling			Normal behaviour
Wing stretching			Normal behaviour
Leg stretching			Normal behaviour
Dust bathing			Normal behaviour but can cause other birds to peck the dust bathing bird
Pre-lay behaviour			Typical cage behaviour - can lead to agitation in the flock

It is important to look for trends that indicate some change in the flock. Written records help this process as can photos taken on a regular basis. When a trend is detected, discuss this with your supervisor so that any implications can be identified.

BEST PRACTICE CHECKLIST

for each batch of hens

For each batch of new hens, find out the answers to the following questions. This will give you an idea of the potential for pecking problems in a new flock.

QUESTION	Y	N	IMPLICATION
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Rearing

Were the birds reared on the floor?			Peck less than birds reared in cages
Were the birds reared in cages?			Peck more than birds reared on floor
Were the birds provided scratch grain during rearing on floor?			Peck less than birds reared on floor without scratch grain

Beak Trimming

Were the birds beak trimmed by experienced person?			Inexperience beak trimmers often do not beak trim to industry standards-can effect lifetime performance of birds
Were the birds beak trimmed at day old?			Peck less than bird trimmed at 10 days
Were the birds beak trimmed at 10 days?			Peck more than birds trimmed at day old
Were the birds retrimmed?			Reduces pecking problems

Light

Are you able to control light intensity in shed?			Greater potential for pecking problems if unable to control light intensity
Are you able to maintain recommended light intensity for this strain?			Greater potential for pecking problems if recommended light intensity not maintained
Is there uneven light intensity in the shed?			Greater potential for pecking problems-can be a trigger for flighty flocks

Cage Design

Have you installed enrichment devices in cage?			Will reduce pecking
Do you have horizontal bars on front of cage?			Reduces feather loss on neck
Do you have abrasive strips on egg guard or feed trough?			Reduces claw length, reduces potential for skin abrasions and cannibalism
Do you have perches installed at floor level in cages?			Reduces pecking
Do you have solid sided cages?			Reduces inter-cage pecking

Feed

Are you feeding low protein diet?			Feather cover can be effected especially with lighter strain
Are you likely to use dusty feed?			Dusty feed increases dust bathing

Other

Do you have a method for assessing feather cover of hens?			Enables regular assessment of deterioration in feather cover
Are the birds a European strain?			Peck more than Australian strains

Once you have an idea of the potential for pecking problems, consider which areas you can improve upon. You might also like to think about any changes you might make for the next batch of birds.

Video Evaluation Feather Cover and Pecking Problems

1. What is your role in the egg industry?

.....

2. How do you rate your interest in feather cover and pecking problems?

High interest Some interest Low interest

3. Why did you watch the video program?

.....

.....

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
4. The video kept my attention					
5. The video was easy to follow					
6. The video was more like attending an event than listening to information					
7. The video provided new information to me					
8. The video gave me a new perspective on feather cover					
9. The video raised new questions for me					
10. The video will lead to discussion with others					
11. The practice session was worth including					
12. The information sheets were useful					

13. Which parts of the video did you find most interesting?

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14. Was anything left unanswered? If so, what was it?

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15. Describe how you might use the information gained to improve feather cover.

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16. Any other comments.

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Please return your evaluation to:

Freepost 1, Home Study Coordinator, Murrumbidgee College of Agriculture YANCO NSW 2703