

Aerial Agricultural Association of Australia

Spraysafe Exam Development

Overview Report



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Aerial Agricultural Association of Australia Spraysafe Exam Development Overview Report

The Task

This document is a brief report to the Aerial Agriculture Association of Australia outlining a revised assessment process for the Spraysafe program. It sets the context for six attachments which are the important deliverables from this project.

At the outset of this project, the outline for developing new Spraysafe exams indicated that four steps would be undertaken to complete the project for the Aerial Agriculture Association of Australia [AAAA].

These steps were:

Step 1 - Scoping

Review of the National Competencies to determine which competencies are to be considered in the assessment process.

Product - List of relevant National Competencies.

Step 2 - Development of Map

Map existing case studies against the competencies to determine which statement of competence is assessed by which questions and case studies. Identify any areas where insufficient questions have been developed.

Products - map of questions and case studies against competence.

Report identifying areas where insufficient questions have been developed and scoping of aspects where additional questions are required.

Step 3 – Development/Rework of questions

Development of additional/reworked questions/ case studies – if required

Product – bank of additional questions

Step 4 – Preparation of exams

Preparation of five exams which mix and match questions and case studies appropriately to ensure that all competencies are assessed

Product - Five exam papers, laid out and ready to use

All of these steps have been completed. At Step 2 a map was provided to AAAA which lead to development of some new questions and reshaping of others. This report follows the completion of Step 4 and contains all products required by the AAAA for the new assessment processes. The most important product is the provision of five exams – each of equal intensity - for use by the AAAA in assessing pilots into the future.

The Competencies

The exams attached meet four of the six competency elements within RTC 704A. *Prepare and Apply Chemicals*. These are elements 2 to 5. See description of these four elements and related performance criteria below.

RTC3704A: Prepare and apply chemicals

Element	Performance criteria
2. Prepare appropriate chemical	2.1 Chemical label and Material Safety Data Sheets (MSDS) are read and

understood

2.2

Labels are checked to ensure chemicals meet user requirements and specifications

2.3

Chemicals are prepared from those registered for the intended purpose, and to suit the organisation's chemical use strategy

2.4

Legislation and regulations concerning chemical use are identified and followed

2.5

Occupational Health and Safety(OHS)hazards and risks and risk control requirements associated with use of the chemicals are identified

3. Prepare to use chemicals according to the label and MSDS

3.1

Personal protective equipment is selected and checked for use according to the product label and Material Safety Data Sheets

3.2

Requirements for *pre and post-operative checks* on equipment are followed

3.3

Damage, wear or malfunctions of any equipment is identified and reported or repaired

3.4

Requirements for the selection, preparation and adjustment of *application equipment and tools* for the appropriate chemicals are followed

3.5

Mixing rates are defined and calculated

3.6

Directions, standards and legislative requirements for mixing chemicals are followed

4. Apply chemicals

4.1

Meteorological conditions and forecasts are assessed prior to and during application

4.2

Hazards of particular chemicals are identified

4.3

Risks to others and the environment are assessed and controlled

4.4

Application equipment calibration procedures are followed

4.5

Procedures and precautions for the use of the chemicals are interpreted from labels and accreditation requirements

4.6

Requirements for chemical handling and application are determined from directions, standards and legislative requirements

4.7

Chemicals are applied safely and effectively according to directions

4.8

Chemical spills or accident procedures are followed

4.9

First aid equipment is made available on site

5. Clean up following chemical application

5.1

Tools or equipment required to clean up chemicals are selected

5.2

Requirements for cleaning equipment and sites are defined and followed according to directions and standards

5.3

Requirements for disposing of unused chemicals, empty containers or spilled material are defined from directions and standards

5.4

Procedures for reporting chemical spills are followed

It is noted that should the AAAA wish to provide a formal qualification under the National Training Framework through partnership with a Registered Training Organisation [RTO], additional content would need to be added to the Spraysafe Program to cover competency elements 1 and 6 in RTC3704A: *Prepare and apply chemicals*. Additional assessment tasks would also need to be developed to assess these elements. The following competencies are not covered in the program or assessed in the proposed exams.

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|--|-----|--|
| 1. Determine the need for chemical use | 1.1 | Nature and level of the pest, weed infestation or disease as identified |
| | 1.2 | Need for action is assessed |
| | 1.3 | Assess the requirement for chemical use as an option within an integrated pest management strategy |
| | 1.4 | Hazard and risk analysis of different chemical options is undertaken |
| | 1.5 | Requirement for chemical application including coverage by appropriate insurance is identified and confirmed |
| 6. Record application details | 6.1 | Application of chemicals is recorded according to organisational procedures |
| | 6.2 | Details of the specific chemical concerned are recorded correctly in the chemical inventory according to regulations |
| | 6.3 | |

Inventory of personal protective equipment and application equipment is recorded

6.4

Procedures and requirements for reporting application details to senior management or client are followed

6.5

Records of injury or poisoning associated with application of chemical are made and provided to the appropriate person.

About the Exams

The following information is provided to set the five assessment tools [exams] into context. These exams are attached and are named Exams A to A. In this regard it should be noted that:

- Each exam contains forty seven multiple choice questions and three case studies. The case studies contain varying numbers of questions.
- Participants get two hours to complete the exam and fifteen minutes of reading time prior to commencement.
- The completion of the exam is done in hard copy. While the exam is open book in nature - although it could be changed to a closed book exam if desired – access to the internet during completion of the exam would not be appropriate. Hence it is not recommended that the exam is completed on line.
- All questions are numbered so that feedback to the applicant can be given by question.
- Because there are a varying number of questions in the case studies, some exams appear longer than others. This is not the case, in reality. Each exam contains forty seven multiple choice questions and three case studies.
- The forty seven multiple choice questions are spread across the competencies as indicate in the dot points below It should be noted that questions about similar competencies are groups together in each exam. This means that during the exam process the participant will be focusing on one element of the task through a number of questions. This reflects what occurs in normal practice, the pilot will be concerned about *applying chemicals* as one part of the process and *cleaning up* at another point in time.
 - Competency Element 2: Thirteen questions
 - Competency Element 3: Sixteen Questions
 - Competency Element 4: Fourteen Questions
 - Competency Element 5: Four Questions.
- The spread of questions outlined above indicates that each of the four designated competency elements is addressed in sufficient detail to allow certainty of assessment. A close review of the questions in each exam would indicate that some questions and case studies are used in two different exams. This has

been kept to a minimum and in the circumstances it is an appropriate option which ensures rigor in the measurement of each competency element.


- As indicated in the excel map of questions also attached to this report, the case studies address the following competencies and they have been mixed across exams in such a way that the optimal range of competency elements is addressed through the case study component. It should be noted that the two case studies that only address Competency Element 4 [single competency only] have not be used in the same exam.
 - Case study 1 can be used to assess competency elements 3 and 4.
 - Case study 2 can be used to assess competency element 4 only.
 - Case study 3 can be used to assess competency elements 3 and 4 and to some extent 2 and 5.
 - Case study 4 can be used to assess competency elements 3 and 4.
 - Case study 5 can be used to assess competency element 4 only.
 - Case study 6 can be used to assess competency elements 2, 3 and 4

The Outputs

The following materials are attached and these complete the project:

1. *An excel file listing all questions and case studies and allocating them to five exams each of equal focus.* It should be noted that this data base contains all proposed questions allocated to exams – even those questions not used in any of the exams on the advice of AAAA. It is colour coded for ease of access and could form the base of further work in this area, if required.
2. *Five exams designed for immediate use by AAAA.* It is recommended that they are used randomly so that no applicant is aware in advance of the exam that they will be receiving. Further it is recommended that they are not web published and the exam paper itself is used as the answer sheet. This reduced the likelihood of a blank exam being passed form one applicant to another.

I wish you well with the implementation of this revised assessment process.



Grahame Collier
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