About Us

The Revegetation Industry Association of Western Australia (RIAWA) was formed in 2003.

Our aim is to ensure all revegetation and rehabilitation works conducted both now and in the future are sustainable and to the highest standards possible.
Native Seed Accreditation System

After an extensive consultation period the RIAWA Native Seed Accreditation System was developed.

The primary aim is to raise the quality assurance and sustainability of seed collection and supply chain in Western Australia.
RIAWA Training Program Development

• RIAWA Native Seed Accreditation System, which was launched in 2016. This is one of the first such systems developed anywhere in the world.

• Initially RIAWA Accreditation was only open to experienced seed collectors with more than two years practical experience. This however did not accommodate new collectors working for experienced organisations. Therefore, to complement the accreditation system an on-line training module was developed to provide training in the RIAWA standards for all current and future seed collectors.

• Former RIAWA committee members Brook Devine and Dallas Lynch undertook the significant task of developing the program. It was clear the previous training information within the education system was outdated, like the Florabank guidelines which industry referred to as a resource.
Native Seed Accreditation System

The backbone of the Native Seed Accreditation System is the RIAWA Seed Standards.

Developed from the Florabank Guidelines.
MENU

Please work your way through, starting from the top

INSTRUCTIONS

INTRODUCTION

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GUIDELINES

RIAWA STANDARDS

MY RESULTS
RIAWA has developed this training programme for new and existing collectors.

- Protect purchasers and suppliers of seed.
- Help regulate the industry.
- Develop the seed accreditation process.
Native Seed Accreditation System

Advantages for seed buyers purchasing from an accredited seed collector:

✓ Sustainably collected.
✓ Specified quality.
✓ Prices and quality comparison.
✓ List of accredited seed suppliers and collectors.
Native Seed Accreditation System

Advantages for collectors and suppliers in being an RIAWA accredited seed collector:

- Industry recognition of quality.
- Product quality and seed grade differentiation.
- Promotion as accredited seed suppliers and collectors.
Legislation & Flora Licensing

Naturally occurring native flora is protected in Western Australia under the Biodiversity Conservation Act 2016.

Penalties apply for taking native flora without the correct authority.

- Up to $50,000 for individuals
- Up to $250,000 for corporations.

Taking critically endangered species can reach $500,000 for individuals and $2.5 million for corporations.

You can find a copy of the Biodiversity Conservation Act 2016 in the course resources.
Florabank.com.au is a partnership between Greening Australia, CSIRO Forestry and Forest Products Commission through the Australian Tree Seeds Centre and the Australian National Botanical Garden.

Best practice guidelines for community and industry revegetation projects in Australia.
Millenium Seed Bank Partnership

This training module also refers to guidelines created by the Millennium Seed Bank Partnership.
RIAWA Guidelines

Please work your way through each of the guidelines in order.

- Seed Collection Techniques
- Seed Processing
- Seed Post-Harvest Handling
- Seed Cleaning
- Seed Labelling
- Seed Testing
- Seed Storage
Seed Collection Techniques

Collection techniques greatly influence the quality of seed collected and sustainability of the plant population.

Always use best practice guidelines.

General Rules For Collecting

- Conduct in a sustainable manner.
- Work within licence conditions.
- Harvesting must not affect viability of the plant, population or surrounding bush land.
- Do not collect more than 20% of seed on offer from a plant.
- Collect only in nominated and authorised areas.
- Do not collect from protected flora or those specified on licence.
Jarrah Dieback

Jarrah dieback caused by the water mould *Phytophthora cinnamomi* is a widespread concern in bushland.

Follow protocols to prevent spread.

Watch Video

Phytophthora dieback devastation - Photo © Parks and Wildlife
Plant Identification

Do not collect seeds if you are unsure of the species.

Send a voucher specimen off for positive identification.
Quality

To ensure genetic diversity, collect from at least ten widespread plants in the population.

Never take all samples from just one plant.

For more information on quality and identification, refer to Florabank Guideline 5.
Collection Teams

There must be at least 1 accredited collector with no more than 4 non-accredited collectors in a team.

Collection Areas

If working across a large area, always separate samples into areas or provenances to ensure genetic integrity of seed.

Start separate batches for locations more than 10km apart.

Understand the end use of the seed.
Record Keeping

Always maintain accurate records and collection data.

- Genus / Species
- Unique batch number
- Collection location with GPS
- Number of individual plants
- Names of collectors
- Collection date
Weed Contamination

Collection techniques should minimise the collection of weeds.

Vacuum harvest only in weed-free areas or where target seeds can be processed to a weed-free sample.
Seed Processing

Minimum processing records:

- Batch number
- Genus and species
- Name of person processing seed
- Date of processing
- Method of processing
- Weight of processed seed
- Seed grade
Post-Harvest Handling

Avoid re-hydrating seed by exposing to conditions greater than 50% relative humidity.

Do not keep in collection bags for more than 2 days.
# Fruit Types

## Dehiscent Fruits

Seeds with dehiscent fruits split and release seeds at maturity.

- Lay out evenly on a drop sheet.
- Well ventilated, vermin proof environment.
- Preferably with some sunlight exposure.

## Indehiscent Fruits

Indehiscent fruits do not open when mature to release their seeds.

- Lay out evenly and sparsely.
- Well ventilated, vermin-proof area.
- In sunlight.
- Turn occasionally.
- Bring in as soon as possible once dried out.
Fleshy Fruits - Drying

Fleshy Fruits

Seeds within fleshy fruits should be processed as quickly as possible.

Air Drying

Once this process is completed seed can be laid out on a drop sheet for air drying.

Transfer to storage when seed moisture reaches a 50% relative humidity equilibrium.

Do not pile them up.
Seed Cleaning

- Safety side – plant toxins, dust
- Visual inspection of Seed
- Removal of Non-Seed Material
- Threshing
- Sieving
- Fine Cleaning
- References and Resources
Appropriate labelling is vital for batch identification.

ACME Seed Company

Batch No: 2468-10  
Species: Acacia alata  
Collected: 1 January 2020  
Weight: 1.250 kg  
Grade: A (Standard Commercial)  
Location: Teesdale 2 Forest Block
Seed Testing

Testing will determine if the seed meets the required standards.

RIAWA has established seed grades within the published standards.

For more information refer to RIAWA Standard 4 – Seed Marketing & Supply.
Viability Testing

Viability can be determined by three methods.

- Cut Test
- Squeeze Test
- Smear Test

Squeeze Test

Soak in water for 2 - 4 days then squeeze with tweezers to reveal embryo.
Batch Viability

Batch viability is calculated as a percentage from the sample size.

Represented by the percentage from the test samples.

Purity Testing

The purity is the composition by weight of the viable seed in a gram of material.

The purity of the batch will determine if it meets commercial purity standards.
Seed Storage

The aim of storage is to maintain the viability of the seed from processing until final use.

Basic requirements:

✓ Seed collected from fully mature fruit.
✓ Seed is well dried and cleaned.
✓ Stored in airtight containers.
✓ Stored at constant temperature and relative humidity.
✓ Thorough record keeping.
Seed Storage – RIAWA Standards

There are three RIAWA standards for storage.

Click to learn more

- Minimum Standard
- Medium Term Standard
- Long Term Standard
# Common Storage Standards Encountered

<table>
<thead>
<tr>
<th>Minimum Standard</th>
<th>Medium Term Standard</th>
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<tr>
<td>(B &amp; C Grade Seed)</td>
<td>(A, A+ Grade Seed)</td>
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- Checkmark list:
  - Dry facility
  - Out of direct sunlight
  - Ambient temperature and humidity.

- Checkmark list:
  - Dry air conditioned or cool room.
  - Maximum temp 25°C.
  - Relative humidity <60%.
RIAWA Standards

You must comply with the RIAWA Standards to become an accredited seed collector or supply accredited seed.

1. Seed Harvesting
2. Seed Processing
3. Seed Storage
4. Seed Marketing and Supply
5. Payment of Contractors and Staff
6. Seed Orchards
7. Collector Training
RESULTS: Vicki Smith

RIAWA Seed Collection Course

100% Your Score
80% Passing Score

PASS You've passed this course.

Please use the print option to save a copy of certificate and send to enquiries@riawa.com.au

Certificate of Completion

This is to certify that

Vicki Smith

has completed the course

RIAWA Seed Accreditation - Training Module

Completed: October 6, 2021

RIAWA Revegetation Industry Association of WA
Training Summary

• Undertaken on limited budget by RIAWA
• Training provides links to resources (New Florabank Guidelines)
• Course will always need reviewing as standards evolve
• Requirement of accreditation process but serves a wider purpose to industry
• Useful tool for education in our industry
• Short course (45 mins) but very informative