

Seedwise Pty Ltd – Application for substitution of a current authorisation (A91406).

1.0 Applicant details

- 1.1 Seedwise Pty Ltd (Seedwise)
ACN: 124 795 893
Unit 1/32 Mercer Parade
Newtown Vic 3220
- 1.2 Contact: Person: Denis McGrath
Position: Director
Telephone: 0408 688478
Email address: denis@seedwise.com.au
- 1.3 Business Activity Description:

The End Point Royalty (EPR) system is widely supported in the Australian grain industry as an effective method for plant breeders to recuperate the value of their intellectual property (i.e. the grain variety they have developed). Under the EPR system, owners of plant breeder rights (PBR Owners) collect a Royalty payment from Grain Growers on each tonne of the Grower's harvest at the point it is sold / used on farm (i.e. at the end point). Typically, PBR Owners appoint a Royalty Manager to keep records on all Grain Growers using their Royalty-earning Varieties. As there are more than 13,000 Grain Growers in Australia this can be highly costly.

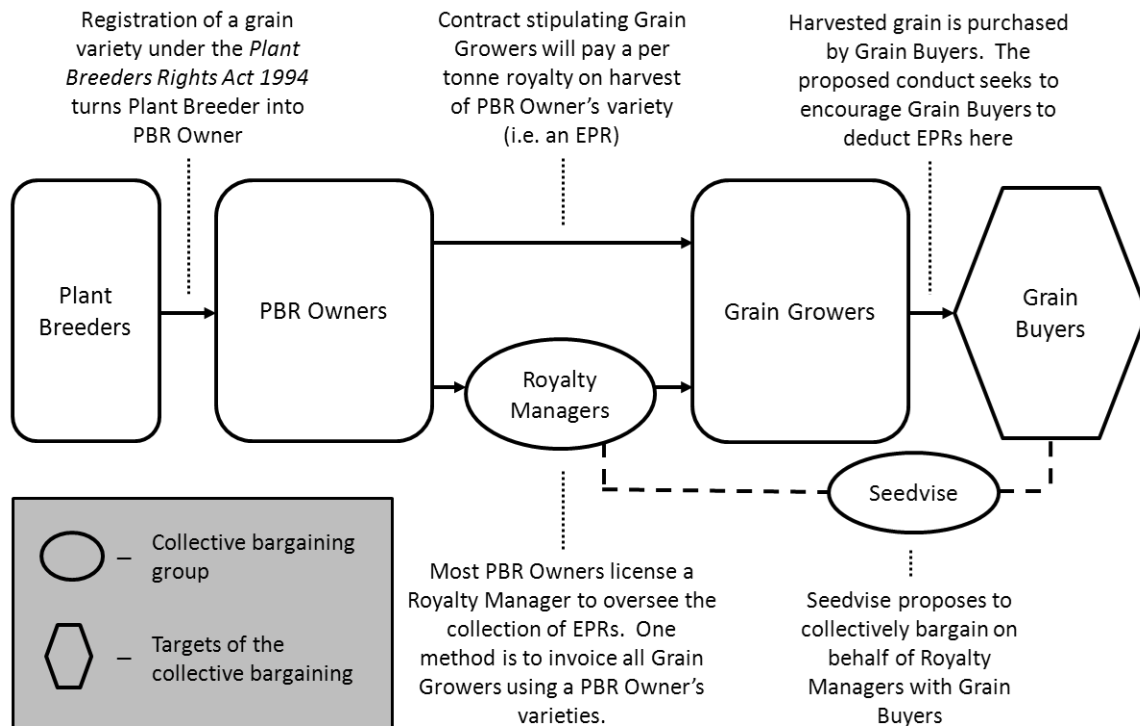
Accordingly, encouraging Grain Buyers (who purchase grain from the Growers, and who are numbered only in the hundreds) to participate in the collection of EPRs has the potential to greatly simplify the administrative burden of monitoring the use of Royalty-earning Varieties and collecting associated EPRs. Under an automated system, Grain Buyers can identify the volume of each variety that they buy, and subtract the relevant EPR from their payment to the Grain Grower. The Grain Buyer then transfers the EPR to the Royalty Manager.

While participation of Grain Buyers is important to the effectiveness and efficiency of the EPR system, the collection of EPRs is not a core business area for Grain Buyers. Therefore, to encourage their participation in the EPR system Royalty Managers pay Grain Buyers a Collection Fee.

Seedwise is an EPR Agent currently representing thirteen Royalty Managers (who manage 234 Royalty-earning Varieties). Seedwise negotiates contracts on behalf of Royalty Managers with individual Grain Buyers over the terms and conditions on which EPRs are collected and remitted, including the amount of the Collection Fee. The contracts allow the Grain Buyer to deal with each Royalty Manager on the same terms, thereby reducing the cost of participation for the Grain Buyer.

Figure 1 below provides a diagram of the grain supply chain and the roles of Royalty Managers and Seedwise in the end point royalty collection process.

Figure 1: The grain supply chain and the proposed conduct



2.0 Authorisation to be substituted

2.1 Current registration number: A91406, Date of Authorisation: 11th June 2014

2.2 Parties to the authorisation that is to be substituted:

The list below provides details of the current Royalty Managers that engage the EPR Agent (Seedwise Pty Ltd). New Royalty Managers that were not part of the original ACCC Authorisation are identified with an asterisk.

Australian Grain Technologies Pty Ltd (AGT) 20 Leitch Road Roseworthy SA 5371
 ABN# 65 100 269 930

InterGrain 19 Ambitious Link, Bibra Lake WA 6163, ABN# 90 128 106 945

SeedNet 7 Golf Course Road, Horsham, VIC 3402. ABN# 73 008 743 217

Nuseed 5 Ballinger Street, Horsham Vic 3400, ABN# 82 088 231 814

NPZ Australia Pty Ltd c/- Amberley Business Centre Level 3, IBM Building 1060 Hay Street West
 Perth WA 6005 ABN# 26 164 063 389

COGGO Ltd 10A Danzil Street, Willagee WA 6156, ABN# 35 091 122 039

Grainsearch 5 Endeavour Way, Alfredton Victoria 3355, ABN# 83 004 227 927

Advanta Seeds trading as Pacific Seeds 268 Anzac Avenue Toowoomba QLD 4350
ABN# 87 010 933 061

Heritage Seeds PO Box 6175 Halifax Street Adelaide SA 5000, ABN# 43 007 614 379

***Elders Rural Services Australia Ltd** Level 6, 160 Queens St, Melbourne 3000 ABN: 72 004 045
121

***Seed Force Pty Ltd** 11 Future Court, Shepparton Vic 3632, ABN# 11 118 991 272

***Agronomy for Profit** PO Box 2326 Geraldton WA 6531 ABN# 83 536 922 975

***Seed Exchange Australia Pty Ltd** PO Box 3892, Robina Town Centre, Qld 4230
ABN# 31 609 480 819

2.3 The reason for seeking revocation

Seedvise is still actively engaged in attracting grain buyers to establish EPR Collection services on behalf of Royalty Managers. Therefore, as the current authorisation expires on 4th July 2019, Seedvise is seeking revocation of the existing authorisation A91406, to be substituted with a replacement authorisation to enable the authorised conduct to continue.

3.0 Business and contact details of the Authorisation to be substituted (the new authorisation)

3.1 Royalty Managers which have engaged Seedvise since Authorisation A91406 are identified in paragraph 2.2 with an asterisk (*). Persons who propose to engage with Seedvise, the Royalty Managers identified in paragraph 2.2 and any future Royalty Managers that engage Seedvise as EPR Agent during the term of the substitute Authorisation.

3.2 Person: Denis McGrath
Position: Director
Telephone: 0408 688478
Email address: denis@seedvise.com.au

3.3 Description of business activities of parties to the authorisation.

A list of the participating Royalty Managers and their key business activities relevant to the current authorisation are provided below:

Australian Grain Technologies Pty Ltd (AGT) 20 Leitch Road Roseworthy SA 5371
ABN# 65 100 269 930

Business Description : Plant Breeder and Commercialiser of wheat, barley, canola and lupin varieties.

InterGrain 19 Ambitious Link, Bibra Lake WA 6163, ABN# 90 128 106 945

Business Description : Plant Breeder and Commercialiser of wheat, and barley varieties.

SeedNet 7 Golf Course Road, Horsham, VIC 3402. ABN# 73 008 743 217

Business Description : Commercialiser of wheat, barley, oat and pulse varieties.

Nuseed 5 Ballinger Street, Horsham Vic 3400, ABN# 82 088 231 814

Business Description : Plant Breeder and Commercialiser of wheat and canola varieties.

NPZ Australia Pty Ltd c/- Amberley Business Centre Level 3, IBM Building 1060 Hay Street West Perth WA 6005 ABN# 26 164 063 389

Business Description : Commercialiser of canola varieties.

COGGO Ltd 10A Danzil Street, Willagee WA 6156, ABN# 35 091 122 039

Business Description : Commercialiser of wheat varieties.

Grainsearch 5 Endeavour Way, Alfredton Victoria 3355, ABN# 83 004 227 927

Business Description : Commercialiser of wheat and barley varieties.

Advanta Seeds trading as Pacific Seeds 268 Anzac Avenue Toowoomba QLD 4350
ABN# 87 010 933 061

Business Description : Plant Breeder and Commercialiser of wheat varieties.

Heritage Seeds PO Box 6175 Halifax Street Adelaide SA 5000, ABN# 43 007 614 379

Business Description : Commercialiser of wheat, barley, oats and pulse varieties.

Elders Rural Services Australia Ltd Level 6, 160 Queens St, Melbourne 3000 ABN: 72 004 045 121

Business Description : Commercialiser of wheat and barley varieties.

Seed Force Pty Ltd 11 Future Court, Shepparton Vic 3632, ABN# 11 118 991 272

Business Description : Commercialiser of wheat and barley varieties.

Agronomy for Profit PO Box 2326 Geraldton WA 6531 ABN# 83 536 922 975

Business Description : Plant Breeder and Commercialiser of canola varieties.

Seed Exchange Australia Pty Ltd PO Box 3892, Robina Town Centre, Qld 4230

ABN# 31 609 480 819 Business Description : Commercialiser of a wheat variety.

4.0 Proposed Conduct Details

4.1 A description of the proposed conduct

The Parties through Seedwise are seeking authorisation to collectively negotiate on behalf of participating Royalty Managers with Grain Buyers over the terms and conditions on which End Point Royalties (EPRs) are collected by Grain Buyers and remitted to Royalty Managers. These terms and conditions include the

Collection Fee that Royalty Managers pay to Grain Buyers in exchange for the EPR collection service.

The Plant Breeders Rights Act 1994 (the PBR Act) allows plant varieties to be registered by Plant Breeders. Once a variety is registered the Plant Breeder becomes the PBR Owner. The rights associated with PBR ownership may be sold or otherwise transferred like other property rights, meaning the PBR Owner is not necessarily the Plant Breeder. The intellectual property protections associated with the PBR registration last for twenty years.

The PBR Act prohibits the selling or commercial propagation of a registered variety without the consent of the PBR Owner. Commonly, Grain Growers seeking to grow a registered variety are required to enter into an agreement under which they pay a royalty to the PBR Owner for each tonne of the variety harvested (i.e. an EPR). This variety is referred to as a Royalty-earning Variety. The royalty is “end point” because it is paid after cultivation and harvest. PBR Owners may set the per tonne royalty rate at whatever level they wish.

PBR Owners typically license Royalty Managers to oversee the collection of EPR’s owing to them.

Royalty-earning Varieties are the product of research and development programs that utilise techniques such as selective breeding and/or genetic modification. Historically, much of Australia’s grain breeding research was undertaken by the Grains Research and Development Corporation (GRDC)—a statutory corporation that reports to the Department of Agriculture—and other publicly funded bodies. However, most of these public plant breeding bodies have been—or are in process of being—privatised, and grain varieties are now largely developed by commercial Plant Breeders who earn revenue via their Royalty-earning Varieties. Privatisation has increased the degree of foreign investment in Australian plant breeding activities, though Seedwise submits that all Plant Breeders to which their application relates are Australian companies.

Plant breeding is almost always undertaken in the same country the variety is expected to be grown as tailoring the variety to local conditions is critical for its productivity. Seedwise submits that of the 234 varieties its Royalty Managers distributed in the 2018/19 season, only ten were bred internationally and they had very limited ‘geographical fit’ in Australia.

The first EPR varieties were released in 1996 and grain produced from EPR varieties now makes up the majority of Australia’s grain crops.

Grain growing has a number of characteristics that make an EPR system an efficient mechanism for distributing economic surplus between PBR Owners and Grain Growers. Specifically:

- Grain Growers often purchase a small amount of a new variety and plant it as a test/breeding crop. If the Grain Grower is happy with the test crop they will harvest it and use the yield to plant a commercial size crop the following season without needing to purchase additional propagation materials from

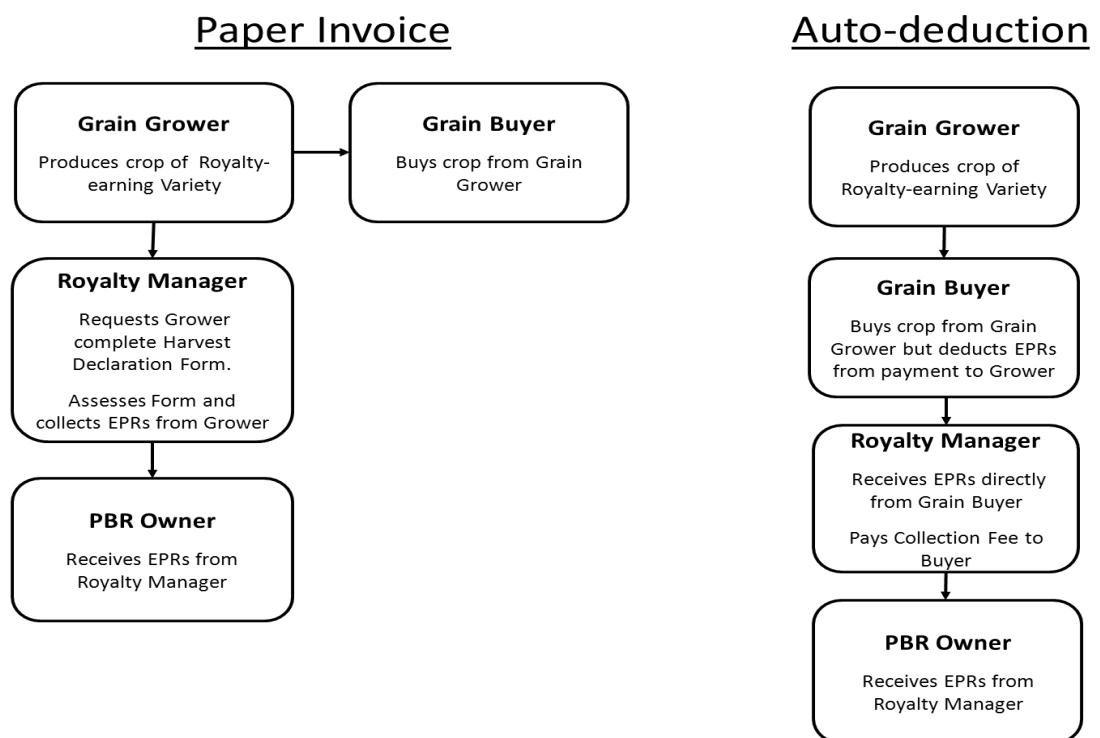
the PBR Owner. Under this practice, revenue from the upfront sale of propagation materials to Grain Growers is small and may not be adequate to recover the PBR Owner’s cost of research and development.

- An EPR system allows Grain Growers to share risk with PBR Owners. When considering whether to grow a new variety, Grain Growers face uncertainty over that variety’s productivity and therefore the Grain Grower’s earnings. Under the EPR system an unproductive variety will not generate a large volume of EPRs for the Grain Grower to pay.
- Compensating PBR Owners at the end of the harvest also reduces upfront costs for Grain Growers, and encourages the uptake of newer varieties and the continued research and breeding of more productive varieties.
- A per tonne royalty provides a feedback mechanism to PBR Owners and rewards PBR Owners that develop productive varieties. By waiting until the end of the harvest to calculate the EPRs accruing to each PBR Owner, the EPR system ensures that feedback is based on the productivity of the particular variety. Over time, these EPR revenues should lead to more productive varieties as talented Plant Breeders are rewarded while Breeders of unproductive varieties are not.

The EPR system is widely supported in the Australian grain industry, with all limbs of the supply chain acknowledging the benefits and efficiencies of the system.

There are two main collection methods for End Point Royalties (See Figure 2):

Figure 2: Paper Invoice versus Auto-deduction



- *Paper invoice to Growers*—At the end of the season, Royalty Managers seek out Grain Growers with crops of Royalty-earning Varieties and request that they fill out an EPR Harvest Declaration Form. The form requires the Grain Grower to declare the:
 - o Quantity of seed sown
 - o Quantity of harvest grain sold
 - o Quantity of harvest grain used on farm
 - o Quantity of harvest grain warehoused at the end of April each year
 - o Quantity of harvest grain retained for planting
 - o Quantity and name of the entity where the harvest grain was sold.

Where possible, Royalty Managers verify the information in the EPR Harvest Declaration (e.g. checking quantities sold with Grain Buyers) and then invoice the Grain Grower for the appropriate EPRs.

- *Auto-deduction by Buyers*—As the Grain Grower sells their harvested crop to Grain Buyers, the Grain Buyer identifies the variety and deducts the EPR from their payment to the Grain Grower. The Grain Buyer then remits these EPRs to the Royalty Manager. In exchange for this service, the Grain Buyer is paid a Collection Fee by the Royalty Manager. This Collection Fee was initially set by the Australian Wheat Board (AWB) in 1998 at \$0.12 per tonne, and Seedwise submits that it has remained at \$0.12 across the industry even though Royalty Managers and Grain Buyers have been free to negotiate different Collection Fees since 2008.

In the original ACCC authorisation submission Seedwise advised that the paper invoice collection method is significantly more costly for Royalty Managers, as well as being less accurate. This view is supported by the Australian Government’s Advisory Council on Intellectual Property (ACIP), who noted in the final report of its review into the enforcement of Plant Breeder’s Rights that submissions had identified the following concerns with the EPR system, particularly in regards to the paper invoice collection method:

- Quantifying the Grain Grower’s obligations to PBR owners
- High Transaction costs in identifying these obligations
- Frustration in dealing with the large amount of paperwork that is required to report the Grower’s obligations to PBR owners.
- Identifying and quantifying unreported use of protected varieties.

ACIP also noted the administrative burdens of the paper invoice system and the benefits of transitioning to a system in which EPRs are collected at ‘bottlenecks’ in the supply chain (e.g. the auto-deduction collection method):

Most concerns raised with ACIP over [PBR] rights were in relation to the grains industry, where there are tens of thousands of growers and a relatively small number of accumulators, traders and end users. It is not cost effective for [PBR Owners] to audit the payment of royalties by such a large number of growers. An EPR system based on the narrower points in the supply chain transfers the administrative burden from growers to other organisations and can be a more efficient system overall.

In general, it is difficult to estimate how effective current EPR collection methods are at recovering royalties as the quantity of Royalty-earning Varieties grown without having an EPR recouped is not known. However, Seedwise estimate that for wheat around 75-80% of EPRs are collected, for barley around 75-80%, and for a crop like chickpeas around 65-70%. Of these EPRs, Seedwise estimates that around 90% are collected via the auto-deduction system and 10% via paper invoice. Uncollected EPRs may be a result of inaccurate paper invoice reporting or Royalty Managers being unable to locate crops of their Royalty-earning Varieties.

4.2 Outline any changes to the conduct between the existing and the new authorisation

The conduct proposed is the same as was authorised by A91406 but is intended to extend to all current Royalty Managers and those that retain Seedwise during the term of the substitute authorisation.

4.3 The relevant provisions of the Competition and Consumer Act 2010

The conduct for which we are seeking authorisation is substantively the same as was authorised under A91406. The proposed conduct relates to section 45 of the Competition and Consumer Act 2010.

4.4 Rationale for the proposed conduct

Seedwise's application for authorisation relates to the terms and conditions, including the Collection Fee, of participation in the auto-deduction system. Seedwise proposes to negotiate (on behalf of Royalty Managers) with individual Grain Buyers a Collection Fee that will adequately incentivise the Grain Buyer to participate in the auto-deduction collection method and thereby reduce the need for paper invoicing and increase the overall effectiveness of the EPR system.

Participating Royalty Managers currently individually contract an EPR Agent (Seedwise) to negotiate with Grain Buyers to collect and remit EPR's using the auto-deduction scheme. A copy of the EPR Agent Agreement is provided in Attachment 1. Each Royalty Manager provides Seedwise with broad instructions and parameters with regards to the terms and conditions of the contract Seedwise may enter into with the Grain Buyer, including but not limited to, the

Collection Fee. This means each Grain Buyer has different agreements with each of the thirteen Royalty Managers (albeit, each of the thirteen agreements is negotiated with Seedvise on behalf of each Royalty Manager)

However, Grain Buyers are under no obligation to enter into agreements to collect EPR's on behalf of Royalty Managers and many, particularly smaller Grain Buyers, do not collect EPRs when purchasing grain from Growers.

As noted, the EPR Collection Fee for Grain Buyers who do elect to enter into EPR Collection Agreements is currently \$0.12 per tonne across the industry, which is the rate set by the AWB in 1998, despite Royalty Managers being free to determine their own Collection Fees.

Subsequent to the initial ACCC authorisation, Royalty Managers have agreed to pay Grain Buyers, willing to establish EPR Collection services, 30 cents per tonne for the first harvest year to better compensate them for the initial establishment costs of providing this service. The implementation of this strategy has resulted in a significant number of additional smaller grain buyers agreeing to support the Royalty Managers and collect their EPR's.

4.5 The term of authorisation sought and reasons for seeking this period

Seedvise proposes the ACCC extends the current authorisation for a further five years. The current Seedvise / EPR Collection Agent arrangement is strongly endorsed by PBR Owners and their Royalty Managers. A five year extension to the current authorisation will allow the PBR owners and their Royalty Managers to improve the EPR collection efficiency and compliance by attracting more smaller grain buyers to agree to collect EPR's.

5.0 Provide the names of persons, or classes of persons, who may be directly impacted by the proposed conduct and detail how or why they may be impacted.

A list of the grain buyers that are currently contracted to Seedvise to collect and remit EPR's to the relative Royalty Managers is provided in Attachment 2.

The EPR Collection fee only applies to the grain industries in which growers are growing grain varieties that attract EPRs. EPR varieties are currently used in the following grain crops – wheat, barley, triticale, oats, canola, chickpeas, lupins, field peas, lentils, faba beans and soybeans. The current conduct authorisation has increased the number of Grain Buyers auto- deducting EPR's. Expanding the number of Grain Buyers has reduced the EPR administrative requirements for Grain Growers and improved the viability and capability of plant breeders to continue their vital work.

While some Royalty Managers implement alternative EPR collection arrangements for individual varieties that are being commercialised via special supply chain

agreements, the vast majority of EPR's that apply to grain varieties are collected via the industry EPR Collection Agent (Seedwise) arrangements because of administrative simplicity and logistical reasons.

6.0 Market description

There are over 13,000 grain growing businesses in Australia, harvesting crops for domestic and export markets. All of the 2018/19 harvest 234 EPR varieties that are managed by the EPR Agent (Seedwise) are winter crop varieties (i.e., winter crop varieties are planted in autumn or winter for harvest in the spring/summer months). EPR varieties are currently used in the following grain crops – wheat, barley, triticale, oats, canola, chickpeas, lupins, field peas, lentils, faba beans and soybeans. Table 1 below provides details on the Australian Bureau of Agriculture Resource Economics estimated state winter crop production for each of the past five winter crop seasons.

Table 1. ABARE estimated state winter crop production for each of the past five winter crop seasons

Harvest	Unit	New South Wales	Victoria	Queensland	South Australia	Western Australia	Australia
2013-14	kt	9773	6773	1516	7221	16510	41878
2014-15	kt	10455	5117	1464	7439	14662	39197
2015-16	kt	11624	3568	2104	6105	14206	37687
2016-17	kt	15510	9513	3159	10661	17737	56678
2017-18 s	kt	7228	7682	1463	6945	14619	37963
5 year Average	kt	10918	6530.6	1941.2	7674.2	15546.8	42680.6
Source: Australian Crop Report September 2018							

Over the past five winter crops Australia has averaged a total production of 42.68 million tonnes with the New South Wales, Victoria, Queensland, South Australia and Western Australia representing 25.8%, 15.3%, 4.5%, 18% and 36.4% of the average total Australian production.

Grain growing in Australia occurs in two broad areas: a stretch of land comprising southern Queensland, inland NSW, western Victoria, and southern SA; and the south-western region of WA. These two growing areas sell to different markets, with the eastern states selling two-thirds of their harvest domestically for human consumption and livestock feed, while WA exports 80-90% of its harvest.

7.0 Describe the relevant industry

Australian farmers grow many varieties of grain. For each plant type, Grain Growers may be able to choose from numerous Royalty-earning Varieties as well as a range of varieties that do not have royalties associated with them (e.g. older varieties). Penetration of newer varieties is quite high; approximately 95% of harvested winter crops are Royalty-earning Varieties.

When a grain crop is harvested, Grain Growers sell the yield to Grain Buyers (this may occur after a period of storage while the Grain Grower waits for favourable terms). Grain Buyers then on-sell the grain either domestically or internationally.

The EPR Collection fee service only applies to the grain industries in which growers are growing grain varieties that attract EPRs. EPR varieties are currently used in the following grain crops – wheat, barley, triticale, oats, canola, chickpeas, lupins, field peas, lentils, faba beans and soybeans.

The large majority of EPR's that apply to grain varieties are collected, because of simplicity and logistical reasons, via the industry EPR Collection Agent (Seedvise) arrangements. Some Royalty Managers implement alternative EPR collection arrangements for some individual varieties that are being commercialised via special supply chain agreements.

Seedvise was founded in 2009 as an independent consulting company specialising in the grains industry, and also operates as an EPR Agent. EPR Agents are primarily responsible for contracting Grain Buyers to collect and remit EPRs on behalf of Royalty Managers associated with the EPR Agent. These agreements are referred to as EPR Collection Agreements.

Seedvise currently acts as the EPR Agent for thirteen Royalty Managers, who manage a total of 234 Royalty earning varieties. Seedvise seeks re authorisation on behalf of the current 13 and any future Royalty Manager contracted to Seedvise.

Seedvise also engages with other participants in the grain supply chain to promote the EPR System.

8.0 Contact details of relevant market participants

A list of the grain buyers that are currently contracted to Seedvise Pty to collect and remit EPR's to the relative Royalty Managers is provided in Attachment 2.

Table 2 below provides an estimate of the current market share each Royalty Manager holds of the total EPR market for the major EPR grain crop commodities – wheat, barley, canola, other cereals and pulses.

Table 2 Estimated Royalty Manager market share of major EPR Grain Commodities

	Estimated RM Market Share of major EPR Grain Commodities				
Royalty Manager (RM)	Wheat	Barley	Canola	Other Cereals	Pulses
Agronomy for Profit	0	0	3	0	0
AGT	55	0	0	25	15
COGGO	0.5	0	0	0	0
Elders	0.5	1	0	0	0
Grainsearch	1	5	0	0	0
Heritage Seeds	3	5	0	50	20
InterGrain Pty Ltd	17	44	0	0	0
NPZ Australia	0	0	3	0	0
NuSeed	2	0	94	0	0
Advanta Seeds	15	0	0	0	0
Seed Exchange Australia	0	0	0	0	0
Seedforce	1	5	0	0	0
SeedNet	5	40	0	25	65
TOTAL	100	100	100	100	100

The market share percentages in Table 2, when the market size and EPR variety market share of each commodity are taken into account, provide a guide the size and commodity focus of each Royalty Manager. The EPR Agent plays an important role for the grain industry and subsequently is happy to engage with all EPR Variety Royalty Managers.

9.0 Describe the competitive constraints on the parties to the proposed conduct

9.1 Existing or potential competitors

Seedwise Pty Ltd is an independent consultancy business. Royalty Managers currently contract Seedwise individually as their EPR Collection Agent.

Grain Trade Australia, the main grain industry representative body, has strongly recommended to Royalty Managers they communicate with Grain Buyers as a collective group. This recommendation comes from the belief that Grain Buyers will be more receptive to all communication relating to EPR Collection coming from one entity.

PBR owners and Royalty Managers that do not engage Seedwise as their EPR Agent are free to collect EPR's themselves.

9.2 Likelihood of entry by new competitors

All the major Royalty Managers currently contract Seedwise as their EPR Agent. Royalty Managers are free to act independently or appoint an alternative EPR Agent.

The EPR Agent arrangements have been operating for nearly ten years and all Royalty Managers support the current industry arrangements.

9.3 Any countervailing power of customers and / or suppliers

EPR Collection Agents (Grain Buyers), EPR Agent (Seedwise) and Royalty Managers are able to terminate their existing agreement at any time under the terms of the termination clause of the relevant agreements.

9.4 Any other relevant factors

10.0 Describe benefits to public

The Australian grain industries EPR system is important to support a profitable and competitive private plant breeding industry in Australia. The EPR system promotes the research and development of increasingly productive crop varieties, leading to better value for Grain Growers and end consumers.

The industry view that the EPR auto-deduction collection method, in which Grain Buyers deduct EPRs from their payments to Growers and remit the EPRs to Royalty Managers, represents a highly efficient method for locating Royalty-earning Varieties and collecting EPRs.

The paper invoice collection method imposes significant administrative costs on Royalty Managers and growers as they are required to keep track of the use of their Royalty earning Varieties across Australia's more-than-10,000 Grain Growers, and to individually invoice the relevant Growers.

The paper invoice collection method imposes administrative costs on Grain Growers in the form of Harvest Declaration Forms and the record keeping required to accurately complete the declaration.

Encouraging Grain Buyers (who are numbered in the hundreds rather than the tens of thousands) to participate in the collection of EPRs via the auto-deduction collection method has the potential to greatly simplify the administrative burden of monitoring the use of Royalty-earning Varieties and collecting associated EPRs.

Seedwise argues that there are two related impediments to auto-deduction being adopted for remaining Grain Buyers, particularly smaller ones:

- i. The transaction costs involved in:
 - o setting up systems to accommodate auto-deduction, and
 - o negotiating an EPR Collection Agreement with each Royalty Manager.
- ii. The level of Collection Fees offered by Royalty Managers individually not being sufficient to cover these costs.

The proposed conduct is likely to overcome these impediments by setting Collection Fees that adequately compensate Grain Buyers for participating in EPR auto-deduction, and to minimise the administrative cost of their participation.

The collective bargaining by Seedwise on behalf of Royalty Managers has the potential to increase Grain Buyer participation in auto-deduction by facilitating negotiations that result in Collection Fees that reflect the cost of participation for each Grain Buyer. While it remains open to individual Royalty Managers to negotiate fees with Grain Buyers that reflect these costs, the volume of a single Royalty Manager's Royalty-earning Varieties purchased by a Grain Buyer, particularly smaller Grain Buyers, will often not be sufficient to justify the cost of establishing auto-deduction facilities unless the Collection Fee is set at a very high level.

In addition, if an individual Royalty Manager was to offer a Collection Fee that would justify the upfront investment in auto-deduction facilities, other Royalty Managers would then be able to 'free ride' on the Royalty Manager that has funded the Grain Buyer's upfront investment. This 'first mover disadvantage' may reduce the willingness of individual Royalty Managers to pay Grain Buyers cost-reflective Collection Fees and therefore stifle investment in EPR auto-deduction facilities.

Similarly, individual Royalty Managers may be unwilling to offer a higher Collection Fee due to concerns that doing so will put them at a competitive disadvantage to other Royalty Managers (who may have negotiated lower Collection Fees). Allowing the Royalty Managers to collectively bargain would reduce information asymmetries that may have stopped them from offering a higher Collection Fee individually.

Tailoring each Collection Fee to the needs of the respective Grain Buyer should induce most Grain Buyers to install auto-deduction facilities at the lowest cost to Royalty Managers, where efficient to do so. The ACCC notes that Royalty Managers may not be willing to pay a Collection Fee high enough to induce the Grain Buyers with the highest cost of participation. However, the ACCC considers that this would still represent an efficient outcome as Royalty Managers should be willing to pay cost-reflective Collection Fees to all Grain Buyers whose participation in the auto-deduction collection method would reduce the Royalty Managers' costs to a greater degree than the higher Collection Fee increases them. Accordingly, if Royalty Managers are unwilling to induce some (very high cost) Grain Buyers to participate in auto-deduction, it is likely because doing so would represent a net cost increase for Royalty Managers.

The ACCC also accepts that the administrative cost of implementing an EPR auto-deduction collection method is increased if the Grain Buyer is required to negotiate terms and conditions separately with up to eleven Royalty Managers. The ACCC considers that a single negotiating process will reduce the administrative burden associated with EPR auto-deduction and make participation more attractive for Grain Buyers. Given that Royalty Managers may be unwilling to offer higher Collection Fees individually, and that some Grain Buyers are reluctant to incur the additional administrative costs associated with accounting for different Collection Fees from different Royalty Managers, the ACCC considers that individual negotiations between Royalty Managers and Grain Buyers are unlikely to induce the same level of further participation in EPR auto-deduction.

Collective negotiating will also lead to transaction costs savings for Grain Buyers who already participate in the auto-deduction scheme, and the Royalty Managers with which they negotiate, in their negotiations over EPR Collection Agreements.

The proposed arrangements have the potential to increase participation in the auto-deduction collection method, this will also reduce transaction costs for Grain Growers as the paper invoice method imposes an administrative burden on Grain Growers in the form of record keeping and invoicing in order to determine the EPRs that they owe. Whereas under the auto-deduction collection method no record keeping beyond that which is already necessary to facilitate the sale/purchase of the grain is required.

It is estimated that significant volumes of grain are currently harvested without any EPR being paid. Facilitating a more widespread adoption of the auto-deduction collection method will also reduce the incidence of avoidance of payment of EPRs.

The continuance of the collective bargaining conduct is likely to result in public benefits in the form of increased EPR collection via auto-deduction by Grain Buyers, which in turn improves the effectiveness of the EPR system and promotes the research and development of more productive crops for Grain Growers and Australian consumers.

The primary beneficiary of new and improved grain varieties are the Australian grain growers. The Australian grain growers need better varieties to remain competitive in an increasingly tough world market and to meet environmental challenges. The better the Australian grain growers perform financially the better the Australian rural economies will perform.

Attachment 3 is a fact sheet explaining productivity gains achieved by the wheat breeding program at Roseworthy in South Australia. This fact sheet highlights the importance of plant breeding to Australian grain grower's productivity.

A recent article (see Attachment 4) in the Grains Research Development Corporation (GRDC) Groundcover publication provides some insights into new plant breeding technologies that have been developed over the last decade. These new plant breeding technologies are an exciting development for plant breeders, growers and related grain industry participants as they have potential to speed up the discovery and release of new plant varieties capable of delivering significant productivity gains in key Australian grain markets. Commercial investment in applying these developments will be supported by the EPR value capture mechanism.

With the assistance of ACCC's authorisation of the Seedwise Pty Ltd's application, Royalty Managers have been able to increase the number of grain buyers automatically collecting their EPR's. Compliance in the Australian grain industries EPR Collection model has subsequently strengthened thereby providing the plant breeding companies the confidence to continue to expand their plant breeding investments.

11.0 Public detriment including any competition effects

As detailed in the original ACCC application the EPR Agent does not believe there is any public detriment or competition effects associated with this application.

The current level of competition between members of the bargaining group in their dealings with the target are low, such that the difference between the level of competition with or without collective bargaining may also be low.

The current EPR Agent agreement does not restrict the ability of parties to compete in other ways, for example on quality or service. There is voluntary participation in the arrangements. There are restrictions on the coverage, composition and representation of the bargaining group. There is no collective boycott involved.

Grain Buyers are under no obligation to collect EPRs on behalf of Royalty Managers and, in the event that they choose to do so, will be able to elect whether to negotiate with Seedvise's collection bargaining group or with individual Royalty Managers. Further, no collective boycott activity is proposed.

The main goal of the current ACCC authority arrangements is to induce increased participation in the auto-deduction collection method, which would not be achieved by imposing costly or otherwise onerous terms and conditions upon participating Grain Buyers. Participation in EPR collection of any form is voluntary for Grain Buyers, and Grain Buyers are not required to negotiate with Seedvise's collective bargaining group nor with Royalty Managers individually. Therefore, Grain Buyers will only choose to negotiate with Seedvise if it is in their interest to do so.

Seedvise submits that, if anything, the proposed arrangements will result in higher Collections Fees as, acting collectively, Royalty Managers will be able to agree on Collection Fees that provide an incentive for Grain Buyers to participate in the auto-deduction scheme.

12.0 Contact details of relevant market participants

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13.0 Additional Information

Attachment 1. EPR Agent Agreement

Attachment 2. List of Grain Buyers supporting automatic collection of EPR's from the 2018/19 Harvest.

Attachment 3. Australian Grain Technologies Fact Sheet February 2016

Attachment 4. GRDC **GroundCover™ Issue:130** September-October 2017

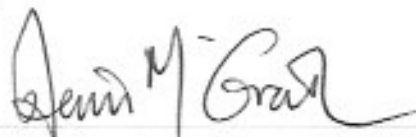
Declaration by Applicant(s)

Authorised persons of the applicant(s) must complete the following declaration. Where there are multiple applicants, a separate declaration should be completed by each applicant.

The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.

The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.

The undersigned are aware that giving false or misleading information is a serious offence and are aware of the provisions of sections 137.1 and 149.1 of the *Criminal Code (Cth)*.



Signature of authorised person

DIRECTOR

Office held

DENIS M GRATH

(Print) Name of authorised person

18/3/2019

This [insert day] day of [insert month] [insert year]

Note: If the Applicant is a corporation, state the position occupied in the corporation by the person signing. If signed by a solicitor on behalf of the Applicant, this fact must be stated.

Attachment 2. List of grain buyers supporting automatic deduction of EPR's 2018/19 Harvest

Company
ADM Australia
AG Schilling
AgFarm
Agriex
Agrifood Aust (B&L Grain)
AgriGrain
Agrioz
AGT Foods
Allied Pinnacle
Associated Grain
Australain Storage Alliance
Australian Grain Exports
Australian Growers Direct
Blue Lake Milling
BFB Commodities
Bunge
Cargill / AWB
CBH Grain
CHS Broadbent
CIL Australian North (ex Nidera)
CLEAR
COFCO Agri
Coorow Seeds
Croker
Centre State Exports
Emerald
Esperance Quality Grains
Demeter and Cormack
Direct Commodities
Export Trading Group Aust.
Fletchers
FXG Group
Glencore
Graincorp
Hanlon Enterprises
Itochu
Jerilderee Grain Handling & Storage
JK Milling
Louis Dreyfus
Manildra Grain Trust
Market Check (AgRisk)
McNaughts Grain and Fertiliser
Mellco
MSM Milling
Mt Tyson / Qld Cotton
Nolan Grain
PASE
PB Seeds
PeaCo
Pentarch
Phoenix Commodities
Pinnacle Agrservices
Plumgrove
Premium Grain Handlers
Quadra
Quaker Oats
Riordan Grain
Riverina Oilseeds
Robinson Grain
Ruddenklau Grain
Rural Logic
Soft Commodity Trading (Allied Mills)
TAP AgriCo
Unique Grain
Ward McKenzie
Waterfield
Welwyn Rupanyup
Wilkins Grain
Wilmar Gavilon
Wimpak
Woods Grain
XLD Grain
Yenda Producers
Yorke Commodities

100 years of wheat Breeding at Roseworthy



Key messages

- Data from this trial shows that since 1955 there has been 1.4t/ha improvement in wheat yields, or approximately 1% per year. Prior to 1955, there was no improvement in grain yield
- The largest improvements have been driven by increased funding and the inclusion of semi dwarf varieties
- Since the release of Excalibur (the highest yielding non-PBR variety), grain yield gain per year has averaged 1.3%

How was the experiment done?

Forty eight wheat varieties bred at Roseworthy between 1906 (Fan) and 2012 (Shield) were grown at six locations over two years (Clearfield® tolerant varieties were excluded). The locations were: Rudall (2013), Pinnaroo (2013), Roseworthy (2013 and 2014), Angas Valley (2014) and Minnipa (2014).

All varieties in each trial were managed (sowing rate, fertiliser and in-crop treatments) according to current practices for each specific region. Grain yield, protein, test weight, thousand grain weight and screenings were measured and analysed both within individual sites and across sites.

Why do the trial?

Wheat breeding has been a key component of the Australian wheat industry for more than 130 years, and Roseworthy, as the longest continual breeding program, has been providing new wheat varieties to farmers for much of that time.

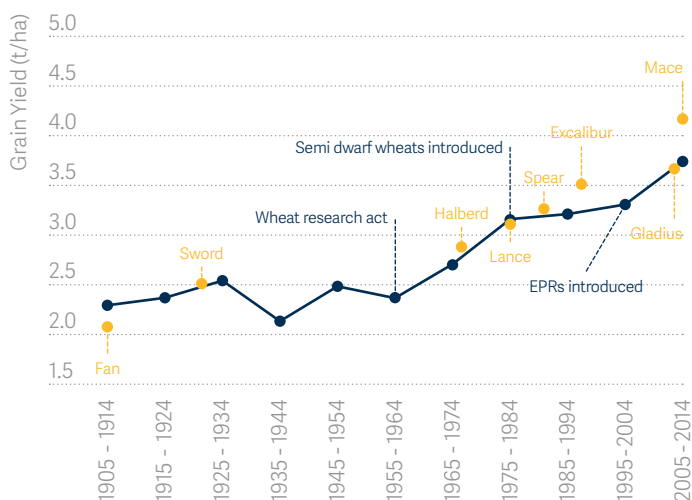
This study was initiated to quantify the historic value of wheat breeding to Australian growers and provide a benchmark for future improvements. This work can also be used to examine what changes have also occurred to other agronomic traits and consequently inform future agronomic research.

What happened?

Grain yield

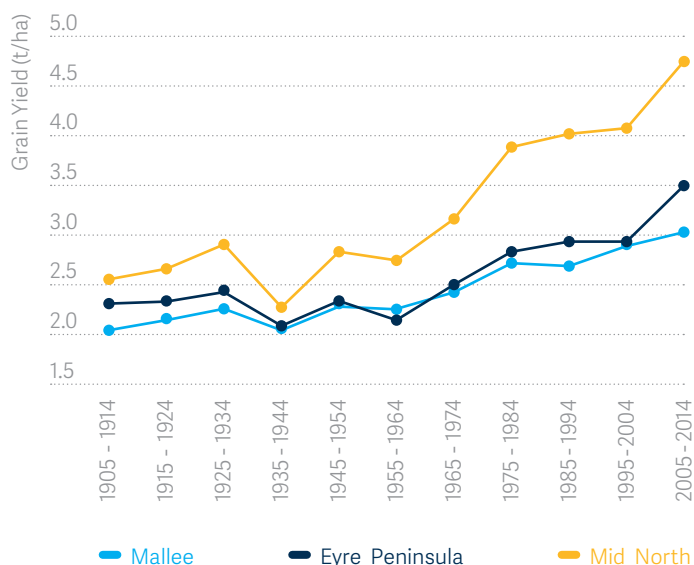
The results from all sites indicated that wheat breeding at Roseworthy has resulted in a 103% yield increase from Fan to Mace, or, 1% per year which amounted to 2.1t/ha (Figure 1). In the early years there was very little yield improvement with a yield increase of only 0.31t/ha or 0.3% per year from Fan to Claymore (1956). The rate of improvement has since risen to 1.47% per year or 1.8t/ha from Claymore to Mace. Three events appear to have had a major influence on grain yield improvement during this time. Firstly, the Federal Government introduced the 'Wheat Research Act' in 1957 which diverted proceeds from the wheat tax into wheat breeding. This enabled wheat breeders to increase the size of the program, improve mechanisation and expand testing into additional environments. The results of this trial indicate a yield increase of 0.64% per year or 0.82t/ha from Fan to Halberd, the first variety with a major yield increase after the "Wheat Research Act".

Figure 1 / Yield of varieties averaged over ten year periods from the beginning of formal wheat breeding at Roseworthy. Important varieties shown.



Secondly, exotic semi-dwarf varieties were introduced into the breeding program in the late 1960s. The first semi-dwarf variety released from the Roseworthy program was Lance in 1975, which corresponded to a yield increase of 0.24t/ha or 0.91% per year from Halberd to Lance. The third event that has had a significant impact on wheat breeding was the introduction of End Point Royalties (EPRs) which enabled wheat breeding to become a commercial enterprise. This has led to an expansion in the size of the breeding programme and increased adoption of new technologies like DNA selection, advanced statistics, precision agriculture and robotics. Excalibur was the highest yielding variety developed at Roseworthy before the advent of EPRs. There was a 0.39t/ha grain yield increase from Lance to Excalibur or 0.9% per year, while the improvement from Excalibur to Mace has been 0.65t/ha or 1.3% per year.

Figure 2 / Yield of varieties at three regions, averaged over ten year periods from the beginning of formal wheat breeding at Roseworthy.



What happened?

Protein

As grain yield has increased, the protein dilution effect has led to a small decrease in protein concentration (Figure 3).

Although protein percent has dropped a little, when the protein yield per hectare is calculated, a marked increase corresponding to the large increases in grain yield is evident over the history of wheat breeding at Roseworthy (Figure 4).

This demonstrates the 'protein dilution effect' where nitrogen availability has not met increased demand due to increased grain yield and therefore the protein percent of the grain is lower (diluted).

Although protein percent has reduced from 11.9% to 11.1%, which is approximately 6.2%, grain yield (when averaged in 10 year periods) has increased by 64% and the actual amount of protein harvested has increased 56%, from 268kg/ha to 420kg/ha, due to the increased yield, as shown in Figure 4.

Figure 3 / Protein content (percent) and grain yield of wheat varieties averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy.

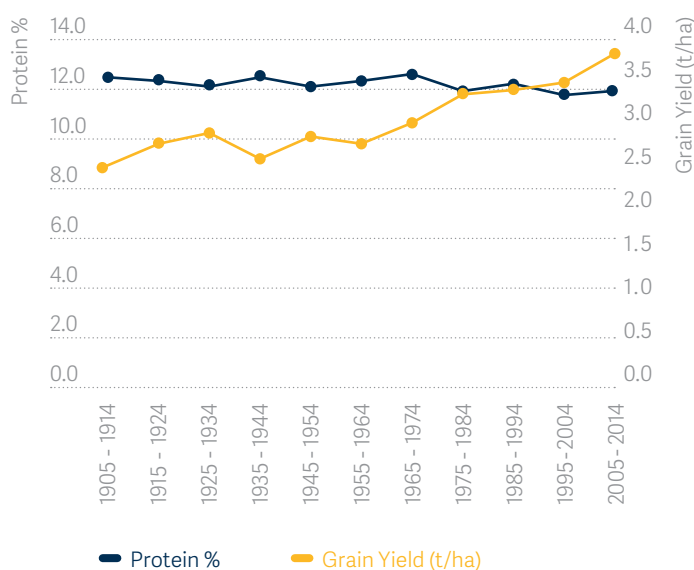
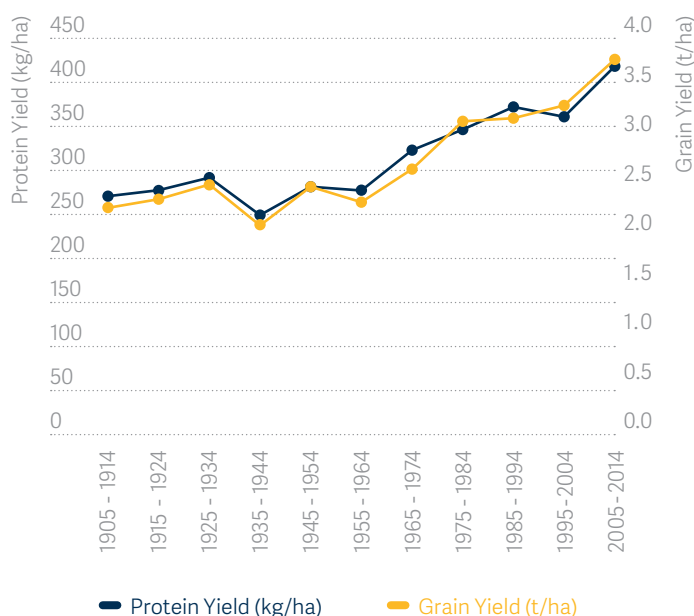


Figure 4 / Grain and protein yield of wheat varieties averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy.



Agronomic traits

Overall, tiller number per plant (data not shown), and grain number per square metre have increased and appear to be the primary drivers of the grain yield increase (Figure 5). This increase in grain number has led to a slight reduction in grain size.

Thousand grain weight has reduced, while the percentage of screenings has increased (Figure 6). It is interesting to note that due to high selection pressure over the last 15 years, grain size has increased (Figure 6), as has test weight (Figure 7), after some previous reductions.

There has been a 2.3% increase in test weight, 8.4% increase in thousand grain weight, and a 19.3% decrease in screenings in this period. The days from sowing to heading has decreased approximately six days since the beginning of formal wheat breeding at Roseworthy.

Lodging and plant height have both reduced over time (Figure 8). This figure shows that the largest improvement in lodging was made with the reduction in plant height associated with the introduction of the semi dwarf wheats.

Figure 5 / Number of grains per square metre of wheat varieties compared to yield, averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy.

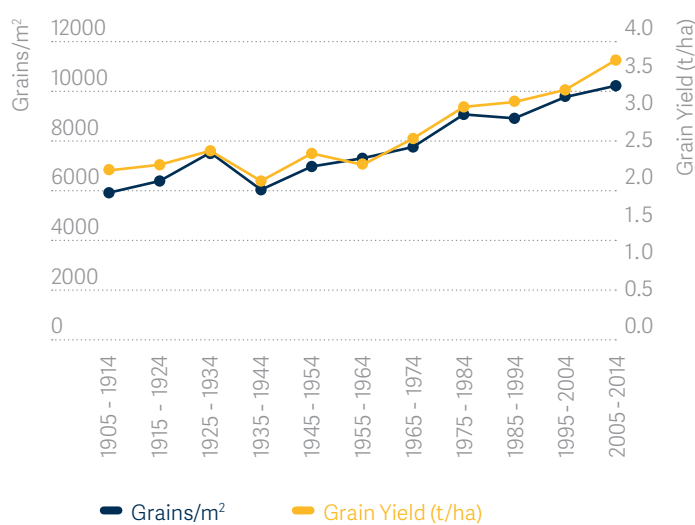
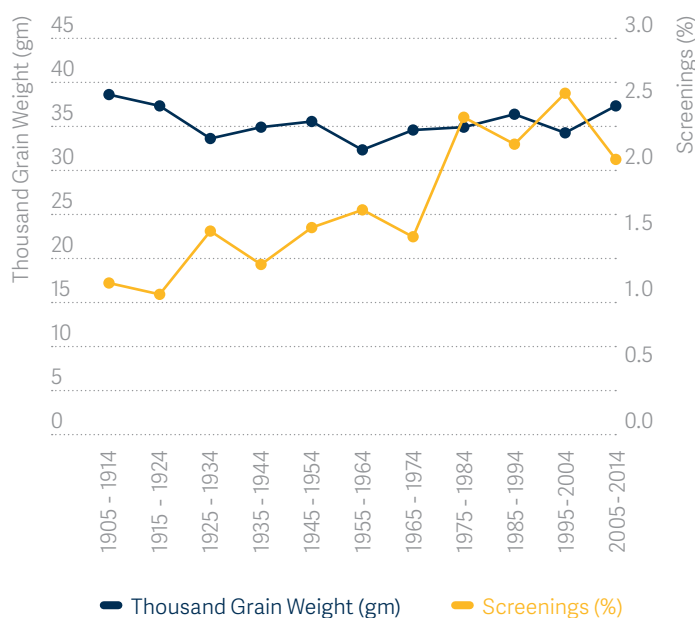


Figure 6 / Thousand grain weight and screenings percent of wheat varieties averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy.



What does this mean?

Figure 7 / Test weight of wheat varieties averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy.

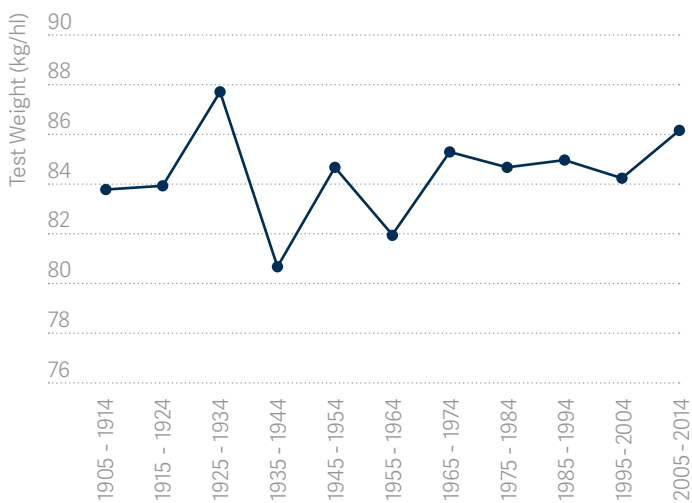
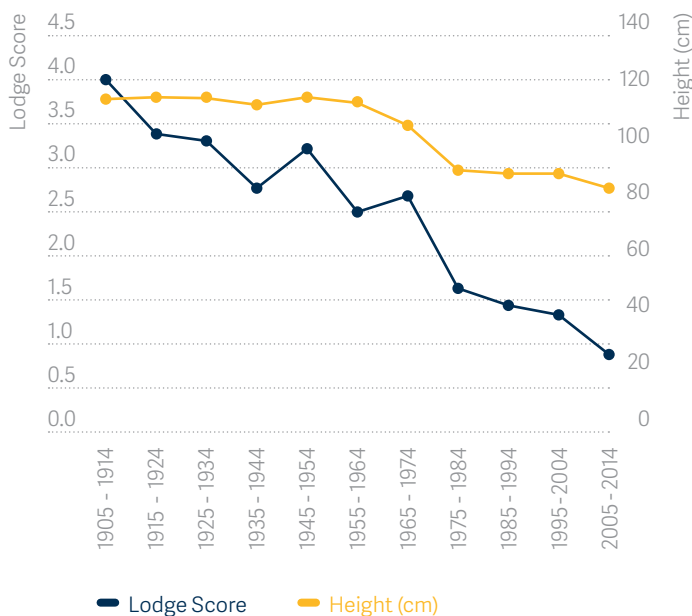


Figure 8 / Lodging score and height of wheat varieties averaged in ten year periods from the beginning of formal wheat breeding at Roseworthy. Lodging score: 0=no lodging, 9=fully lodged.



It is clear that the Roseworthy wheat breeding program has developed improved varieties with significant increases in grain yield achievement. There have been some small, negative aspects associated with the increased grain yield; protein percent has been reduced marginally and there has also been a small decrease in grain size. However, the lower protein percent has been due to the 'protein dilution effect' of higher yields, while the actual protein yield has increased along with the grain yield. Investigations into management options to address the lower protein concentrations are continuing. The smaller grain associated with grain yield increases has started to be reversed through high selection pressure by wheat breeders.

In this article, we have focussed on grain yield, protein and grain size, without reference to improvements in other important traits such as rust resistance, baking quality or Intervix® tolerance. These are other benefits resulting from the breeding program that have a high impact on grower profitability. With the successes so far and building on the increased knowledge resulting from these successes, the future of wheat breeding at Roseworthy, and other AGT breeding programmes, is bright.

Acknowledgements

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The GRDC invests across a broad range of new and proven existing technologies. six of the most innovative were selected as topics for discussion at the Perth Research Update

Molecular Markers



Professor Chengdao Li is researching how molecular techniques can improve barley breeding

PHOTO: Evan Collis

Professor Chengdao Li of Murdoch University, researches how molecular techniques can improve barley breeding and have contributed to the breeding of barley varieties Baudin, Vlamingh, Hamelin, Roe, Hannan, Lockyer and Litmus. He presented on molecular markers, which he defines as simple biochemical identifiers of genes located on the different chromosomes.

“Molecular markers are non-GM, and they provide an inexpensive and reliable way for breeders to identify and then select a breeding line containing a desired gene,” Professor Li told the Research Update.

“Multiple markers allow the identification of breeding lines that contain many desirable genes, including those related to improved disease resistance or grain quality, characteristics considered expensive to assess in glasshouse or field testing.”

Genomic Selection



Dr Dini Ganesalingam says integrating inexpensive molecular markers with new statistical methods is allowing the selection of many more genes.

PHOTO: Evan Collis

The reducing cost of molecular markers is becoming key in the developing area of genomic selection.

Lupin breeder Dr Dini Ganesalingam, of Australian Grain Technologies, discussed how integrating inexpensive molecular markers with new statistical methods is allowing selection of many genes across the genome in breeding populations. Based on success in animal and US maize breeding, genomic selection involves the selection of complex traits representing many small genetic effects throughout the genome. Key to the development of the breeding models is access to inexpensive genome-wide molecular markers together with robust phenotyping and rigorous statistical analysis.

“The breeding models predict the potential of an untested breeding line, thereby reducing the cost and time between breeding cycles,” Dr Ganesalingam said. “Furthermore, this technology can process larger populations, making it possible to select breeding lines containing many more favourable genes before moving to the expensive stages of field testing.”

Complementing this technology are improvements to statistical modelling used to assess breeding lines across multiple locations and years: “The power in these models has significantly increased

breeders' confidence in selecting for both broadly adapted and regionally adapted lines for commercial release," Dr Ganesalingam said.

"These models also guide the statistical analysis and variety rankings delivered from the GRDC's National Variety Trials system."

Transgenic GM Breeding



PHOTO: 123RF.com

Dr Geronimo Watson is the chief technology officer of Bioceres, an Argentinian biotechnology company focused on crop productivity and feedstock applications. He told the Research Update that the benefit of GM-based breeding is that novel, but important, genes can be readily transferred across different plant and animal species.

"The disadvantage of GM is the high cost of regulation and strict control of new GM events, particularly when targeting commercial release in a new variety," Dr Watson said. "The opportunity, then, is to identify genes other than herbicide and pest resistance that can boost wheat performance."

He gave the example of a sunflower gene, HAHB4, which encodes a protein that 'switches on' other genes to improve sunflower performance under drought.

"Preliminary research in Argentina indicated that the HAHB4 gene increases water productivity in 'droughted' wheat experiments and has no detrimental effects when conditions are favourable," Dr Watson said.

Gene Editing



PHOTO: 123RF.com

Dr Yong Han, of the Western Barley Genetics Alliance at Murdoch University, spoke about how the CRISPR-Cas9 gene editing technology represents a new era for agricultural biotechnology by offering an easy and precise way to alter genes to create desirable traits. In the US, traits developed with gene editing have already been incorporated into commercially released canola varieties and these varieties were not subject to the regulations applied to GM varieties.

“In Australia, there is still uncertainty in regulation of this technology as to whether it will be treated as GM or conventional technology,” Dr Han said.

Biodiversity And FIGS

Dr Ken Street, of the University of Western Australia, has demonstrated that a systemic approach to searching for special crop traits in seed collections can be highly effective. The strategy involves a formal process of layered information mapping called FIGS (Focused Identification of Germplasm Strategy). A recent application of this technique has been the collection of overseas wheat germplasm that may represent a source of reduced frost sensitivity, which is currently being evaluated in the National Frost Initiative.

“There is a relationship between the selection pressures that have been imposed at the site where seed is collected and the genetic make-up of those plants,” Dr Street explained. “By identifying the

characteristics of the target growing environment and matching them to soils, climate and other factors associated with the environment at the collection site, genetic material of high potential value can be identified.”

High-Throughput Phenotyping

CSIRO’s Dr Greg Rebetzke explained that phenotyping represents the visual characterisation of plant attributes important in selection. He said that traditional phenotyping has resulted in today’s modern varieties, but is slow and expensive. Molecular markers are quick, reliable and inexpensive, but their use can be limited by the genetic complexity of many economically important traits.

In contrast, high-throughput phenotyping (HTP) uses modern technologies to capture data such as digital and reflectance light information on individual plants, pots and larger field plots. The acquired data makes it possible to select for optimal ground cover, biomass, canopy temperature traits, and potentially yield characteristics important under drought, disease or potentially any environmental constraint to yield.

“The phenotype summarises how the genetic make-up of a breeding line is expressed in response to the environment. Importantly, all data is collected non-destructively, resulting in reduced labour and time,” Dr Rebetzke said. “Owing to the automation of this data collection, costs are commonly low and large populations can be phenotyped at all stages of a breeding program from early generations to advanced yield trials. The information from HTP can be used to select indirectly for characteristics related to yield early in the breeding process and used later in combination with field-based header yields to develop indices aimed at increasing breeder confidence in selection between advanced breeding lines. These data are also readily integrated into genomic selection to help build and improve the selection models.”