EVALUATING AUSTRALIAN BULLS ON INDEXES OF OTHER COUNTRIES AND INTERNATIONAL BULLS ON AUSTRALIAN INDEXES

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SUMMARY
This paper briefly describes a new facility, developed within 'BreedObject on the web', where Australian seedstock (eg. bulls, semen) are able to be ranked on overseas and Australian indexes as well as overseas seedstock ranked on Australian indexes. The development was at the request of Australian and overseas breeds, who agreed to share the availability of their indexes. Through the ability of 'BreedObject on the web' to calculate indexes on-line, and through its on-line access to breed databases, results for the indexes of different countries are able to be reproduced, on demand, for any selection of animals from the databases. The facility has the potential to assist the export of superior Australian seedstock, and to expand the gene pool for Australian breeders by increasing the effectiveness with which animals with desirable genetic merit are identified in overseas populations.

INTRODUCTION
There is growing export potential for Australian beef genetics, due at least in part to the increasing rates of genetic gain that are occurring, particularly in certain breeds. Barwick and Henzell (2005) showed rates of genetic gain in Australia to be increasing for individual EBVs and individual breed indexes, and generally across 23 indexes of the major breeds. Industry has made use of importation as one means to genetic improvement, especially since the advent of AI. A scan of Australian genetic evaluation results for imported sires across a number of breeds shows that while there have been notable importation successes, there have also been many failures.

This paper describes a recently developed facility that can assist identification of both seedstock with potential for export and overseas sires from which the local industry might benefit. Some background and current status of database searches and BreedObject web facilities is also given, as these each are involved in the new development.

BACKGROUND AND CURRENT STATUS OF WEB-BASED FACILITIES
ABRI web database search facility. The ABRI web database search facility, widely used in breeds in Australia (Scholz 2001), is now also available for many other breeds and countries that use BREEDPLAN. This search facility is commonly accessed from individual breed web sites. It can also be accessed, for all countries, from the BREEDPLAN home page (breedplan.une.edu.au). Through integration of 'BreedObject on the web' with this database search system, any selection of animals identified through a search can be seamlessly transferred to BreedObject to use the facilities of that site. The transfer occurs through a 'Link to BreedObject with these animals'.

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'BreedObject on the web'. The BreedObject software system (Barwick *et al.* 1992) was designed for customised development of breeding objectives and indexes. The ability to customise and calculate these on-line for individual users is a feature of 'BreedObject on the web' (Barwick *et al.* 2001). This capability is also behind breed level indexes, which are developed jointly with breeds and are customised for each breed's major production systems. The BreedObject web site has over 600 registered users, of which approximately 25% make use of customising. Sale and semen catalogues listed on individual breed web sites automatically display and are accessible from the BreedObject home page (breedobject.com). Published sires of each breed and users' own animals are also accessible. EBVs are accessed on-line from breed databases as required. The linkage to breed databases and the ability to calculate indexes on-line are each fundamental to the new facility, which reproduces results for indexes of different countries, on demand, for any selection of animals from the databases.

Growth in the availability of breed level indexes. The availability of BreedObject-derived breed level indexes has recently grown. The 39 indexes now available encompass 13 breeds across 4 countries (Australia, New Zealand, United Kingdom, Argentina) and involve 20 breed-country combinations. All are accessible through 'BreedObject on the web'. Thirteen breed-countries have already agreed to share the availability of their indexes with other participants of the same breed.

ACCESSING THE NEW FACILITY

Access to 'BreedObject on the web' can occur via individual breed sites of particular countries or directly through breedobject.com. Candidate animals of interest can be identified via a database search and transferred to 'BreedObject on the web', or they can be identified from the BreedObject home page. Results are displayed immediately, including any requested indexes. The user has control over which indexes display, from the indexes available in any breed. Control is via the 'Choose $Index' screen, where supporting details on each index are also available. Any requested user-customised and home-country breed standard indexes are the first indexes displayed (eg. 'Alawa Indexes', 'The Angus Society of Australia' Indexes, Figure 1). These are followed by any requested indexes of other countries, which are displayed alphabetically by country.

RANKING AUSTRALIAN BULLS ON OVERSEAS INDEXES

Figure 1 shows an example where there is interest in how Australian bulls rank on New Zealand and United Kingdom indexes. In practice the interest may be from a New Zealand or United Kingdom breeder or semen supplier looking to import; or it may be from an Australian breeder or semen supplier looking to sell overseas. Bulls have been ranked on the New Zealand 'Self-replacing' index in this example.

RANKING OVERSEAS BULLS ON AUSTRALIAN INDEXES

Figure 2 shows an example where there is interest in how some New Zealand bulls rank on Australian indexes. The interest may be from a New Zealand breeder or semen company looking to export. Or it could be from an Australian breeder or semen supplier looking to import. Bulls have been ranked on the Australian 'Supermarket' index in this example.

BreedObject - Angus Sales - Mozilla Firefox
File Edit View Go Bookmarks Tools Help

http://breedobject.com/sale/results.html?sort=Index_I250&R5=0 Go

Home >> Angus Sales >> **Results**

BreedObject
sales catalogue

View Published Sires   Choose $Index   Choose EBV Range
View Own Herd   Derive Your Own $Index   Download Data

1 **2** **3** **4** **5** **6** **Next>>** (197 animals) Hide EBVs Find ID or Name   Find

Lot	Details, Pedigree, Accuracies click on the animal name	ID	Sex	Alawa Indexes Western	The Angus Society of Australia Japan B3	The Angus Society of Australia Super market	Other Countries New Zealand Ease Of Calving	Other Countries New Zealand Self Replacing	United Kingdom Angus Terminal	Calving Ease Calv. Ease Direct	Calving Ease Calv. Ease Dtrs	Birth Gest. Len	Birth Birth Wt
1	LAWSONS HIGH GRADE Z440 (AI) (	VLYZ440	M	+86	+104	+69	+75	+79	+47	+3.6	###	-6.5	+3.
16	BON VIEW NEW DESIGN 1407	USA1407	M	+89	+115	+69	+88	+77	+38	+5.2	+3.9	-3.5	+1.
5, 2	TE MANIA YORKSHIRE Y437 (AI)	VTMY437	M	+92	+112	+70	+66	+76	+42	+2.7	+2.3	-5.8	+2.
15	G A R YIELD GRADE	USA13724351	M	+84	+97	+72	+77	+76	+44	+3.7	+0.8	-7.4	+3.
23	S A V FRONT RUNNER 0713	USA0713	M	+87	+95	+73	+52	+73	+47	+0.4	###	-6.1	+5.
135	MYTTY IN FOCUS	USA13880818	M	+79	+92	+66	+64	+72	+41	+2.7	###	-4.4	+1.
11	TE MANIA AFRICA A217 (AI)	VTMA217	M	+85	+106	+64	+56	+68	+39	+2.2	+1.3	-5.5	+3.
5	BUSHS STRUT 756	USA756	M	+79	+87	+69	+33	+68	+45	-1.4	###	-2.9	+6.
6	TE MANIA ZAMBIA Z69 (AI) (ET)	VTMZ69	M	+84	+101	+65	+54	+68	+38	+1.9	+2.5	-1.2	+3.
30	B/R NEW DESIGN 323-9150	USA323-9150	M	+71	+88	+59	+79	+67	+36	+4.8	+1.4	+0.5	+0.
7, 1	BONGONGO BULLETPROOF Z3 (AI) (	NGXZ3	M	+91	+120	+66	+58	+67	+35	+2.5	+2.3	-4.1	+3.
7	LAWSONS GAR FAIR DINKUM Z197 (	VLYZ197	M	+79	+102	+62	+58	+65	+38	+2.3	+1.9	-2.9	+3.
13	S A V FINAL ANSWER 0035	USA0035	M	+71	+81	+62	+74	+65	+36	+4.0	+0.9	-7.1	+0.

Done

Figure 1.   Results for Angus bulls available in Australia, showing New Zealand Angus and United Kingdom Aberdeen-Angus indexes calculated in addition to selected Australian Angus and custom indexes ('Alawa Indexes').

DISCUSSION

The facility depends on BREEDPLAN EBVs being available in the differing breeds and countries as well as on arrangements between countries for sharing access to their indexes of the same breed. Animals are able to be compared only on a within breed-country basis for any index. This is firstly because the indexes of each country address different breeding objectives. With a few exceptions (breeds that have a single BREEDPLAN analysis for Australian and New Zealand animals), it is also because the BREEDPLAN EBVs of each country are derived from separate analyses.

The new facility has the potential to facilitate trade in seedstock. A greater amount of trade in Australian seedstock is likely to be important to the long-term viability of the Australian seedstock sector.

Figure 2. Results for New Zealand Angus bulls, showing Australian Angus indexes calculated in addition to New Zealand Angus indexes.

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