‘BREEDOBJECT ON THE WEB’: A CATALYST FOR WIDER ADOPTION OF SELECTION INDEXES IN THE BEEF INDUSTRY


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SUMMARY
This paper briefly outlines current features, planned features and rates of usage of ‘BreedObject on the web’ (http://www.breedobject.com), and discusses some impacts the web-site is considered to have had on acceptance of formal breeding objectives and indexes in the Australian beef industry. The primary features of the web-site are its capacity to make BreedObject (Barwick and Henzell 1998) indexes available to rank bulls for profitability for different commercial production purposes, and its provision of a listing facility for sale bulls and semen. Available only since early 2000, the site currently attracts visits at a rate of 840 per month (28 per day). BreedObject indexes available on the web-site are now routinely calculated in five breeds for all BREEDPLAN-recorded animals. These are important developments which are expected to lead to increases in the rate of industry gain in profitability.

Keywords: Beef cattle, breeding, selection, genetic gain, world-wide web.

INTRODUCTION
Adoption of selection indexes has generally been slow in most livestock industries of the world, yet use of appropriate indexes in breeding remains critically important for increasing rates of industry gain in profitability (Goddard 2001). Ponzoni et al. (1998) discuss some issues in the adoption of selection indexes. A reason often advanced for slow uptake of indexing has been that breeders have not had ‘ownership’ of the indexes developed. The need for breeders to have a feel for the development process in deriving an index, and to identify with an index as being ‘theirs’, was a strong motivation behind the development of the customisable beef cattle breeding objective and selection indexing system ‘BreedObject’ (Barwick et al. 1992; Barwick and Henzell 1998)

A version of ‘BreedObject’ is now available on the web (http://www.breedobject.com). Motivations for this development were the need to increase access to BreedObject technology, previously only available on PC, and a visualised need for potential buyers of bulls to be able to access EBVs and indexes on sale bulls. This paper briefly outlines current features, planned features and rates of usage of the ‘BreedObject on the web’ site, and discusses some impacts the web-site is considered to have had on acceptance of formal breeding objectives and indexes in the Australian beef industry.

CURRENT FEATURES
Consistent with the motivations for its development, the primary features of the web-site are its capacity to make BreedObject indexes available to rank bulls for profitability for different

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commercial production purposes, and its provision of a listing facility for sale bulls and semen. In summary, current features include:

- a facility for breeders to list sale bulls, or other sale seedstock that have BREEDPLAN EBVs. These can be listings for individual vendor stud sales, paddock sales, or multi-vendor sales
- a facility for those with semen rights to list semen bulls, again providing the bulls have BREEDPLAN EBVs
- a capacity for users (buyers of bulls or semen) to compare sale animals on index merit across sale catalogues
- ready access to contact details, including immediate email capability, for users to follow up any sale animal
- an independent capacity for listers to update their own listings at any time
- a capacity for users (breeders, buyers or sellers) to choose one or more indexes from indexes available addressing different kinds of commercial beef production in a range of breeds, and to rank animals on any index or EBV. Indexes currently available on the site are shown in Table 1.
- courtesy of the breed societies, ready access to updates of EBVs on listed animals
- a capacity to impose additional cut-offs on any EBV, and to see the consequences, for rankings, of excluding animals outside cut-offs
- a facility to complete an on-line multiple-choice questionnaire for the purpose of establishing a more customised selection index for the user’s own production purpose
- access to pedigree details on any animal included in catalogues
- a capacity to access and rank published sires of different breeds according to any available Index or BREEDPLAN EBV. EBV availability again being courtesy of the breed societies.

Figure 1. ‘BreedObject on the web’ homepage (http://www.breedobject.com).
Table 1. Selection indexes for breeding objectives currently available on the ‘BreedObject on the web’ site. Variations exist for different breeds, breeding roles (self-replacing, terminal) and environments. Indexes marked with an asterisk are now routinely calculated for all recorded animals of a breed and incorporated into breed databases.

<table>
<thead>
<tr>
<th>Breeding objective and selection index</th>
<th>Variations available</th>
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<tbody>
<tr>
<td><strong>Supermarket</strong></td>
<td>A*, MG*</td>
</tr>
<tr>
<td><strong>Supermarket, Terminal Supermarket</strong></td>
<td>H*, PH*, Sh</td>
</tr>
<tr>
<td><strong>Supermarket, Terminal Supermarket</strong></td>
<td>L*</td>
</tr>
<tr>
<td>Domestic</td>
<td>B</td>
</tr>
<tr>
<td>Domestic</td>
<td>B</td>
</tr>
<tr>
<td>‘Hereford Prime’</td>
<td>H*, PH*</td>
</tr>
<tr>
<td>‘CAAB’ (Certif. Aust. Angus Beef)</td>
<td>A*</td>
</tr>
<tr>
<td>European (EU)</td>
<td>B</td>
</tr>
<tr>
<td>Export, Terminal Export</td>
<td>C</td>
</tr>
<tr>
<td>Export, Terminal Export</td>
<td>L*, Si</td>
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<tr>
<td>Jap Ox</td>
<td>B</td>
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<tr>
<td>Jap Ox</td>
<td>B</td>
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<tr>
<td>Grain-fed Jap Ox</td>
<td>B</td>
</tr>
<tr>
<td>Terminal ‘North’</td>
<td>A*</td>
</tr>
<tr>
<td>Export</td>
<td>H*, PH*</td>
</tr>
<tr>
<td>Japanese ‘B3’</td>
<td>A*, MG*, Sh</td>
</tr>
<tr>
<td>Grain-fed Export</td>
<td>H*, PH*</td>
</tr>
</tbody>
</table>

1Breeding objectives developed following consultation with Breed Societies
2Breed abbreviations: A- Angus, B- Brahman, C- Charolais, H- Hereford, L- Limousin, MG- Murray Grey, PH- Poll Hereford, Sh- Shorthorn, Si- Simmental
3Provision is also made for a distinction between temperate and tropical environments

PLANNED FEATURES
The principal area to be further developed is that involving the customisability of procedures and services offered from the site. The capacity for a user to establish his/her own index, for his/her own breeding objective, will shortly move from a process that requires response from a central controller of the system to one where this is achieved ‘live’ by the user, or user advisor. Further techniques are also being developed that will allow users to utilise differing amounts of customisation. At the user’s discretion, this will be able to vary from minor modification of an existing breeding objective/index through to the establishment of a completely new breeding objective/index.

It is also planned that operation of the site, and some of its services, will become more closely integrated with services that have begun to be offered by breed societies. Currently, each sale catalogue listed on ‘BreedObject on the web’ involves a permission to access data from breed society databases. This is to be streamlined by having the system interact more directly with society
databases. This will mean listings for the web-site, and associated issues of data security, can if necessary be the responsibility of breed societies. A major advantage is also that all data listings will be able to automatically updated as often as changes occur to BREEDPLAN EBVs.

It is expected that some aspects of site use, in the future, will attract a commercial charge. It is envisaged that the site will be a central point for accessing all necessary information on selection index development and use. The site may be a suitable point from which breeders will also be able to access other relevant technologies (eg. ‘TGRM’; Vagg et al. 1999) for use in breeding decisions.

LEVEL OF USAGE
The ‘BreedObject on the web’ site is currently active in nine breeds. Around 40 sale or semen catalogues have been listed since the site was first made available in early 2000. These listings have attracted 2000 or more visits, with up to 150 visits per catalogue. Over recent months the site has attracted visits at a rate of 840 per month (28 per day), representing more than 8000 ‘hits’ per month. The visits are from an average of 460 different users. Users are mostly Australian, with some also from New Zealand and strong interest from the USA, Canada, Europe and South America.

DISCUSSION
In addition to the levels of direct usage mentioned, development of ‘BreedObject on the web’ is thought to have acted as a catalyst for other significant developments. In the short period the site has been available or under development, there has been rapid acceleration in the development and adoption of indexes at breed level in Australia, and of breed societies making available EBVs and indexes on sale bulls and other seedstock. To support this acceleration, other BreedObject software was made available for use in central bureau services offered through BREEDPLAN. BreedObject indexes available on the web-site are now also routinely calculated for all BREEDPLAN-recorded animals in five breeds (Table 1). Index use by industry leaders is increasing. These are important developments which are expected to lead to increased rates of industry gain in profitability.

ACKNOWLEDGMENTS
Web site programming is by Hutchinson Software, Armidale. Financial support was provided by the Commonwealth Department of Communications, Information Technology and the Arts, through the Information Technology On-Line (ITOL) Program. We also thank NSW Agriculture and Meat and Livestock Australia for financial support of BreedObject R & D, and Breed Societies and the Agricultural Business Research Institute for co-operation and other in-kind support.

REFERENCES