Managing Trait Distributions and the $Index

The $Index is the best way to maximise genetic gain on the total breeding goal. By managing trait distributions you can achieve your $Index goals and avoid matings that may result in less than desirable trait levels.

How $Index works:

$Index balances the selection emphasis on traits to most accurately reflect the breeding goal. The breeding goal is the overall description of the traits and their relative importance towards maximising profitability of a production enterprise. Keeping the relative balance of the traits consistent from year to year is important for achieving the breeding goal as fast as possible. Getting the relative weightings on the traits right is important for ensuring the $Index (we use the term $Index but your index may have a different name) accurately reflects the breeding goal and will result in the desired trait changes in the breeding population. Chasing individual traits and ignoring $Index can seriously affect genetic improvement towards your overall breeding goal.

Some traits are not in the $Index. Some traits are difficult to include in the $Index because it is hard to estimate their relative importance. This doesn't mean they aren't economically important, only that their importance cannot be stated easily in economic terms. The $Index is developed using the economic values of traits, so these traits that are difficult to include in the economic analysis are sometimes left out of the $Index.

Some traits have important cut-off levels or optimum values. Usually the $Index causes changes in traits in a "linear" fashion, so each year we expect the same amount of change in each trait to have the same value. Sometimes a trait has a "non-linear" economic value, so that individuals that have trait levels that lie outside a certain range are undesirable or even unsaleable. These traits may not be included in the $Index or the resultant change may not reflect the change you and your customers require.

TGRM® can help to manage trait outcomes without compromising genetic gain on the $Index

The primary goal in TGRM® is maximisation of $Index while minimising coancestry. The frontier lets you easily see that you are getting optimal results. Each trait constraint that is applied and affects the $Index and coancestry can be modified so that results remain closer to the frontier and therefore more optimal.
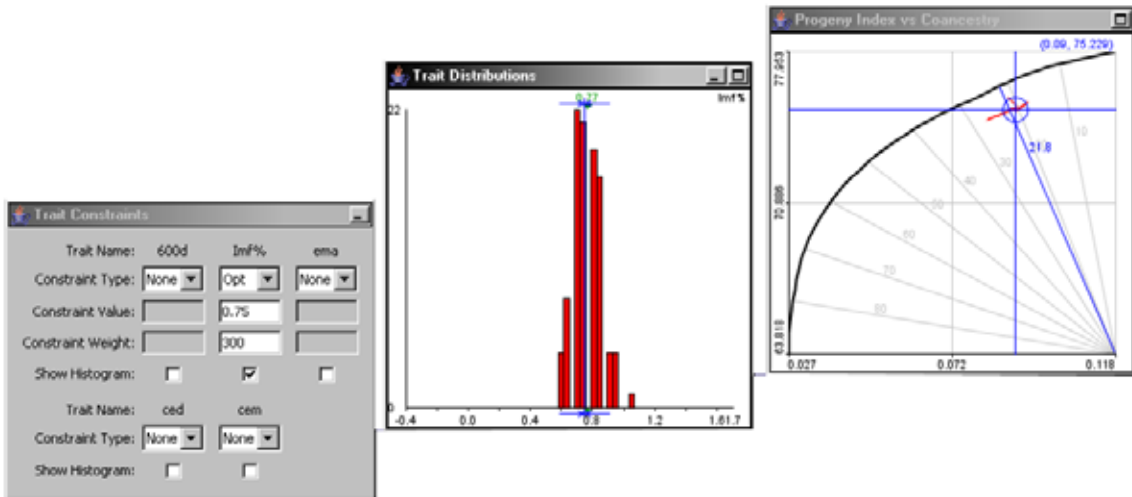
Place trait constraints to avoid undesirable trait levels by setting minimum or maximum trait levels. Or set an optimum level for a trait. Each constraint can be applied from very gently to very aggressively and the effects on $Index easily observed. When traits are correlated with the $Index, an aggressive constraint may result in loss of $Index and then the constraint can be eased until the right balance is found. When traits are uncorrelated with $Index, most constraints can be met without affecting $Index gain.
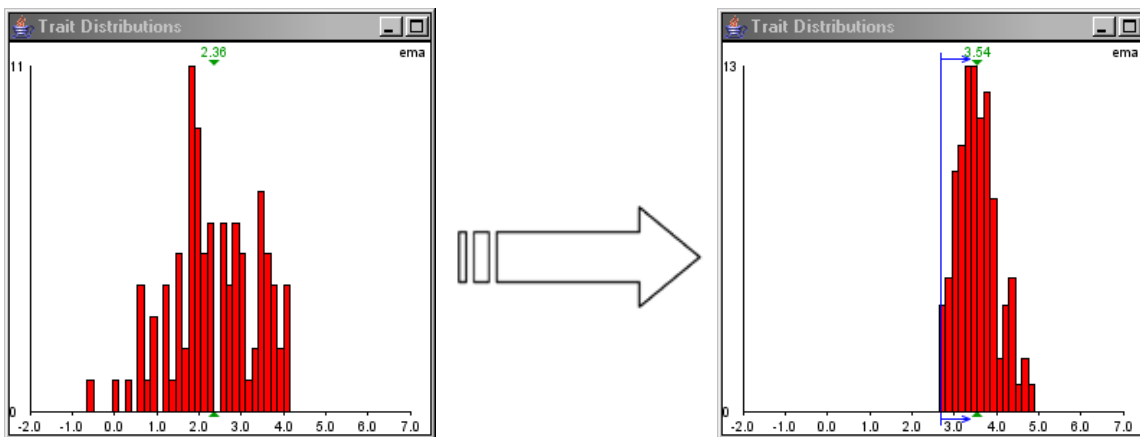
With TGRM® you are more likely to be able to produce progeny that fit your marketing or customer requirements because you can maximise $Index and avoid trait levels that your customers are not paying good dollars for. Have more progeny "hit the mark" and maximise current $ returns as well as future genetic gain.