CRV, leading
in health and efficiency

HERDOPTIMIZER
manual

CRV
BETTER COWS > BETTER LIFE

HerdOptimizer Tab pages

HerdOptimizer consists of five tab pages and a contact page.

 **Dashboard**

This is the first page you will see when you log in. This page has been designed to display a summary of the application at a glance. It provides instant access to the most important herd data.

 **Selection**

This page supports you in selection and mating. The SireMatch result is displayed here. This tab displays an overall picture of your herd.

 **Evaluation**

This page allows you to zoom into the current genetic preposition of the herd.
The breeding values and genetic conditions are displayed here for groups of animals and you can compare the potential of the herd with the performance of your herd.

 **Breeding goal**

This page displays the breeding goal for your herd. If you are not a SireMatch participant, you can also set the breeding goal on this page.

 **Settings**

Use settings to set HerdOptimizer according to your personal preference and herd strategy.

Service

The service page shows your HerdOptimizer adviser. You can also ask questions or send comments to the Customer Service team.

Dashboard

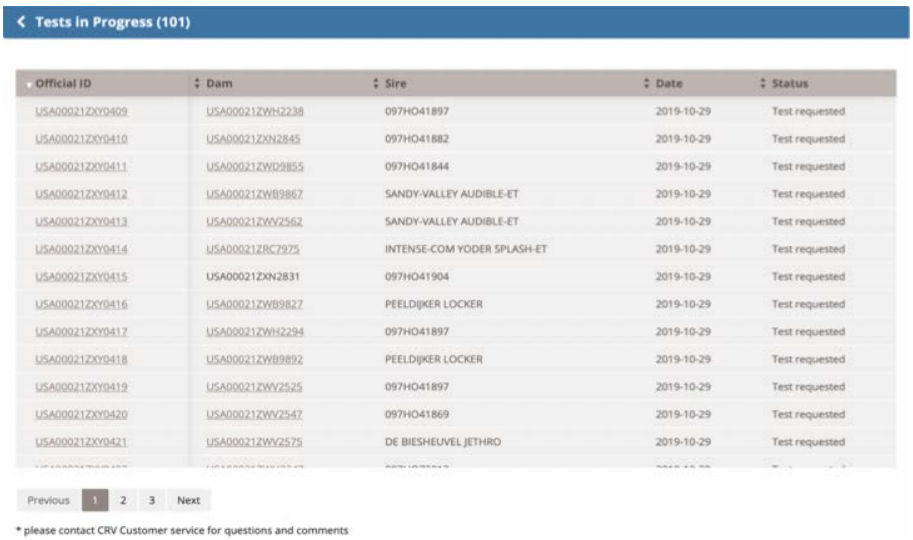
Test results and details

This section of the Dashboard immediately displays any new test results that have been received. Click ‘Test results’ to display the test results.

‘Test in progress’, displays the Track & Trace of the tests. Are there still outstanding results due for requested genomic marker tests? This screen indicates where these tests are in the logistics process. Use ‘Test in progress’ to display the progress of the tests. For example, the sample material may be in transit, the sample may be examined in the lab, or the test result may already be in the estimated breeding value. It takes about three weeks from the moment the sample arrives at CRV until the test result is announced via HerdOptimizer.

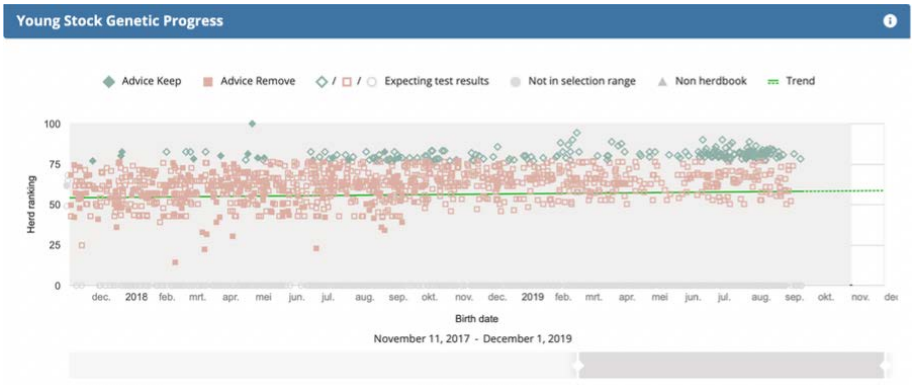
The red dot on the Dashboard icon indicates how many test results have arrived this week. Test results arrive every Monday. Has no expected test result arrived? Something may possibly have gone wrong with the sample. The test, including explanation of what went wrong, is listed under: ‘Tests with a problem’. For example, it may not have been possible to extract enough DNA from a sample. There could also be something wrong with the registered pedigree of the animal.

Prior to the calculation of genomic breeding values, the animal’s gender and pedigree are checked. The DNA may indicate that the registered sire or dam is incorrect. In the Netherlands and Flanders, a correct and complete pedigree is needed to estimate a breeding value. If necessary, the pedigree will be corrected. If correction is possible, CRV will make the correction. However, this can delay the logistics process. Is no correction possible? This message will be displayed under ‘Tests with a problem’. In this case, no test result can be provided. This is the case, for example, with an animal that is not a Holstein, or whose pedigree cannot be confirmed or found.



Genetic progress young stock

A graph is displayed at the centre of Dashboard that supports the selection process. This graph displays each animal born in the past year in relation to its position in the herd, based on its breeding value within the breeding goal. The green trend line shows genetic progress for the breeding goal of the entire herd. Colours indicate which animals are recommended for culling and which animals should be kept in the herd. An 'open' symbol indicates animals with unknown marker data (because no test has been requested yet, or because the test is still in progress). Click a symbol to access the animal page of this specific animal. The grey highlighted section corresponds to the age of the animals in the table under tab Selection > 'support selection'.



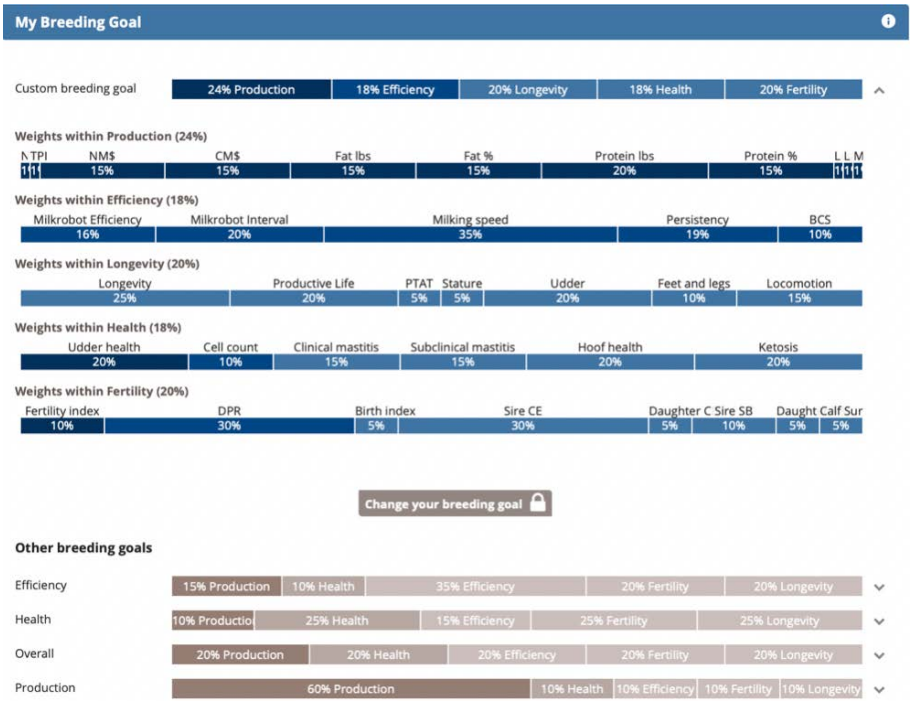
Herd overview

This section displays the herd overview, categorised into animal groups. Click a group to access the Evaluation screen. The breeding values of this group of animals are displayed under 'Breeding values herd'. Create your own animal groups on the settings page.

Breeding goal

My breeding goal

It is important to set the breeding goal correctly because this will affect the further operation of the program. 'My breeding goal' indicates which breeding goal is set. Use the 'Edit breeding goal' button. A new screen will open, where if wished, a selection can be made from CRV's standard breeding goals. Would you rather determine a breeding goal yourself? Do this via own breeding goal, at the bottom of the list. Create your own breeding goal by moving the bars between the traits. The drop-down (∨) menu allows you to determine the weighting of the breeding goal on a deeper level. When you return to the breeding goal screen via < (the arrow), HerdOptimizer will save and take over the set breeding goal.



What does herdoptimizer do with the set breeding goal?

HerdOptimizer uses the set breeding goal as an index trait. An index breeding value is calculated for each animal in the herd as soon as a breeding goal has been determined. This value is then used to determine the ranking of the animals within the herd. This is called the 'ranking no.'. Is the animal's ranking no. 11? This indicates that the animal is ranked in the eleventh place in the herd, according to your breeding goal.

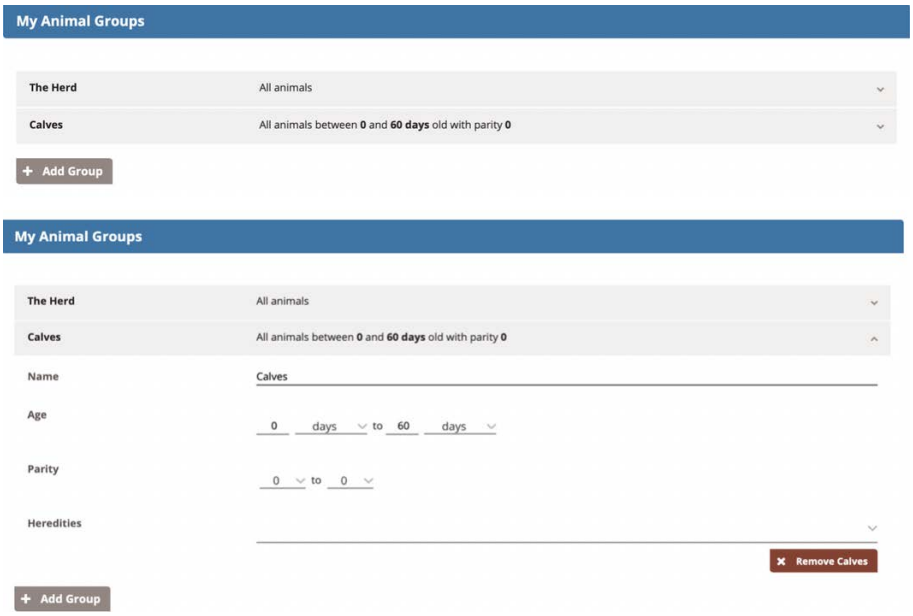
An animal's ranking may change. New animals are born that join the herd and they will probably score higher for the breeding goal. In addition, a young animal is given its first ranking based on its estimated breeding values (EBV). Once the animal has been genotyped, its EBV will be modified to the genomic breeding values and its ranking no. may change. A ranking no. of a genotyped young animal is therefore more reliable than a ranking no. of a young animal that has not yet been genotyped.

Settings

Use settings to set HerdOptimizer according to your personal preference and herd strategy. The farm data will be displayed first. You can also set animal groups and other preferences.

My animal groups

The animal groups displayed on the Dashboard can be set on this page. By default, they are categorised by parity. You can categorise the groups yourself based on parity or age.



Your preferences

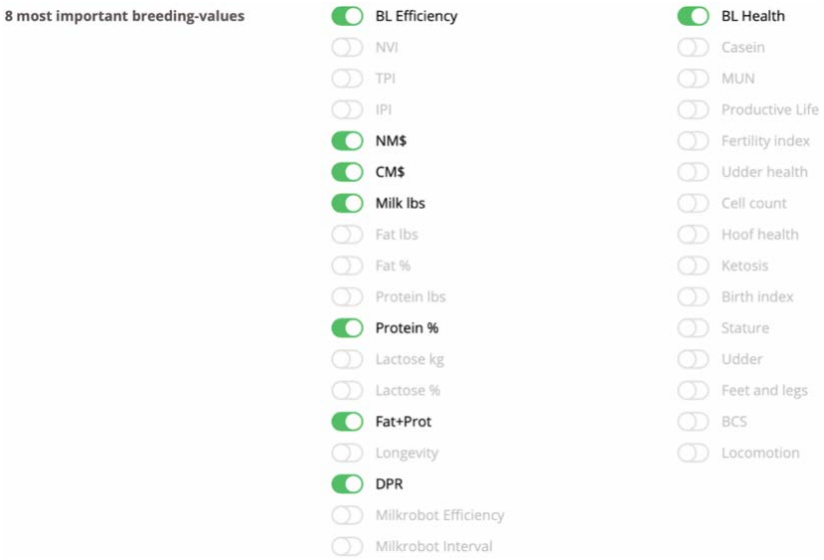
Set your herd preferences here.

Number of required calves, advice period

Based on what you enter at the number of required calves and the advice period, HerdOptimizer will offer the best possible support for the selection of young stock. If the number of required calves is not entered, all calves will receive a culling advice. Entering a number in this field is recommended.
In the selection screen, a sequence list of animals to be selected can be requested. Have you indicated a list of all animals from 0 to 2 months old? HerdOptimizer will automatically calculate the number of calves to be kept from this list. HerdOptimizer advises you to keep the animals that best suit the breeding goal. You can edit the advice relating to an individual animal in favour of your own choice at all times.

Eight main breeding values

CRV has many traits for which breeding values are calculated. The traits that are important vary from farmer to farmer. The settings screen allows you to select which breeding values are most interesting for your purposes. These breeding values are then displayed first by HerdOptimizer in the overviews. A maximum of eight traits can be selected.



Alerts for breeding values

A lower or upper limit can be set for breeding values. If the result of an animal meets this requirement (the genomic breeding value in question is higher or lower than the set value), an alert will be displayed with the result. The set trait will appear yellow in the case of animals with a result that meets this requirement.

Alerts hereditary traits/defects

Alerts can be set for hereditary traits or defects, such as A2A2 or polled. If the result of an animal meets this requirement, HerdOptimizer will display an alert with the result. The set trait will appear yellow in the case of animals with a result that meets this requirement.

Selection

The purpose of the selection screen is to support in selection and mating. This first section of the selection screen supports in the selection process. Details of the genomic marker tests are also displayed.

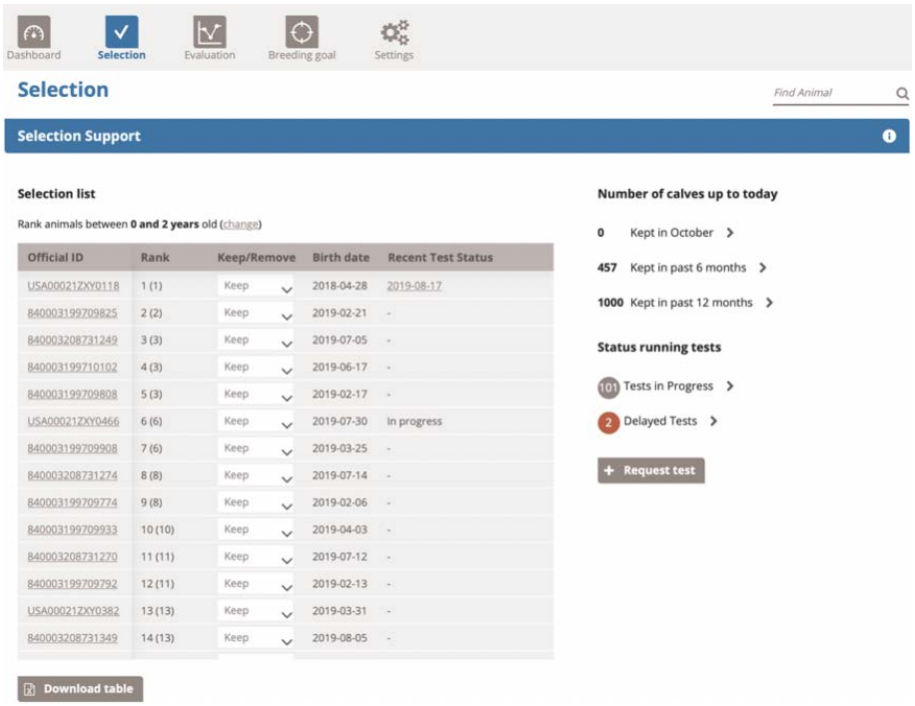
Support selection

This section of the selection screen supports the selection of animals.

Select which animals you want to see in order using the input fields and drop-down windows. For example, when selecting calves, these may be animals aged 2-4 weeks. With a selection of heifers this may be animals aged 10-13 months. HerdOptimizer displays a list of female animals, categorised according to age in the herd, based on the set breeding goal. HerdOptimizer will then examine the Settings. For example, the setting is 50 calves required per year. The user selects the animals between 0 and 2 months in this screen. Based on this, HerdOptimizer will calculate that out of this group (50:12) x 2 equals eight calves that should be kept. HerdOptimizer will generate a ‘keep’ advice for the eight highest scoring animals.

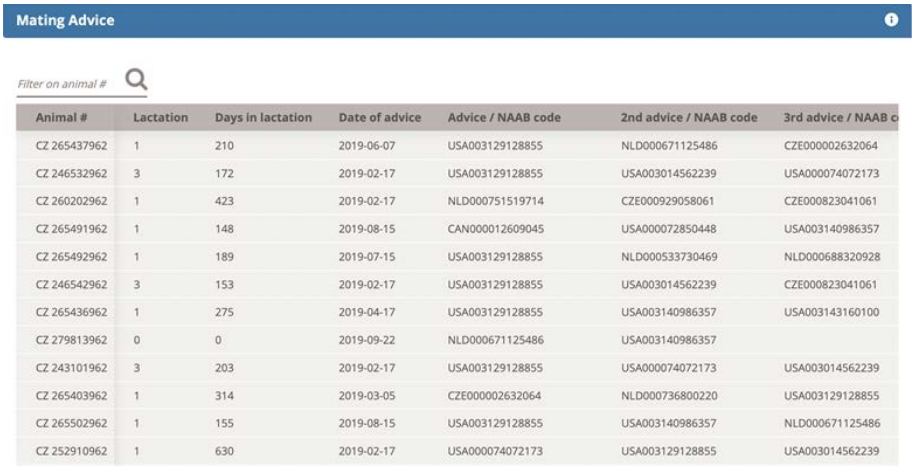
The status (keep/cull) of an individual animal can always be changed. Attention: this will not alter the animal’s ranking on the displayed list. It is still the first, tenth, twentieth etc. best ranked animal in the list, based on the breeding value for the breeding goal. The final required list of animals can be used as a reminder when making the actual selection.

You can also see that the list contains animals with a genomic marker test that is still in progress. Since the position of this animal is currently based on the expected values, the order of animals may change when the genomic breeding values of this animal are known. The more animals in the list that are still being tested, the more likely the order of animals will change.


Dashboard
Selection
Evaluation
Breeding goal
Settings
Selection
Find Animal
Selection Support
Selection list
Rank animals between 0 and 2 years old (change)
Official ID
Rank
Keep/Remove
Birth date
Recent Test Status
USA00021ZXY0118 1 (1) Keep 2018-04-28 2019-08-17
840003199709825 2 (2) Keep 2019-02-21 -
840003208731249 3 (3) Keep 2019-07-05 -
840003199710102 4 (3) Keep 2019-06-17 -
840003199709808 5 (3) Keep 2019-02-17 -
USA00021ZXY0466 6 (6) Keep 2019-07-30 In progress
840003199709908 7 (6) Keep 2019-03-25 -
840003208731274 8 (8) Keep 2019-07-14 -
840003199709774 9 (8) Keep 2019-02-06 -
840003199709933 10 (10) Keep 2019-04-03 -
840003208731270 11 (11) Keep 2019-07-12 -
840003199709792 12 (11) Keep 2019-02-13 -
USA00021ZXY0382 13 (13) Keep 2019-03-31 -
840003208731349 14 (13) Keep 2019-08-05 -
Download table
Number of calves up to today
0 Kept in October
457 Kept in past 6 months
1000 Kept in past 12 months
Status running tests
101 Tests in Progress
2 Delayed Tests
Request test

Sirematch advice list

The SireMatch advice list is displayed at the bottom of the selection screen. HerdOptimizer cannot set SireMatch. This should always be done using SireMatch. HerdOptimizer only display the SireMatch result according to how it has been set.



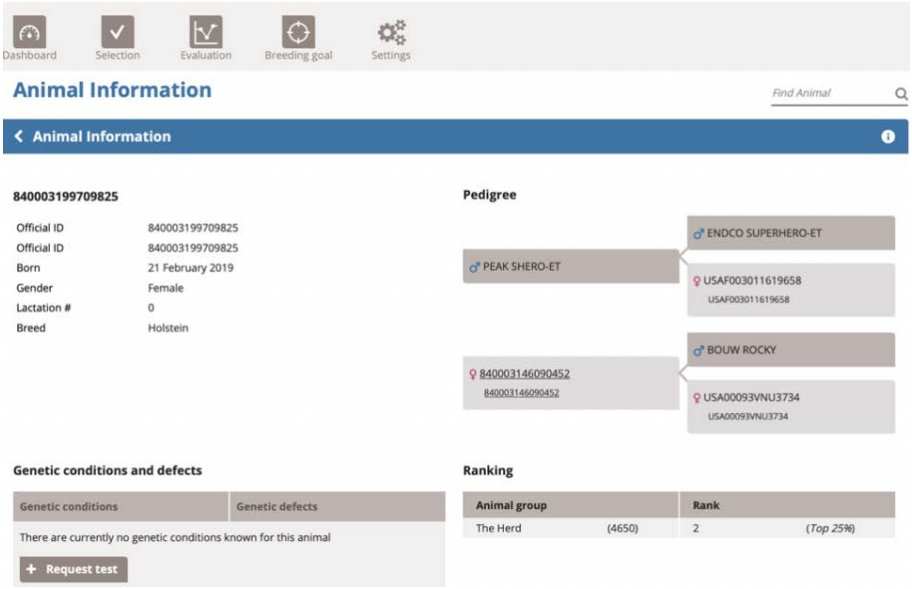
Animal #	Lactation	Days in lactation	Date of advice	Advice / NAAB code	2nd advice / NAAB code	3rd advice / NAAB c
CZ 265437962	1	210	2019-06-07	USA003129128855	NLD000671125486	CZE000002632064
CZ 246532962	3	172	2019-02-17	USA003129128855	USA003014562239	USA000074072173
CZ 260202962	1	423	2019-02-17	NLD000751519714	CZE000929058061	CZE000823041061
CZ 265491962	1	148	2019-08-15	CAN000012609045	USA000072850448	USA003140986357
CZ 265492962	1	189	2019-07-15	USA003129128855	NLD000533730469	NLD000688320928
CZ 246542962	3	153	2019-02-17	USA003129128855	USA003014562239	CZE000823041061
CZ 265436962	1	275	2019-04-17	USA003129128855	USA003140986357	USA003143160100
CZ 279813962	0	0	2019-09-22	NLD000671125486	USA003140986357	
CZ 243101962	3	203	2019-02-17	USA003129128855	USA000074072173	USA003014562239
CZ 265403962	1	314	2019-03-05	CZE000002632064	NLD000736800220	USA003129128855
CZ 265502962	1	155	2019-08-15	USA003129128855	USA003140986357	NLD000671125486
CZ 252910962	1	630	2019-02-17	USA000074072173	USA003129128855	USA003014562239

Animal result

Each animal in the herd has a specific page. This is called the ‘animal result’. This page is also available in HerdOptimizer for non-genotyped animals and male animals. This page displays the results of the genomic marker test to the user. Click on an animal under the Selection tab to access this page.

Animal data

Animal data presents the animal’s important data in a single overview. This includes the ranking of this animal in the herd. In relation to the breeding goal ranking number, does the animal fall in the top 25%, middle 50%, or lowest 25% of the herd?
Within this segment the pedigree of the animal is also displayed. If the pedigree is unknown, this will be indicated.
Finally, animal data displays the animal’s status for hereditary traits and defects. This distinction is made because not all hereditary traits are negative, as the word ‘defect’ implies. Positive traits, such as red factor and polled carriers, are therefore indicated as traits. If an animal has not been genotyped, the status of these traits will not be displayed. You can then request a genomic marker test for this animal via ‘Request test’.



Siremath advice list

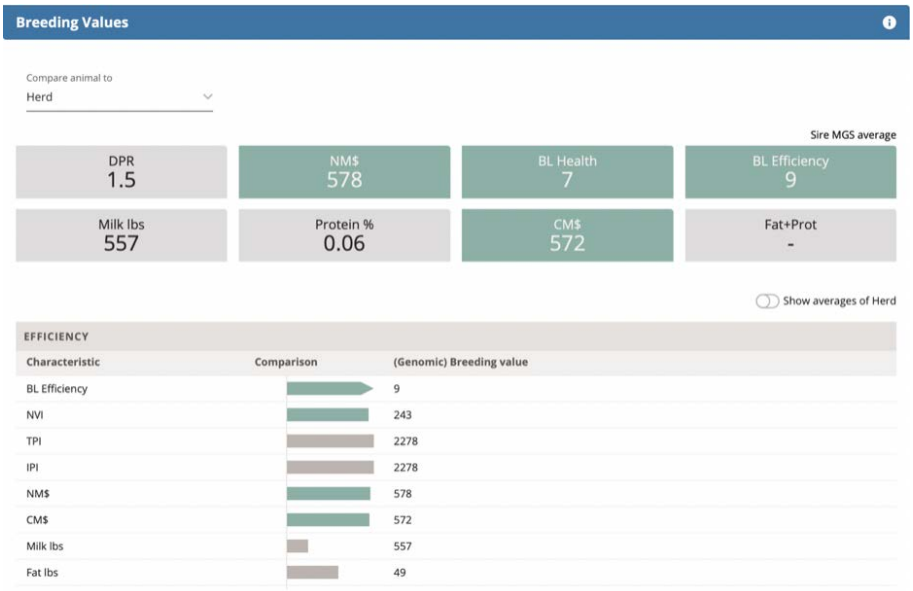
The SireMatch advice will be displayed on the animal page for each animal that has been included in the SireMatch index run. This section of the animal results will not be displayed for non-SireMatch participants.

Breeding values

The breeding values of the animal are displayed under the SireMatch advice. Has the animal been genotyped and are the results known? In this case, the breeding values are the genomic breeding values. Has the animal not been genotyped? In this case, the breeding values are the conventional breeding values. With a young animal, these will be the estimated breeding values. If an animal is already lactating, its performance will be included in the breeding values.

Firstly, the (genomic) breeding values will be displayed for the traits that have been indicated as the most important at ‘Settings’. The remaining breeding values will be displayed under the headings ‘Efficient Production’ and ‘Easy Management’.

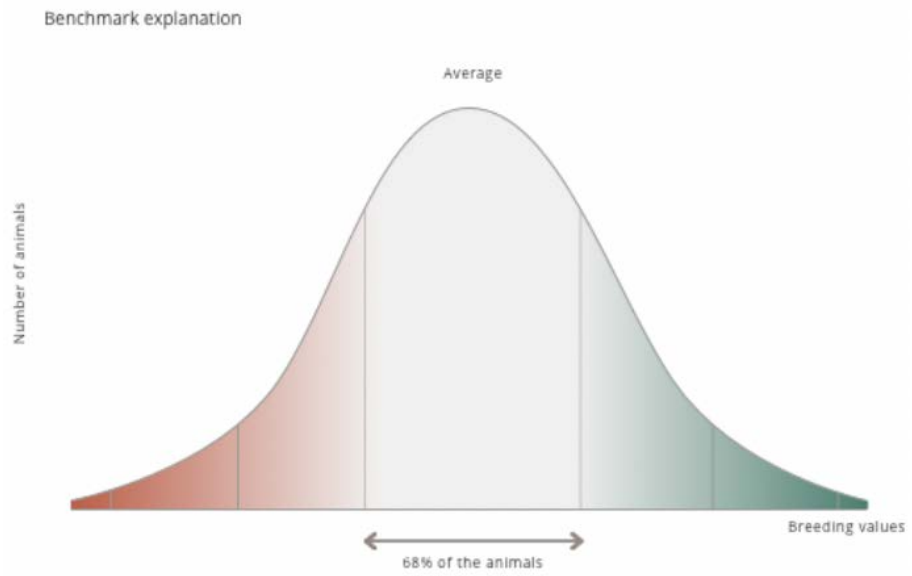
The reliability of the breeding value is also displayed with the breeding value. This will be higher if an animal has been genotyped. Therefore, a third figure is also displayed with genotyped animals: the marker effect. This shows the difference between the genomic breeding value and the conventional breeding value.



Heat map comparison

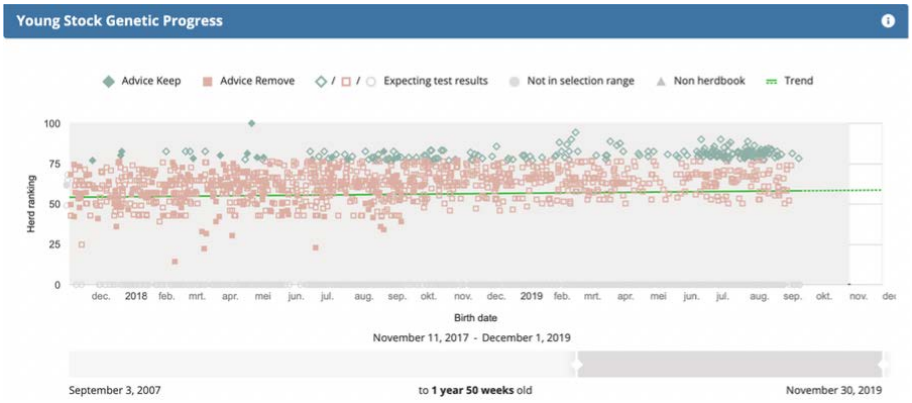
Each breeding value is immediately compared with the herd average. Is the breeding value for this trait of the animal much (more than 2 standard deviations) higher than the herd average? The square will be dark green. Does the animal, however, score far below the average of the breeding value? The square will be dark red. This shows the contribution of the animal to increasing the average of the herd for all traits instantly. Lots of green? The animal contributes positively to the progress of the herd. Lots of red? The animal will lower the herd average if it is kept. What happens if an animal has an average score? The squares are grey.

The animal can be compared in the same way with the young stock, the heifers or the dairy cattle of parity 2 and higher. They can also be compared with the basis of the traits (for many traits this will be 100, the average).



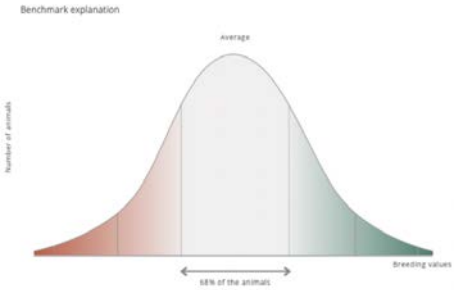
Genetic progress young stock

A graph is displayed under each animal result. This graph displays each animal born in the past year in relation to its position in the herd, based on its breeding value within the breeding goal. The green trend line shows genetic progress for the breeding goal of the entire herd. Colours indicate which animals are recommended for culling and which animals should be kept in the herd.
Animals without any known genomic marker test data are indicated by an 'open' symbol. Click a symbol to access the animal data of this specific animal.



Evaluation

Breeding values herd

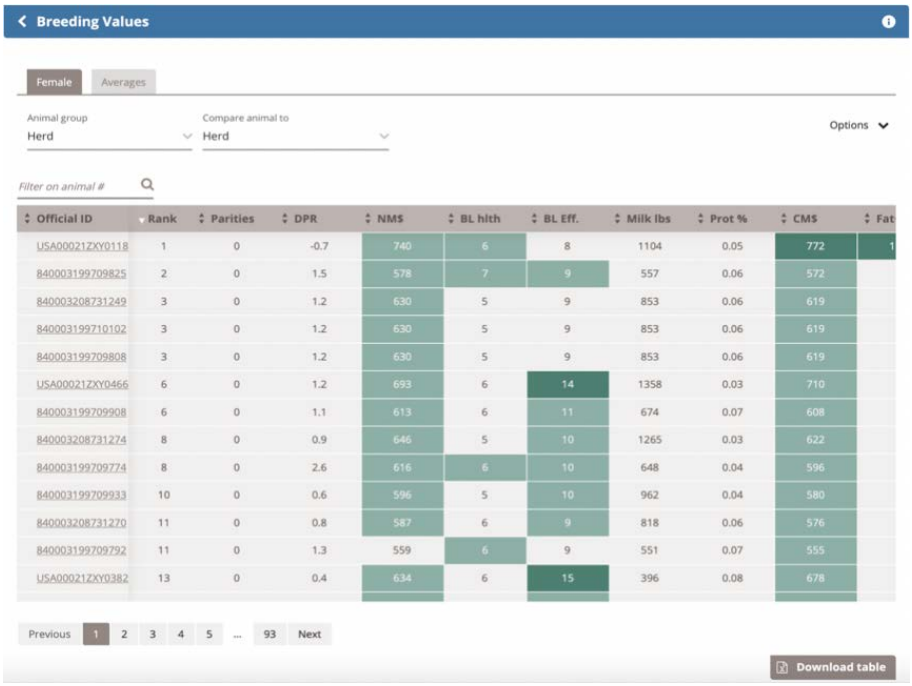


This table displays the breeding values of all animals in the herd. Firstly, the eight traits selected as the most important under 'Settings' are displayed. You can click on every animal number. You will be directed to the animal result of the relevant animal. Options allow columns to be enabled/disabled.
The remaining breeding values can also be enabled in the same way.
The status of the hereditary traits of all the animals can also be displayed.

This table also uses a heat map. Is the breeding value for a trait of the animal much (more than 2 standard deviations) higher than the herd average? The square will be dark green. Does the animal, however, score far below the average of the breeding value? The square for this trait is dark red. If an animal has an average score for this trait, the square will be grey.

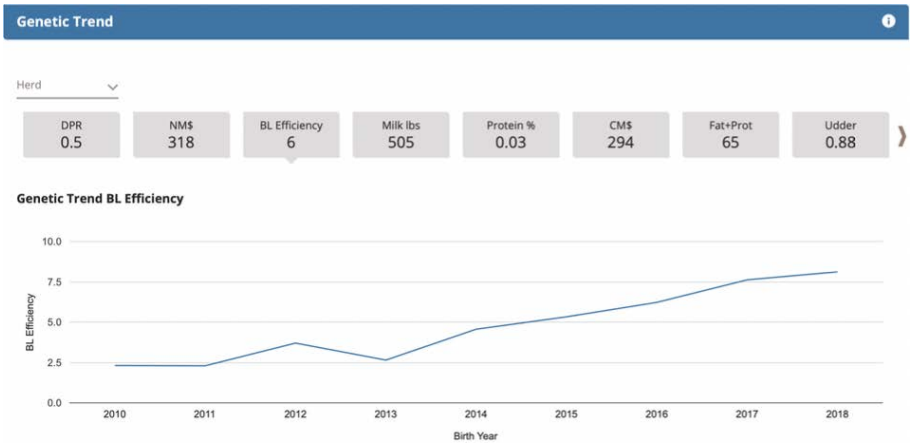
The animals can be compared in the same way with the young stock, the heifers or the dairy cattle of parity 2 and higher. They can also be compared with the basis of the traits (for many traits this will be 100, the average).
Each column can be sorted. Sort by two columns? First click column 1 and then hold down the shift button and click column 2. You can also view the averages of the

groups for each trait relative to another group of animals under Options. For example, how does the average of young stock score compare with dairy cattle, or the national average?



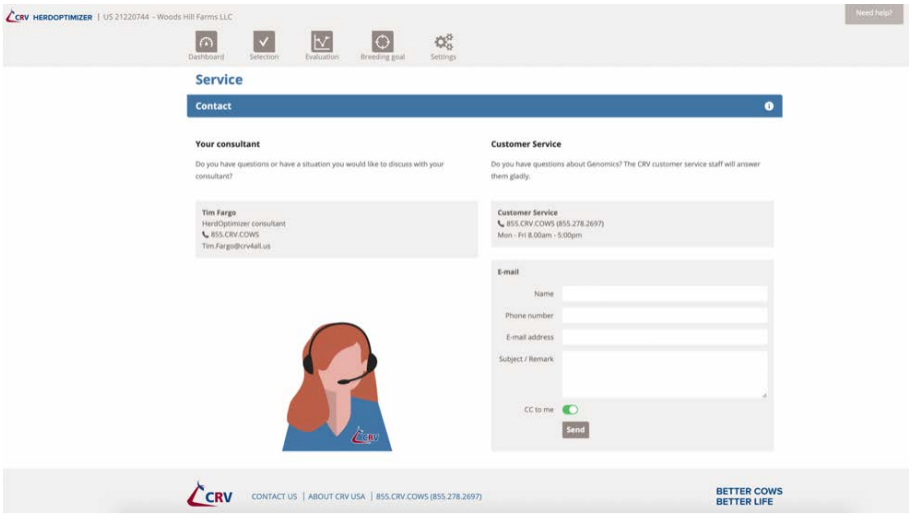
Genetic development

Genetic development shows the evolution of the breeding value selected per year of birth. This allows you to evaluate the effectiveness of your breeding choices on this breeding value.



Need help?

Service



Your adviser/representative

The contact details of the HerdOptimizer adviser are shown below.

Customer service

The contact details of the Customer Service team are shown below.

E-mail

Use this functionality on the Contact page to ask questions or send comments to the Customer Service team. If you complete this form, an e-mail will be sent to the Customer Service team. They will contact you as soon as possible. You can also receive a copy of the sent e-mail.