HIGHLIGHTS

LIFETIME PRODUCTION OF DUTCH COWS REACHES NEW RECORD

Last year the lifetime production of Dutch dairy cows reached a new record: 30,999kg of milk with 244 kg of fat and protein. This was revealed by CRV's annual statistics for the year 2013-2014. Every year CRV uses these statistics to inform the dairy sector about the performance of the Dutch dairy herd.
In addition to their lifetime production, the productive lifetime of Dutch cows increased by 5 days as well. The average calving interval was reduced by one day and is now 416 days. The increase of both the lifetime production and the productive lifetime of the cows is good news for the efficiency of the herd. Older cows with a high lifetime production produce higher yields compared to the investments in terms of feed and labour made during their rearing. The average production for B&W Holstein Friesians – the main dairy breed milked by producers in the Netherlands – top the list with an average production of 9,717kg of milk, with 4.31% fat and 3.51% protein in 356 days. They are followed by R&W Holsteins with an average production of 8,904kg of milk with 4.54% fat and 3.62% protein in 349 days.

WORLD FIRSTS FOR CRV

Aiming for an efficient, easy to manage herd is a worldwide trend. CRV wishes to help farmers to achieve the desired results and was able to report two important breakthroughs at the World Dairy Expo. Here CRV launched the renewed breeding index numbers Better Life Efficiency and Better Life Health, now incorporating two unique breeding values for feed intake and ketosis.

Linking feed intake to feed efficiency

For increasing the efficiency of the milk production, feed efficiency is the key factor. Sponsored by the Dutch Dairy Board, Wageningen University and CRV collaborated on the development of a breeding value for feed intake. CRV incorporates this breeding value in the Better Life Efficiency breeding indicator. This accurately shows the degree to which a bull has efficiently producing descendants. Better Life Efficiency guards the balance between efficient production and sustainability because it focuses on lifetime production. The development of the breeding value for feed intake was made possible by combining the feed intake data collected on the Dairy Campus of Wageningen University.

Reducing ketosis

Ketosis (slow fever) is a well-known problem adversely affecting the health of the herd. Field data from milk production registration have enabled CRV to develop a breeding value to reduce this problem. The breeding value ketosis will be incorporated in the Better Life Health breeding indicator. Farmers can use this index number for the practice-oriented selection of bulls that positively affect the health of the herd, now including ketosis as well. The renewal of the two Better Life breeding index numbers for health and efficiency with the two unique breeding values for feed intake and ketosis means a huge step forwards for farmers who wish to breed an efficient, productive and easy to manage herd. CRV publishes the information for its Holstein bulls from December.

CRV JOINS SINO-DUTCH DAIRY DEVELOPMENT CENTRE

On 2 December, the first anniversary of the Sino-Dutch Dairy Development Centre (SDDDC) was celebrated in Beijing, with the Dutch Dairy Expertise Centre being officially opened as well. On behalf of CRV, Jan Lok, CRV manager International Business Development, signed CRV's accession to this partnership.
In practical terms this means that, from now on, CRV will also share its know-how about breeding and herd management with partners from the Chinese dairy farming sector.
According to Li Shengli, director of the Dutch Dairy Development Centre, CRV's expertise and experience in breeding and herd management will definitely add value to the SDDDC.
The SDDDC was founded a year ago by the China Agricultural University (CAU), Wageningen UR and Koninklijke FrieslandCampina N.V. with the aim of promoting collaboration between the two countries in the dairy sector. The centre focuses on improving the food safety, quality and productivity of the Chinese dairy chain. For this, it uses the knowledge of the dairy industry available in the Netherlands.

CRV joins Sino-Dutch Dairy Development Centre

The newly founded Dutch Dairy Expertise Centre, a research and knowledge centre, will serve as a platform for demonstration, scientific research, exchange of technology and transfer of research results to practice in the Chinese dairy sector. In this way, the SDDDC aims facilitate the transfer of Dutch dairy knowledge to China.

BREEDING PROGRAMME: **ONLY GENOMIC BULL SIRES**

Since December 2014, CRV uses only genomic tested bull sires. All because this approach results in more rapid genetic progress. An explanation of CRV's vision and approach.

The use of only genomic bulls in the breeding programme is an informed decision, breeding technician Pieter van Goor explains. CRV's choice for this breeding strategy has by no means been made lightly. Figures support the bull sire selection that is now based on genomic tested bulls for the full one hundred percent. This is because the top of the genomic tested bull sires scores an NVI that is, on average, 70 points higher than the top of the highest breeding bulls. Van Goor: 'When daughters of the genomic bulls start producing milk, we will see that the spread of breeding values of the genomic tested bulls is larger than in the group of daughter proven bulls, but the lowest of the genomic bulls will always be better than the lowest of the proven bulls having been used as bull sires at that same time. This is because the proven bulls may change somewhat when daughters from the breeding period start producing milk. 'These are often foreign bull sires that also have only a limited reliability of about 73 percent at the moment of use. But they may also be Dutch tested proven bulls, such as Impuls, who lost quite some ground when his daughters from the proven period started producing milk. Likewise, his sons that have been used will have much less chance of making it as proven bulls. However, the genomic bull sires do yield top bulls, such as Atlantic, Arroyo and Camion, who were given chances as bull sires when they were still young bulls. Of these bulls, three, six and two sons respectively have already been tested early. There is a good chance that this will yield outstanding top bulls again, such as Delta Atlantic, Camion and Arroyo at the moment, and of course you do not want to miss those.

90% reliability achieved more rapidly

Breeding with young genomic tested bulls also results in a very high reliability level of the breeding values of proven bulls at a younger age. An advantage that is particularly important to farmers who like to use bulls with a high reliability. For example, at the age of six, Delta Atlantic already has a breeding value with a reliability of more than 90 percent, whereas, in the era before the genomic era, this would take at least nine years. The much more rapidly increasing reliability of the breeding value is the result of the wider use of these young bulls as InSire Top bulls. Now the reliability of the breeding value of a young genomic bull approaches 70 percent, it is sensible to perform many inseminations from a young bull because this reliability has reduced the chance of disappointments. So, as soon as the daughters of genomic tested young bulls

Reliability of genomic breeding values increasing

After the genomic breeding values were introduced into the breeding value estimation in 2010, this field has continued to develop. Currently CRV is investigating how the predictability of genomic breeding values is evolving. Genomics-based breeding values of bulls are compared to breeding values of the same bulls based on daughter information. The more the two values correspond, the greater the reliability of the genomic breeding values. This analysis has been shared with GES and has now been accepted by them as well. In addition, reliability has increased due to a number of adjustments in the methodology and a steady growth of the reference population within EuroGenomics.

This higher reliability means that, within the breeding programme, a more accurate selection can be made and that farmers can use InSire bulls with more confidence. In practice, this means that the new reliabilities for the GES breeding values have already been used since the breeding value estimation of mid-August. The changes are shown in the table. From this table, the average increase of the reliability per NVI characteristic can be deduced.

Table 1 – Reliabilities for NVI characteristics

	Current	New
Inet	70	70
Longevity	52	53
Udder	63	70
Feet & Legs	56	61
Clinical mastitis	64	66
Subclinical mastitis	66	71
Intv. 1st – last insem.	56	69
Calving interval	70	69
Calving ease	75	77
Daughter calving ease	50	52
Vitality	29	48
Mat. vitality	53	71
NVI	61	66

Proven bulls are important, but since December 2014 CRV uses only genomic bull sires

used as InSire Top bulls start producing, the reliability of the breeding value increases more rapidly, because a much larger group of heifers starts producing within a short time, compared to the past test bull period. Atlantic and Camion both already have thousands of daughters in production.

Not only genomic tested

These are logical scientific conclusions that have led not only CRV to decide to focus for one hundred percent on genomic tested bulls. Globally leading AI companies also focus on genomic bulls. Moreover, the decision to focus completely on genomic tested bulls was not made within a year. It was preceded by a period of nearly six years, in which the proportion of bull sires with only a genomic breeding value was increased step by step. Pieter van Goor can also imagine that, in the future, CRV will have years when the proportion of genomic tested bull sires is less than 100 percent. 'Take Delta Atlantic, for example. That bull is in such a class of his own that he has been used as a bull sire again. It is to be expected that there will also be genomic bulls that will score significantly higher when their daughters start producing and will then be used as bull sires again. When young genomic tested bulls are used as bull sires, per bull, no more than three to four sons are tested. The fact is that, also in the genomic era, spread remains very important. In terms of blood, but also in numbers.'

Genomics not for all

The use of only genomic bulls as bull sires by CRV does not mean that all cattle farmers need to make the same choice. 'Farmers who choose certainty really need to use the proven bulls. Therefore proven bulls with high reliabilities will remain an important part of the bull catalogue', says Van Goor. He realises that genomics causes a rapid succession of changes in breeding. Only limited or no use of genomics in the breeding programme would mean losing much genetic progress. 'We are sure that a breeding programme using genomics on a large scale yields the most rapid possible genetic progress.'

Delta Regard (Chevrolet x Belfast): with 361 gNVI and just one year old already used as bull sire

TOTAL INDEX | BETTER LIFE EFFICIENCY INDEX | BETTER LIFE HEALTH INDEX

DELTA **G-FORCE**

(Oman Oman x Jordan)

NVI 288 | 12 | 6

As an InSire Top Bull, Delta G-Force was already a very popular B&W bull both at home and abroad. His daughters are proving that the farmers who used him early on made the right decision. With excellent milk production (+1041kg of milk) and very good components, G-Force daughters guarantee extremely high fat and protein yields (+115kg). G-Force takes longevity (+555 days) and, with it, lifetime production to a higher level. In addition, his daughters produce very efficiently (+12%) and he has an excellent score for calving ease (107). Due to his early popularity, the number of daughters of G-Force in his breeding value calculation is already on a high level.

KG MILK	1,041
% FAT	0.21
% PROTEIN	0.16
UDDER	108
FEET & LEGS	107
LONGEVITY	555
CALVING EASE	107

Vd Pettershoeve Leida 464 (s. G-Force)

BARNKAMPER **MONROVIA**

(Mogul x Brilliant)

GTPI 2,527 | 9 | 5

Barnkamper Monrovia shines with +2,527 gTPI in the top of the ranking. Monrovia is a complete package bull that will fit any breeding objective. He transmits a lot of milk with average components, which leads to 703 NM$ and 712 CM$. For Better Life Efficiency he is scoring high with 9%. His excellent udders (+2.14) and very strong Feet & Legs (1.88) leads to an overall conformation score of 2.05 PTAT. Monrovia is scoring well on the management traits, like hoof health (107), locomotion (105), milking speed (106), temperament (105), persistency (107) and udder health (103). This leads to a Better Life Health index of 5. He is suitable for use on maiden heifers as well.

LBS MILK	1,559
% FAT	–0.01
% PROTEIN	0.01
UDDER	2.14
FEET & LEGS	1.88
LONGEVITY	6.0
CALVING EASE	6

Barnkamper Monrovia (s. Mogul)

CAUDUMER **POWERPLAY PP** RF

(Parker P x Magna P)

NVI 244 | 7 | 7

Caudumer Powerplay is a B&W InSire bull with the red carrier. He is widely used as a sire of son, because he is one of the world's top available bulls passing on the polled condition and is homozygous for this trait. This means that all of his offspring will be polled. Powerplay also scores well on both Better Life Health (+7%) and Better Life Efficiency (+7%). He is also noted for his high scores for calving ease (112), udder health (107) and fertility (104). With excellent milk production (+758 kg) and longevity (+440 days), Powerplay's offspring will be capable of high milk yields. Moreover, this trait is firmly established in the Lol cow family of Caudumer Holsteins that Powerplay comes from.

(KG) MILK	758
% FAT	0.08
% PROTEIN	0.05
UDDER	107
FEET & LEGS	104
LONGEVITY	440
CALVING EASE	112

Caudumer Powerplay PP Rf (s. Parker P)

TOTAL INDEX | BETTER LIFE EFFICIENCY INDEX | BETTER LIFE HEALTH INDEX

POPPE **TIMELESS**

(Aram x Snowman)

NVI 311 | 8 | 4

Poppe Timeless is a R&W InSire Top Bull and a good bull to use to improve the lifetime production of the herd. He does this by combining high milk production (+1205kg) with excellent longevity (+750 days). Timeless scores very high for type (115), thanks in part to an excellent score for udder (113) and very strong Feet & Legs (109). Timeless passes on good efficiency in milk production (+8%). Also on the management traits he is performing well; it's a good bull to use to improve udder health (107), persistency (105) and hoof health (104). With a calving ease score of 105 he can be used for maiden heifers as well.

(KG) MILK	1,205
% FAT	–0.12
% PROTEIN	–0.04
UDDER	113
FEET & LEGS	109
LONGEVITY	750
CALVING EASE	105

Poppe Timeless (s. Aram)

SCOTTS FROST **DEVILLE S1F**

(Frostman x Banquet)

NZMI 261 | 6 | 5

Deville graduated in February 2014 as one of our most complete new bulls. With his daughters now in their 2nd lactation he has strengthened his position and now he is the leading 2014 graduate. As a moderate milk flow bull with high components (4.62% fat and 3.78% protein) he offers great milk solids production. As the highest daughter fertility bull and with sky high longevity figures, low cell counts and maiden heifer calving ease he promises trouble free cows that live forever. His daughters are below average for stature with above average capacity and strength. This gives us a compact package which combined with his strong production drives his Better Life Efficiency (6%).

MILK (L)	694
% FAT	4.62
% PROTEIN	3.78
UDDER	0.51
LONGEVITY	328
DAUGHTER FERTILITY	+5.9

Deville (s. Frostman)

MOYA

(Variko x Rau)

GZW 137 | 6 | 5

Moya is genotyped as the best son of Variko with GZW 137 and a reliability of 68%. For milk production he is scoring a breeding value of MW 121 (72% reliability). Moya raised at the rearing station in Osik and released a great type classification (VG 86). His average daily growth of 1.721 grams, is 244 grams more than other bulls of the same age. The dam of Moya is a strong cow with very strong conformation. In September 2014 she started her 4th lactation with 36kgs of milk per day. His grand dam (s. Romel) was also a real milk transmitter. Strong point of the cow family are their flat lactation curves.

(KG) MILK	711
% FAT	0.01
% PROTEIN	0.01
UDDER	117
FEET & LEGS	99
LONGEVITY	121
CALVING EASE	122

Moya (s. Variko)

DELTA ATLANTIC – BY FAR THE MOST USED BULL

During the past year, Delta Atlantic was by far the most used bull. The Ramos son, from Etazon Renate, recorded a total of 68,438 first inseminations from September 1, 2013, through August 31, 2014, CRV's statistics show. This gives Atlantic a substantial lead on the runner-up, former leader Topspeed Kodak. The red-and-white Kevin son recorded 28,357 first inseminations. He is closely followed by the most used genomic bull Batenburg G. Stellando in third place. The red factor Fidelity son scored 28,027 first inseminations in just 12 months.

MOST CALVES FOR **TOPSPEED KODAK AGAIN**

For the second year in a row, Topspeed Kodak was the bull with the most herdbook registered calves, as CRV's annual statistics show. CRV recorded close to 26,000 calves from the red-and-white Kevin son.

The runner-up is Delta Atlantic, the black-and-white bull with the most calves, with a total of 24,564 descendants. That is almost three times as many as the Ramos son, from Etazon Renate, recorded in 2013/2014. In the black-and-white ranking, Atlantic succeeds leader Cricket, who now takes third place. In the red-and-white ranking, the top three remains unchanged, with Kodak and Fidelity and Camion, respectively.

FIRST CRICKET DAUGHTER EXCELLENT

Willem's Hoeve Rita 670 has taken a new step on the road to becoming top of the class. Recently the second calver has been classified as Excellent' (EX 91). Rita 670 has already drawn attention in the show ring. On her debut, she won the Dairy Fair in Marienwaerdt 2013, and later that year she left the HHH Show in Zwolle as the heifer champion.

It is obvious who she gets her fine looks from. Sire Ralma O-Man Cricket has outstanding credentials for conformation, but is above all things a health specialist, breeding persistent daughters with shallow udders. With a breeding value of 113 for somatic cell count, Cricket is a popular addition to many AI flasks.

Willem's Hoeve Rita 670

CRV GENETICS LEADS LONGEVITY IN BRAZIL

Some years ago CRV Lagoa introduced the 100,000kg of milk award for dairy cows in Brazil. Milking cows that reached a lifetime production of 100,000kg of milk, with official milk records by ABCBRH, will be awarded. To date there are 352 cows (from 92 farms) that have produced this extraordinary amount of milk in Brazil. From these cows, 26% are daughter of a CRV bull. Once again, this is clear evidence that CRV genetics supports producers to breed long-lasting, high yielding milking cows.

Delta Paramount daughters in Brazil

ROBINSON FAMILY **SATISFIED WITH SIRYX**

John and Val Robinson began dairying 16 years ago, milking 100 cows on a small North Yorkshire-based unit. In 2009 they moved to a rented farm where they are now milking 170 pedigree Holsteins.
John and Val's children, James (16) and Gayle (13), are interested in dairying and spend some of their time showing calves and heifers.
The wider family focus is the milking herd. Cows are fed a blend plus silage at the feed bunker and concentrates in the parlour.

The Robinson family with calves sired using SiryX semen

The aim is to calve heifers at 26 months old. Cows are inseminated a maximum of three times, using Holstein semen, before using the sweeper bull. Milk is supplyed to Wensleydale Creamery, a local cheese processor.

Use of siryx semen

The family has made good use of sexed semen since it was introduced. Although the first years saw varying success, in 2011 and 2012 the Robinsons used CRV Avoncroft's Fidelity SiryX with a lot of success! And in 2014 they used Griffith P SiryX semen. "We know that we can get our heifers in calf with CRV Avoncroft sexed semen, and get a heifer calf," says Val Robinson.
The fertility results are exceptionally good with an average pregnancy rate of 83%. "Using SiryX on the maiden heifers and the first and second lactation cows resulted in a 100% conception rate," adds Val. "Third lactation or more cows see a conception rate of around 50%,"concludes a very satisfied SiryX semen user.

FIRST **DAUGHTER GROUP OF G-FORCE**

As an InSire bull, Delta G-Force (Man-O-Man x Jordan) was already very popular, both at home and abroad. His first daughter group, demonstrated at the Cow Expo in Gent, proved that the producer who used him early on made the right decision.
The five G-Force daughters showed a lot of dairyness with their tall and long frames. They had high attached rear udders, with very strong ligaments. Teat length was a little longer than average, the placement of the teats was very correct. His daughters moved well on their somewhat sickle-hocked feet and legs.
With excellent milk production (+1,041kg of milk) and good components, G-Force daughters guarantee extremely high fat and protein yields (+115kg). G-Force takes longevity (+555 days) and, with it, lifetime production to a higher level. In addition, his daughters produce very efficiently (+12%) and he has an excellent score for calving ease (107).

The G-Force daughter group on show at Gent

DISTRIBUTORS MEETING BRAZIL

Late October 2014 saw the bi-annual Latin and Central American distributors meeting. The meeting took place in Sertaozinho, home to CRV Lagoa's AI centre. Presentations about the CRV breeding programme and the integration of feed intake and ketosis within the breeding indicators Better Life Health and Efficiency were part of the discussions. The distributors also visited four farms with Holstein, Jersey and Brown Swiss cows, as well as the customer collection centre at Bela Vista in Botucatu.

Delegates at the distributor meeting

CRV REPORTS **EXCELLENT FINANCIAL RESULTS**

CRV ended the financial year 2013–2014 with a net result of EUR 6.7 million before distribution of members' profits. This was achieved in particular thanks to expanding sales combined with more efficient management.
The growth in sales and profits came in a year in which CRV reinforced its position in herd management. Sales rose partly as a result of a very strong supply of bulls and partly due to an increasing demand for management products. CRV's ongoing innovation and development, also in the field of genomics, is clearly bearing fruit. Products and services were improved as part of herd management and several innovations were introduced, including new fertility solutions that are widely used in the market.
CRV will further develop its herd management portfolio and strengthen its leading position in this field in 2014–2015.

AMERICAN BREEDING PROGRAMME OF **ALTA AND CRV IN FULL SWING**

The joint American breeding programme of Alta and CRV is in full swing. Currently 100 calves are born in the breeding programme every month, according to Alta CEO Cees Hartmans and CRV CEO Roald van Noort. "In March, the first bulls will become available for CRV. We are really looking forward to that moment," says Van Noort.

Breeding programme more solid

The two AI organisations announced their collaboration in a Northern American breeding programme a year ago. "A breeding programme is very expensive. Bull contracts for top cows are not affordable any more. We therefore decided to purchase top cows ourselves and breed bulls from them. The collaboration with CRV makes the programme more solid and more efficient," says Hartmans.

Bulls distributed at random

In the so-called Peak breeding programme, high-quality female animals are used intensively. The bulls that are born are tested genomically and it is jointly determined at random who, either Alta or CRV, will add which bull to its range of bulls. Female animals born in the breeding programme are used by the company itself or sold to buy new genetics from the proceeds.

Cees Hartmans and Roald van Noort

HUNTER SHOWS TREMENDOUS DAUGHTER GROUP

The rumors of the first lactating daughters of Cookiecutter Mom Hunter were already spectacular. On the HHH show became clear why farmers are so enthusiastic about his daughters. The Oman Oman son showed a group of well-balanced heifers with a lot of dairyness and with a very nice slope to the rump. His daughters are moving very strong on their somewhat sickle-hocked feet and legs. The udders are of extremely high quality: very high in the rear, well-attached front udders and strong central ligaments. In combination with his attractive production proof Hunter enable farmers in various business situations to improve the efficiency of the herd.

The Hunter daughter group at the HHH show

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FUTURE EVENTS

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