Milk South Africa
Melk Suid-Afrika

Milk Essay

Vol 13 no 5 • November 2022 Tel 012 460 7312 • www.milksa.co.za

CONTENTS

2 Sampling left, right and centre. . .
3 Assuring that tertiary education remains relevant
3 Front-of-pack labelling
4 Explaining the Skills & Knowledge dispensation pertaining to the secondary industry sector
6 Current industry endeavours on qualifications in the secondary industry sector
7 Dairy Chamber firing on all cylinders
8 Foodbev SETA: On the Dairy Chamber agenda
9 Recent developments in the Skills & Knowledge Development in the secondary dairy industry sector
10 Check it out! Dairy Gives You Go website
11 Targeted:The Modern Mom | Standards for Africa
12 World School Milk Day celebrations
13 Guiding graduate dietitians
14 Protection against the import of UHT milk
16 Primary Skills & Knowledge Development on the moooove. . .
17 Dr Mark Chimes presented at Stellenbosch University
18 Breeding "fit for purpose" dairy cows
23 New appointments at the MPO and IDF Standing Committee on Environment
24 Nejahmogul revoked as assignee by the Minister
25 Latest news from the joint meeting of the IDF Standing Committees on Dairy Education & Promotion and Marketing
26 The global impact of cattle: A socio-economic, food security and environmental perspective
26 Latest news from the IDF Standing Committee on Animal Health and Welfare
28 Livestock identification and traceability system (LITS) approved by Minister Didiza

MELKPRODUSENTE-ORGANISASIE
MILK PRODUCERS' ORGANISATION

South African Milk Processors' Organisation

STANDARD DAIRY AGENCY

This is a publication of Milk SA. Milk SA was founded by the primary and secondary dairy industry sectors to promote a healthy South African dairy industry.

SAMPLING LEFT, RIGHT AND CENTRE...

The Dairy Standard Agency (DSA) found partners in various government circles and amongst others, the municipalities which are actively and proactively collaborating in the national monitoring programme of DSA

In the latest sample run (cycle 81), 532 samples were drawn in all the provinces, involving 64 metropolitan, district and local municipalities.

- 267 samples were milk in various categories;
- 265 samples were cream cheese, cottage cheese and cheese with added foodstuffs, processed cheese and cheese spreads.

Samples were tested by the DSA Laboratory Services benchmarked against the official food safety, compositional and trade metrology standards. Food safety non-conforming results obtained were assessed by DSA and communicated to the participating municipal health authorities for further action.

Where required, DSA liaises with the relevant law enforcement bodies and provides support to industry participants in respect of dairy technical information and guideline documents to limit the sale of non-conforming products.

7% of the milk samples exceeded the maximum Aflatoxin M1 residue limit of >50 ppm. The ongoing phenomenon of the seasonal presence of Aflatoxin M1 in milk destined for human consumption is concerning and a combined report of quarterly testing will be finalized soon for the attention and intervention by the National Health Authority. DSA communicates results to processors and municipal authorities.

Assuring that tertiary education remains relevant

The Dairy Standard Agency serves as a member of the Advisory Boards of the Departments of Environmental Health of the Tshwane University of Technology (TUT) and the Nelson Mandela Metropolitan University. The purpose of the advisory boards is to give industry inputs and assist the universities with the development of course material for environmental health practitioners (EHPs).

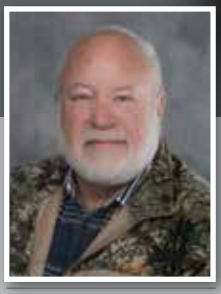
FRONT-OF-PACK LABELLING: MILK SA APPOINTS EXPERT TASK TEAM TO PROTECT THE INTERESTS OF DAIRY

The Department of Health (DoH) is currently addressing the issue of the mandatory use of front-of-pack (FOP) labelling, which was initially published as voluntary guidelines to the draft regulations relating to the labelling and advertising of foods (No R429). The collaboration by the Regulations and Standards Project and the Consumer Education Project of Milk SA takes place through a Milk SA Task Team, which aims to strengthen the position of the dairy industry, with specific reference to the unique nutritional composition of dairy.

The Milk SA Task Team is supported by a team of experts to formulate a scientific document that is evidence based to preserve the nutritional value of dairy while considering labelling systems that could be detrimental to the image of dairy in respect of sugar, fat and salt.

The latest scientific report has been prepared for consideration by the Milk SA Task Team that will meet during the fourth quarter of 2022.

EXPLAINING THE SKILLS & KNOWLEDGE DISPENSATION PERTAINING TO THE SECONDARY INDUSTRY SECTOR



Gerhard Venter

The Skills Development Act and Skills Development Levies Act mandate the payment by employers of 1% of remuneration cost as Skills Development Levy to SARS, who in turn splits that into a 20% allocation to the National Skills Fund (NSF) and 80% to the SETA.

The SETA is mandated to spend 10% on internal administration (to run its business and fulfil its obligations); and must pay 0.5% into the TVET Colleges fund. The remaining 69.5% (of the original total levy) is split into a mandatory (20%) grant and discretionary (49%) grant, while the remaining 0.5% (from all SETAs) is funding the Quality Council for Trades and Occupations (QCTO).

The mandatory grant is based on the submission of a workplace skills plan (WSP) and annual training report (ATR) that indicates fair compliance with the WSP.

The discretionary grant funds the attainment of registered learning interventions (such as trades, primary activity qualifications, support activity qualifications and national skills development imperatives such as adult education and training (AET)) and is split 80:20 to pivotal (qualifying) and 'other' training.

The current percentage split between the two grants (mandatory and discretionary) is being litigated by court cases, but the larger portion favours the discretionary grants. SETAs may obtain additional funding from the National Skills Funds. SETAs may retain funds committed to approved projects for the reasonable duration of such projects, but all excess funds must be paid over to the NSF.

Micro and small enterprises that qualify, may be exempt from paying the levy and still access discretionary grants from the SETA for learning interventions that can be connected to enterprise development initiatives, as well as national imperatives. Currently there is very little participation from the small and micro enterprises (SMEs). In addition, many enterprises do not participate meaningfully and thus do not derive any benefits from grants.

EXTRACT

from the Project Manager's circular of 9 September 2022

by Gerhard Venter

Learning interventions pertaining to primary activities allude to industry-specific disciplines such as Dairyman, Liquid Dairy Raw Materials Reception Operator (affectionately called Milk Reception) and Dairy Laboratory Analyst. The learning materials developed during the tenure of the now defunct Dairy Industry Training Board informed the contents of the current legacy qualifications that are unit standards based. These are being phased out as the curriculum-based qualifications (that have been developed with funding by Milk SA) replace them. The development was completed by end 2019, but for the authorities to effect this replacement is a time-consuming process.

Learning interventions pertaining to support activities (both hard and soft skills, i.e. traditional trades and accounting, management, human resources management, information technology etc. by way of a few examples) are also regulated by the SETA by means of Memoranda of Understanding with SETAs for which such disciplines are the main activity. In this way, providers for such non-primary activity learning interventions that are accredited by the relevant SETA, are also deemed as accredited by FoodBev SETA. Grants are also available for such training needs within our industry.

Current industry endeavours on qualifications in the secondary industry sector

by Gerhard Venter

As an interim arrangement, the legacy qualifications have been kept active (unit standards based and co-registered with the replacement curriculum-based qualifications), until such time that learnerships are registered for the ten Dairyman qualifications and the subsequent establishment and implementation of a funding model for the latter. This is a time-consuming process that is happening at QCTO (SAQA only registers the original qualification versions)

- The 10 Dairyman qualifications, which were originally registered as part-qualifications encapsulated in a massive parent qualification carrying in excess of 1300 credits, are now registered as discreet stand-alone qualifications. This is currently under review (mainly in respect of the credit values for modules and thus the duration for which the funding model should be applicable, not contents) and the design and registration of (actual) part-qualifications within each of the discreet qualifications – which allows for a phased attainment of the qualification through employable skills sets over a longer period of time.
- Liquid Dairy Raw Materials Reception (the milk reception qualification), the status of which is yet undetermined. The SETA has not been able to elicit an answer to present to the Project on the status quo of this qualification, but the enquiry is on record and on the agenda.
- Dairy Laboratory Analyst qualification. This seemingly was registered provisionally in 2019, but the current status quo has not

been determined yet. This is also on record as a standing enquiry and on the agenda.

In addition to the above, there are non-dairy-specific but broad food industry-based qualifications at NQF level 1 (grade 9, general food factory worker) and level 5 (vocational higher certificate post-national senior certificate). The latter is a food production management qualification. There are also a variety of skills programmes that are both dairy-specific (components of the dairy-specific qualifications) and generic in the 'pivotal' category for grants.

Apart from the dairy-specific learning interventions, there are an array of hard skills interventions (trades) and soft skills interventions that are well supported with grants from the SETA. In the latter regard, special mention needs to be made of the Management Development Programme and Senior Management Programme and bursaries for both food industry-aimed and soft support skills diplomas and degrees.

Dairy Chamber firing on all cylinders

Richard Hutton
Chairman, Dairy Chamber & FoodBev Board member

The representative of the organized dairy industry on the Board of FoodBev SETA, Mr Richard Hutton of Woodlands Dairy, serves (as mandated by the SETA Constitution) as the Chairman of the Dairy Chamber.

Five further dairy industry nominees (Bernadette Bezuidenhout – Lactalis; Neels de Jager – Clover; Jacques du Preez – Fair Cape Dairies; Jabulani Khanyile – Orange Grove Dairies and Portia May – Coega Dairy and an industry body representative (Gerhard Venter – Milk SA & SAMPRO) make up the current employer representatives and one trade union representation is currently known to be active.

It seems that the Dairy Chamber is currently the only fully functional chamber. The reality which the SETA still has to accept is that industry is an equal partner in the chamber and on the Board. That said, it has never been rejected by the SETA, but the agenda of discussion items is still promoted by the SETA, even though the dairy industry items are increasingly accommodated. On both a technical level and strategically, the dairy industry serves as example for other sub-sectors.

Foodbev SETA:
On the Dairy Chamber agenda

The representatives from the organized dairy industry serving on the Dairy Chamber (an established committee of the Board of FoodBev SETA) have initiated a number of matters with the SETA that now serve as projects to which the SETA has responded. The rationale is that the dairy industry should bring its skills and knowledge development needs to the SETA and not only be a rubber stamp to SETA-selected issues. After all, industry is best informed of its needs and should address them to the SETA in support of national imperatives and not in spite thereof.

Apart from the endeavours pertaining to qualifications as elaborated above, the following matters have been recorded as endeavours which ought to be managed by identifying the primary rapporteur, the reasonable frequency of reporting and indications of successful completion (mainly as enquiries from the project seeking answers from the SETA):

- In arrears since first submission approximately 4 years ago: The direction and logical, acceptable end-point of the pilot study in which a large number of learners was trained in the various Dairyman qualifications. At first a pilot study was POLICY.
- Finalizing and implementing of provider accreditation and workplace approval/ accreditation as training and assessment centres. This process has made great strides since 1 April 2022, but needs to precipitate in much wider participation, also by SMEs.
- Improvement of SETA operational processes to ensure a user-friendly, logical and as non-bureaucratic dispensation as possible. Refer to typical problems identified through research in the adjoining column.

EXTRACT

from the Project Manager's circular of 9 September 2022

by Gerhard Venter

Recent developments in the Skills & Knowledge Development in the secondary dairy industry sector

After many requests for information on the relative participation of the Dairy sub-sector in SETA processes and products, our Board member, Mr Richard Hutton achieved a breakthrough when he arranged a 'mass dump' of information from the SETA on this issue.

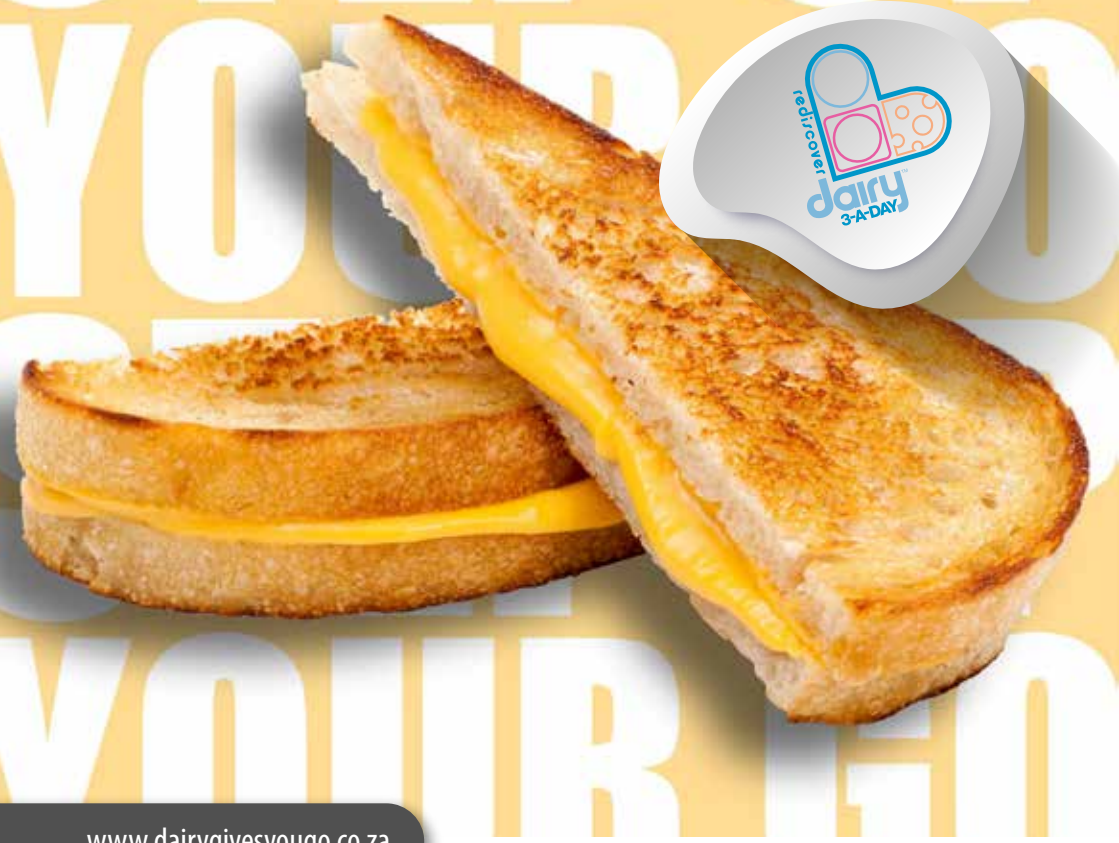
Unfortunately, this was not in a utilizable format and the Project wanted the information much filtered. A second attempt brought information in a slightly more user-friendly format, which he then filtered further, and certain very useful data could be presented at the recent Skills Development Advisory Committee meeting.

In summary, it can be stated that the dairy enterprises registered and active in SETA processes and products account for approximately 85% of the milk produced in South Africa. In fact, the dairy sub-sector represents approximately 11% of the employees of the total Food and Beverages Manufacturing Industries as a sector but utilizes some 30% of the grants available.

FoodBev SETA has approximately R900 million committed to existing projects in various stages of completion. Annual skills development levy income was set back by the levy payment holiday during the COVID-19 pandemic and revenue dropped to R284 million for the 2019-2020 financial year. This has improved to R394 million, as the lockdown was lifted and the economy reopened during the 2020-2021 financial year.

Enterprises are urged to investigate the programmes and products of the FoodBev SETA (including bursaries) by visiting the website of the SETA, to determine whether or not some urgent skills development required on-site may be available with funding.

CHECK IT OUT! DAIRY GIVES YOU GO WEBSITE



www.dairygivesyougo.co.za

The Dairy Gives You Go website is aimed at teenagers and provides the health and nutritional benefits of dairy in an infographic format. There are three themes on the website:

- Every day: and the role of dairy
- Sport and dairy
- Strength: the benefits of dairy

In addition, all the TV advertisements, consumption videos and Tasty Treat videos can be viewed on the website, together with the television adverts.

#dairygivesyougo

TARGETED: THE MODERN MOM

The RediscoverDAIRY Facebook page was introduced on 21 October 2019 and is aimed at the modern mom (ages 25–55).

The purpose of the RediscoverDAIRY Facebook page is to be a portal for trusted information on dairy nutritional information. It primarily uses existing content from the RediscoverDAIRY website, together with newly developed content that is disseminated through direct posts and established bloggers.

The content focuses on the nutritional importance and role of milk and other dairy products in the diet. The information is posted on the platform at least three times per week. Content is planned a month in advance. In addition to the 'always on' content, media releases are developed and used as content for the RediscoverDAIRY Facebook and in digital media. Where possible, radio interviews are arranged, which strengthen the message and increase the reach of the information.

STANDARDS FOR AFRICA

The African Organization for Standardization's (ARSO) ambition is to have a minimum of 75 different standards for dairy products developed for the African continent in support of its strategic objective, which is to harmonize trade in Africa in the next four years. Three monthly workgroup meetings are held for milk and milk products, as well as one plenary session during which progress is discussed. The Milk SA project manager (Jompie Burger) with the assistance of a contracted expert attend the monthly meetings. Jompie also convenes one of the workgroups, making contributions to the development of the standards.

Jompie Burger

WORLD SCHOOL MILK DAY CELEBRATIONS

World School Milk Day is celebrated annually on the last Wednesday of September. This year the theme was 'Dairy gives you GO for a healthy me and healthy environment!' which focussed on how dairy makes a difference in the health status of the school learners by getting the learners and teachers involved through a school-driven campaign.

The Consumer Education Project of Milk SA developed a World School Milk Day challenge that emphasized the unique combination of nutrients, in each dairy product, that work together in building a healthy body and immune system. In addition, the important role that communities play in the health of the environment was also highlighted. Learners were challenged to collect empty dairy containers to reuse them in creating a work of art.

Working with the Department of Basic Education's National School Nutrition Programme, the challenge was distributed to schools nationally online. The World School Milk Day challenge ran the entire month of September in various schools (both public and private). The winner will be announced during November 2022.

The Consumer Education project also distributed learning material to 25 schools in rural areas and provided learning material to 8700 learners. The learning material consisted of a teacher's guide, class posters, and fact sheets. Many processors provided the learners with a milk or other dairy product sample.

GUIDING GRADUATE DIETITIANS

The Consumer Education Project's dietitian, Ms Maretha Vermaak visited five **tertiary hospitals** in 2022 where graduate dietitians do their community service. Such hospitals also offer several public clinics that present nutrition education. The purpose of the visits was to inform the dietitians in this work environment about the work and activities of the project and at the same time, the Educational Tool is presented to the graduate dietitians.

As part of CEP's liaison with **universities**, the Project awards an annual prize for the best dietetic student in Community Nutrition at specific universities. For 2022, these prizes were awarded to students at the University of Stellenbosch, the University of the Free State, the University of the North West, and the Nelson Mandela University. As part of the prize, the students also received various educational materials/tools for dietitians as developed by the CEP.

Maretha Vermaak
Dietitian of the Milk SA
Consumer Education Project

Protection against the import of UHT milk

By De Wet Jonker
Project Manager: Customs duties & Market Access

The current rate of duty on UHT milk imports has for almost two decades been at a zero rate of duty. Currently, almost all imports of UHT milk originate from Poland. When South Africa started its negotiations in 2000, UHT duties were bound at a zero rate and South Africa cannot increase its normal import duties to curb the influx of UHT imports from Poland.

The only measurements to our disposal are, either ***Dumping duties, or Safeguard duties*** under Article 35 of the EPA agreement. A study undertaken by the local South African processors of UHT milk through their representative organization SAMPRO, indicated in 2019/2020, that Poland did not dump any UHT milk in the South Africa market at a lower price level than what was available in their own market.

Informal discussions about Article 35 took place and a formal letter was forwarded to ITAC to get clarity if there are any guidelines for the implementation of Article 35 of the EPA agreement once the import trigger levels for full cream UHT milk are exceeded in a particular year.

After this development, the Department of Agriculture, Land Reform and Rural Development (DALRRD) held several interdepartmental meetings with the Department of Trade and Industry and Competition (DTIC), SARS and the International Trade Administration Commission of South Africa (ITAC) on this matter during which implementation guidelines were developed and agreed upon at national level. The proposed guidelines were shared with its SACU partners and draft guidelines for the implementation of Article 35 of the EPA agreement were published in the Government Gazette.

The South African negotiators (DTIC and DALRRD) are busy negotiating the guidelines with the EU and we hope to have a conclusion in 2022. The Department participated in the 8th SADC-EU EPA Trade and Development Committee (TDC) meeting which took place on 26 November 2021, through a virtual platform. During the meeting, the EU indicated that their newly-appointed political head has approved, on behalf of the EU, the signing of the Decision on implementation of the measure by the Joint Committee.

The EU further indicated that it had noted the matter raised by the SADC EPA States of recovering the lost time, but was of the view that the focus by now should be on getting the measure implemented. The EU further stated that the article itself and the footnote do not make any reference to the timeframe for implementation of the measure and do not state any possibility of an extension, therefore no time was lost and the legal arguments presented by SACU, have no basis.

In response, SACU indicated that it had put its arguments in writing and therefore would prefer feedback from the EU in writing as well. SACU also indicated that the article is not explicit in terms of the commencement of implementation of the measure.

The SADC/EPA States indicated that they had reached an agreement on the trigger levels of products listed under Annexure (vi) of Article 35 of the EPA agreement. This list will be shared once received from DTIC and DALRRD.

The mass (kg) of imports of UHT milk with a fat content not exceeding 1 percent (tariff subheading 0401.10.07) and UHT milk with a fat content exceeding 1 percent but not exceeding 6 percent (tariff subheading 0401.20.07) have decreased considerably over the last few years up to 2020. From January to December 2021, 22 491 tons of UHT was imported. In the first eight months of 2022, a mass of 1 712 tons of UHT milk was imported. See Table.

TABLE:
The mass of imports of UHT milk with a fat content not exceeding 1 percent (tariff subheading 0401.10.07) and that of UHT milk with a fat content exceeding 1 percent but not exceeding 6 percent (tariff subheading 0401.20.07)

UHT Milk	2017	2018	2019	2020	2021	2022 Jan to Aug
	Tons					
0401.10.07	3	25	20	43	8 724	280
0401.20.07	38 801	17 145	17 992	5 392	13 767	1 432
Total mass	38 803	17 170	18 012	5 435	22 491	1 712

Primary Skills & Knowledge Development on the moooove...

Extracts from the third quarterly report by Helene Pheiffer
Project Manager, Primary Skills & Knowledge Development

During the 2nd quarter, the MPO Training Institute submitted a proposal via the AgriSeta to QCTO for the revision of the dairy occupational qualification. During the 3rd quarter the MPO Training Institute had to submit a new proposal, as the wrong procedures and documentation were initially followed and forwarded by the AgriSeta. The QCTO approval for the revision process is still awaited. It is envisaged that the revision process will only commence in 2023.

The MPO Training Institute also applied for AgriSeta funding for the appointment of a Community Expert Practitioner to facilitate the revision process. An amount of R189 000 was approved by the AgriSeta during the 3rd quarter.

On 19 July 2022 the QCTO conducted a site visit and evaluation at the MPO Training Institute, following which accreditation as skills development provider (SDP) was awarded on 02 Aug 2022 (07-QCTO/SDP280722-7021).

The MPO Training Institute participated in a research survey commissioned by DALRRD to determine what constitutes the priority skills and occupations in the agricultural sector. The aim of the research is to enable DALRRD to implement actions to address skill shortages.

MPO submitted a proposal for discretionary grant funding. The proposal involves dairy skills development workshops and short courses for dairy farm employees.

The MPO Training Institute had a meeting with another SDP who also applied for accreditation for the dairy occupational qualification. Training methodologies and possibilities of future cooperation between the MPO Training Institute and the SDP were discussed.

The MPO Training Institute hosted the Dairy School in collaboration with the UP Veterinary Faculty at Onderstepoort. The event was successfully completed with 180 attendees and 18 industry professionals who presented various dairy-relevant topics. This event served as an ideal opportunity to promote dairy and a dairy career to students, industry professionals, extension personnel and dairy managers.

The MPO Training Institute visited the Nico Malan High School in the Eastern Cape to give a presentation on the dairy occupational

qualification to students and their parents. The MPO Training Institute also visited farmers to discuss the MOU pertaining to mentorship of students in practical learning and work experience of the dairy occupational qualification on supervisor level.

The MPO Training Institute attended a MPO webinar on "Raw milk, Being a dairy ambassador and Legislation".

The MPO Training Institute had a meeting with Jompie Burger from the Dairy Standard Agency (DSA) to discuss cooperation, methodology and marketing of the Code of Practice for Dairy Producers project. The project aims to involve both milk buyers and dairy producers and will be rolled out after the Service Level Agreement between the MPO Training Institute and DSA is concluded.

The MPO Training Institute attended a meeting at the UP-dairy farm to discuss upgrading and the utilization of the farm for training and research.

DR MARK CHIMES PRESENTED AT STELLENBOSCH UNIVERSITY

Since 2016, Dr Mark Chimes has been involved in the projects of the Dairy Standard Agency in the capacity of dairy farm auditor, to assist the farmer to comply with animal welfare and biosecurity standards. He recently presented a lecture at the University of Stellenbosch.

Dr Lobke Steyn (Lecturer: Animal Sciences at the university) thanked him fittingly as follows: "Thank you for the lecture that you presented to our final year Animal Sciences students at Stellenbosch University. The information you shared on Biosecurity and Welfare in the Dairy Industry was valuable and well received. You not only presented the theoretical knowledge but also shared your own experiences, which was especially beneficial to our students who will be entering the 'real world' soon!

The support from the DSA in allowing you to give your time to this endeavour is greatly appreciated.

I trust that we will have many more of these lectures in the future!"

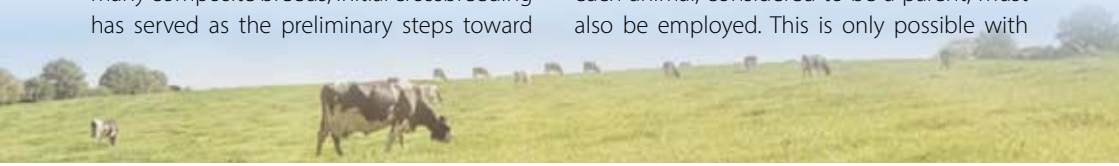
BREEDING "FIT FOR PURPOSE" DAIRY COWS

by Dr Bobbie van der Westhuizen, SA Studbook and Dr Heinz Meissner, Milk SA

The breeding objectives for a dairy farm should be to produce animals that are fit for what the specific farmer wants to accomplice and/or for the specific production system applied. This can be attained within different breeding approaches, one being crossbreeding.

Crossbreeding can be a powerful tool in the hands of a breeder who wishes to breed animals that are fit for purpose by exploiting the positive effects of heterosis, commonly known as "hybrid vigour". When using crossbreeding in a correct, well-planned manner, a breeder can breed animals with more predictable characteristics. This should clearly be distinguished from unplanned, and therefore unpredictable mixed breeding. Crossbreeding can serve as a mechanism to avoid the proliferation of certain undesirable recessive traits, which lead to genetic disorders and inbreeding depression that plague many pure-bred animals, especially in small populations. Crossbreeding can furthermore assist a breeder to develop an animal that combines genes or characteristics that are viewed as the best traits of two or more breeds within one individual. This is called complementarity. In the genesis of many composite breeds, initial crossbreeding has served as the preliminary steps toward developing these "new" breeds. It is, however, important to note that all the "new" developed breeds started with a well-constructed crossbreeding programme, followed by a focussed selection of progeny to ensure that the most desirable traits are combined in the following generations.

Thorough recording, using both pedigree and performance observations, is of utmost importance for any successful crossbreeding programme and therefore also during the development process of a "new" breed. These basic principles have been proven over many years and with a number of species. This is especially imperative where the cross-bred animals are destined to become parents for the second and subsequent generations. No successful breeding programme can succeed in the absence of realistic, solid breeding goals or breeding objectives. A breeding objective must be directly linked to the physical and management environment in which the dairy cow must produce and reproduce (i.e. fit for purpose). Crossbreeding must then aim to increase the adaptability of the herd. Only measurable traits of economic importance should be included in realistic breeding objectives and breeding goals. Thorough scrutiny of each animal, considered to be a parent, must also be employed. This is only possible with



Dr Bobbie van der Westhuizen
SA Studbook

Dr Heinz Meissner
Milk SA

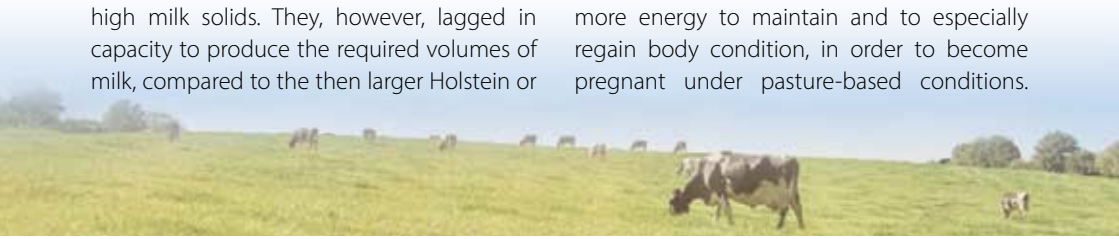
objective measurement and recording of the traits in the breeding goal. Without a clear executable breeding goal, and evaluation of each selection candidate, little success will come from a crossbreeding programme.

In practice, crossbreeding usually aims to develop that genetically "perfect" dairy cow herd, consisting of cows that are adapted to and produce sustainably in a certain environment. The production of these cows also most often fits a specific target market. The South African organized dairy industry is sympathetic to this line of thinking, especially in the pasture-based milk producing areas along the coast, but it is imperative to understand whether the arguments are appropriate.

Traditionally, most of the genetic bases of the herds in the pasture-based areas, have been Holstein and or Friesland. These genotypes were the preferred choice of dairy cows as they represent medium-sized cows with sufficient capacity to produce and reproduce efficiently under pasture-based environments. Jersey type cows were also prevalent in the herds, but they usually represent a more compact smaller type of cow, producing milk with high milk solids. They, however, lagged in capacity to produce the required volumes of milk, compared to the then larger Holstein or Friesland type of cows that have greater production capacity.

The needs of dairy farmers in the Tsitsikamma and Oyster Bay area who practice crossbreeding are the same. They want to breed cows that can become pregnant easily, that can walk long distances, last for at least 5 to 6 parities with strong udders, have low maintenance requirements (not weighing more than 480kg), show good constitution (meaning a cow with the capacity to graze effectively and sufficiently within time constraints), as well as produce adequate saleable kilograms of milk, i.e. they must be "fit for purpose"

The majority of the currently available Holstein genetics in South Africa are efficiently adapted to high energy input systems to ensure maximum milk production. Some of these genetics are not necessarily ideal for breeding the required cow needed for the pasture-based farmers. The main reasons are the obviously higher energy requirements of the larger high producing cows, resulting in cows that cannot walk long distances and also having udders that do not last as long as are required. Big stature, high maintenance cows simply need more energy to maintain and to especially regain body condition, in order to become pregnant under pasture-based conditions.



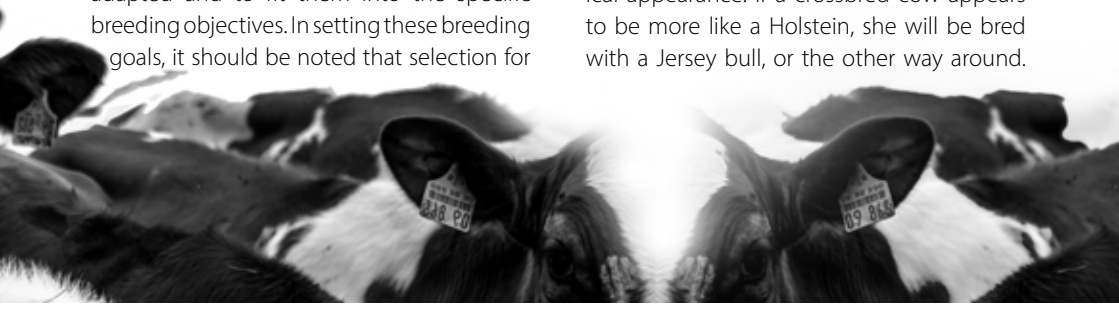
This in itself negates the purpose of pasture-based milk production systems.

Due to these factors, farmers with specific farming practices, have resorted to crossbreeding to breed the next generation cow: This often implies a cow that is smaller in stature and lighter in weight, has a better walking-ability and will become pregnant more easily. She should, however, still have a good udder and sufficient milk production capacity. This apparently is the reason why the Holstein-based herds were mainly crossbred with the Jersey.

In recent generations, through genetic selection, the Jersey breed in South Africa has been genetically altered to more efficiently meet the set requirements. The smaller, compact type Jersey cow has been genetically changed to a Jersey with more capacity to increase milk production, while maintaining its walking and reproduction ability. This is possibly why there is a lower occurrence of crossbreeding in the better adapted Jersey-based herds, in comparison to the Holstein-based herds. Available Jersey cows and crossbred types have become more acceptable and now suit pasture-based systems better.

This, however, does not mean that Holstein type genetics are not adaptable to pasture-based systems. The requirement would be to identify the ideal animals that are adapted and to fit them into the specific breeding objectives. In setting these breeding goals, it should be noted that selection for animals with very high energy needs will not be the suitable ones to perform economically in a low energy input system. Due to the availability of the global population and genetic diversity there are Holstein breeding animals that are sufficiently adapted to lower energy input pasture-based systems which could be utilized.

As implied above, crossbreeding can play a major role in animal and milk production, but it is difficult and complex to maintain over generations. Without proper pedigree, performance and reproductive measurements, no efficient crossbreeding programme will be sustainable over an extended period of time. Crossbreeding should be designed to gain maximum advantages from hybrid vigour and complementarity. Hybrid vigour is, however, a "once-off" advantage. This means that the effect of hybrid vigour is only present in the first generation in which it was generated. To continue having the benefit of hybrid vigour in the next generation, it needs to be regenerated for every following generation. This may sound easy and is therefore primarily practiced in the current crossbreeding systems in the pasture-based herds. Farmers alternate the sire breed in these programmes. If the sire of a crossbred cow is, for example, a Holstein, Jersey semen will be used on her and vice versa. Some farmers will also evaluate the cows based on their physical appearance. If a crossbred cow appears to be more like a Holstein, she will be bred with a Jersey bull, or the other way around.



This may happen independently of the cows' production and reproduction performance records. To base breeding decisions only on the physical appearance of the animal, while ignoring her genetic make-up for traits of economic importance, e.g. her production and reproduction ability, could lead to fundamental mistakes.

In the crossbreeding system, the first crosses (F1 generation) are very predictable and easy to implement. This is where the full value of heterosis is experienced and where a "balanced" cow can be bred. The problem or complexity, however, starts when the F1 cow has to serve as parent for the next generation.

In basic genetics, it is taught that any individual receives 50% of its genes from its sire and 50% from its dam. It is also taught that any individual is 25% related to each grandparent, therefore sharing the same percentage of genes with the grandparents. Similarly, the corresponding percentages for each of the great-grandparents is 12.5%. Furthermore, the assumption is that any individual animal shares 50% of its genes with its full-brothers and -sisters and 25% with half-brothers and half-sisters. However, due to so-called Mendelian Sampling, these assumptions are not always true. See Figure 1.

As shown in Figure 1, any given individual always receives 50% of its genes from its sire and 50% from its dam. Therefore, when starting with red and brown gene parents (as illustration of two breeds), the F1 generation is easily predictable. All calves will receive 50% of their genetic make-up from the red parent and 50% of its genetic merit from the brown parent. But, as soon as breeding commences with the F2 and later generation cows, the predictability of their progeny's genetic potential becomes much more complex, simply because the genetic make-up of these animals is not easily known (due to Mendelian Sampling). It could be that the red animal in this example is a Jersey bull mated to a brown (Holstein) cow. When a farmer then breeds the F1 cows, for example, with a Holstein bull (green animal), the F2 generation could be any combination, from 50% Jersey to 100% Holstein. As shown in Figure 1, the last calf born as a F2 cow, received 50% from the green sire and 50% of the F1 dam. But by chance, it only inherited the full 50% of genes that her F1 dam has inherited from her brown dam. Therefore, this F2 cow is genetically 100% Holstein, although her grandsire is a Jersey bull. The general assumption that an individual is 25% related to its grandparents is therefore not always true. An individual could

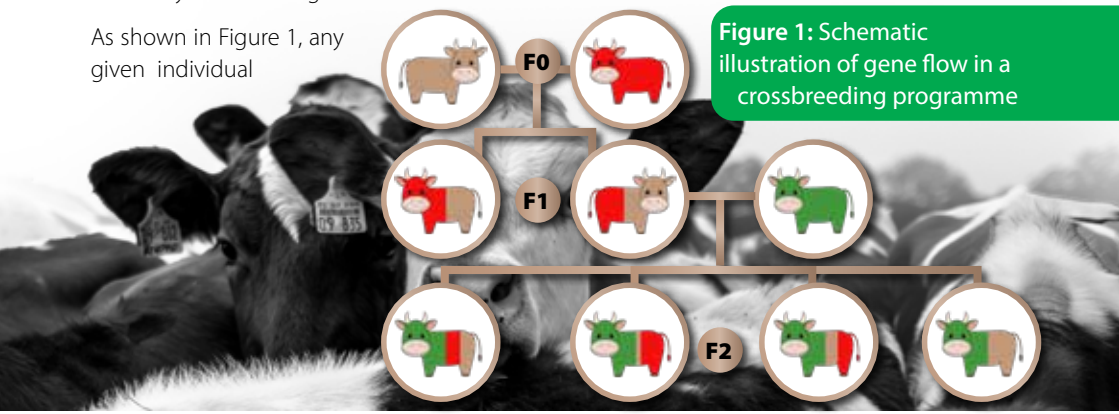


Figure 1: Schematic illustration of gene flow in a crossbreeding programme

be potentially unrelated to a specific grandparent or to its grandchild. That is the reason why crossbreeding programmes often fail in the long run in the absence of proper animal recording and a sound breeding objective.

There are only two ways to determine how related an animal really is to its ancestors, progeny or other relatives, and to know which combination of genes the animal inherited. The first is through proper pedigree and performance animal recording and the inclusion thereof in a genetic evaluation programme. The second is by means of genomic testing of individual animals and the inclusion of the genomic information in the genetic evaluation programme in which the animals and their relatives, with performance recorded data, are included.

Globally, especially now in the genomic era, more emphasis is placed on animal recording and especially milk recording. In South Africa this is recognised, but the majority of recording is by farm-based automatic milk recording through dedicated computer software, and less so by official government-driven animal and milk recording.

The arguments above serve to conclude that the South African pasture dairy farmer does not necessarily need a "new" breed to be profitable or to be sustainable. The breeding animals with the required genetic potential exist as pure-bred animals in the Holstein, Friesland and Jersey populations.

Locally available Jersey cattle are now generally robust enough in stature and with sufficient capacity to breed the required cow to suit these environments. There is also sufficient genetic variation in the South African Jersey population to fit the different management systems, provided that the correct breeding objective and goals are applied to identify the required genotypes.

There are also suitable Holstein and Friesland pure-bred animals (genetics) available for the pasture-based environments. Unfortunately, many of the mainstream Holstein AI bulls marketed among pasture-based dairy farmers are selected based on a totally different breeding objective and environmental circumstances which are inappropriate. That is why Holstein type cows, over generations, have become too big in stature for the pasture-based production systems, and therefore unsuitable. Rather, the approach should be to identify the best local and international Holstein and Friesland genotypes with the required characteristics and adaptation capabilities for the pasture-based environment.

"Overall, whatever the choice, animal welfare and immune-resiliency should always be part of the selection objectives here and elsewhere."

Long-term sustainability of dairy production on pastures, should, among other aspects, focus on selecting animals based on appropriate breeding objectives and goals favouring the most efficient producers and producing milk sought-after by milk buyers. One should also recognise that even within pasture-based systems environmental and feeding differences occur, and management objectives differ, which require farm-based (fit for purpose) choices. Overall, whatever the choice, animal welfare and immune-resiliency should always be part of the selection objectives here and elsewhere. ME.

Fanie Ferreira
is the new CEO of the Milk Producers' Organisation

Fanie Ferreira was appointed as CEO of MPO with effect from 1 October, after he acted in this position for quite a few months. Fanie is also a Milk SA director. In his new role, we look forward to working more closely with him and the MPO team. Congratulations!

Dr Colin Ohlhoff
appointed as Deputy Chair of IDF Standing Committee on Environment

In an e-mail from Dr María Sánchez Mainar (The IDF Science and Standards Programme Manager), she advised that Dr Colin Ohlhoff was at the September meeting elected as Deputy Chair of the IDF Standing Committee on Environment.

Colin is a molecular biologist (PhD) by training with a research background in the subject fields of microbiology, genetics and biochemistry. He has been involved in the dairy industry for the past nine years and serves as Environmental Officer for Fair Cape Dairies based in the Western Cape Province of South Africa, dealing with all matters linked to sustainability and environmental impact minimization. Colin also works as a Project Manager on environmental sustainability with the Dairy Research and Development Programme of Milk South Africa and has represented South Africa on the Standing Committee for the Environment of the International Dairy Federation for the past four years.

The SA dairy industry can be very proud of Colin's appointment, which is the result of his active and passionate participation in the environmental affairs of Milk SA and IDF for quite some time.

Nejahmogul revoked as assignee by the Minister

In January 2017, "Nejahmogul Technologies and Agricultural Services was designated by the Minister of Agriculture, Forestry and Fisheries (DAFF) in terms of Section 2(3)(a) of the Agricultural Product Standards Act, as Assignee to enforce Regulation 260 and Regulation 78". Due to irregularities with Nejahmogul's appointment, Milk SA joined Woodlands Dairy in an application to the high Court, with the first respondent being the Minister of Agriculture, Forestry and Fisheries, the second respondent the Executive Officer: Agricultural Product Standards Act and the third respondent, the Assignee. Early in 2021, the Court handed down judgment in favour of the applicants and on 16 September 2022, Nejahmogul and Impumelelo were revoked as assignees by the Minister for the following reasons, as stated in the Government Notice:

"The said assignees failed to –

- (1) finalize the revision, consultation and publication of their inspection fees as per court judgements which were handed down by the North Gauteng High Court on 22 February 2021 and 14 May 2021 respectively; and
- (2) exercise their powers and perform their duties in order to apply sections 3(1)(a) and (b), 3A(1), 4(1)(a), 7 and 8 of the Act in relation to the regulated products for which they were designated."

The Department of Agriculture, Land Reform and Rural Development advised as follows: "Please note that the inspection of the affected regulated products will be carried out by inspectors of the Directorate: Inspection Services within the Department of Agriculture, Land Reform and Rural Development and will persist until advised otherwise."

Agricultural Products Amendment Bill

An Agricultural Products Amendment Bill - currently serving before the Portfolio Committee - was drafted partly to improve the situation regarding assignees. It was reported to the Milk SA Board by Mr Alwyn Kraamwinkel (director of Milk SA) that the bill had defined shortcomings; that Milk SA's Dairy Regulations and Standards Project had consulted amongst others, with the Consumer Goods Council of South Africa (CGCSA), as well as the fruit and juice organizations; and that comments on the draft amendment bill had been submitted on 30 September 2022.

Mr Kraamwinkel said the way forward was firstly to contribute to the process of ensuring that the amendment bill was correct; and that as soon as regulations were issued in terms of the Agricultural Product Standards Act regarding assignees, there should be further interaction.

Latest news from the joint meeting of the IDF Standing Committee on Marketing

"Regarding Plant based beverages, the Action Team decided to go to phase 2. In 2017 (five years ago) the Action Team looked at plant based beverages (milk) in terms of nutrition, processing, and environment. A communication was developed with 18 targets. At the next International Milk Promotion meeting in Ireland (June 2023) it will be decided how to track implementation of phase 1 communication plan by different countries.

Further work involves understanding differences between real dairy products and the alternatives i.e. plant based products. (Milk, cheese and yoghurt, cream and butter).

For the next communication framework (phase 2), a list of products will be identified that will be compared in terms of nutrition, environment and processing. A second communication framework, similar to that for milk, will be developed but will focus on all dairy products (yoghurt, cheese, cream and butter). Lab-produced products will be addressed in phase 3."

Latest news from the joint meeting of the IDF Standing Committees on Dairy Education & Promotion and Marketing

Euromonitor presented a report about market trends and members expressed deep concern about the use of the term Plant-Based Dairy. Disconformity was expressed to the consultant that did the report. There was consensus that educating the consumer with the help of health authorities is a must and that attention should be paid to synthetic products. It was confirmed that the Action Team on Plant-Based Products will continue its work and launch the second phase of the study comparing Dairy products with PBP.

Also, the Action Team on Resilience will continue its work to identify solutions that seem to be working in some countries as well as Ideas for future challenges. Member countries were asked to supply resources.

South Africa's primary representative on the Standing Committee: Marketing is Christine Leighton.

Source: IDF Team Update to National Committees – October 2022

The global impact of cattle:
A socio-economic, food security and environmental perspective

A scientific paper with the above title was recently submitted by the authors for evaluation and acceptance by an international institution, before it can be published. However, Dr Meissner provided Milk SA with an adjusted version for distribution in the dairy industry, which appears on the Milk SA website. The authors are Dr Heinz Meissner (Milk SA), Dr James Blignaut & Dr Hendrik Smith (Asset Research) and Dr Linde Du Toit (University of Pretoria).

The following introduction of the paper might capture your attention for further reading on the website www.milksa.co.za/research :

"Currently there is an intense debate between those against the use and expansion of animal-based protein, and those not unduly concerned in the use of such to combat global hunger. Typical concerns against animal-based protein relate to rising greenhouse gas (GHG) emissions, land and resource use, perceived negative effects due to animal welfare, antimicrobial resistance (AMR), zoonosis, environmental concerns and human health.

These concerns are raised at a time when it has been projected that food requirements will increase by 50–70% towards 2050 and, from a livestock perspective, at least a doubling in demand for meat and even more for dairy. These anticipated increases are due to the rise in the global population and the demand for animal-based protein increasing at the expense of staple foods as per capita income in transition and developing countries increase.

The livestock sector is also well-positioned for this challenge since it occupies approximately 30% of the ice-free terrestrial surface of the earth and 80% of agricultural land. In

LATEST NEWS

Latest news from the IDF Standing Committee on Animal Health and Welfare

"Two new factsheets on reproductive technologies for dairy cattle, on sexed semen and gene editing, were presented and received comments. A third fact sheet on keeping calves in pairs, prepared and approved by the calf management action team from birth to weaning, was reviewed.

The Action Team working on sensors has started work on metabolic diseases.

A new issue of Animal Health Report will be published in autumn 2022. We have a new editor from Norway, Håvard Norstebo. This issue will focus on infectious diseases.

A new work item on Guidelines for a novel approach to on-farm milk quality management was presented to the committee members. It is about helping farmers with better problem-solving. The approach is inspired by

2010, it contributed more than 40% of the global value of agricultural output, employed 1.3 billion people and supported 600 million smallholder farmers in transition and developing countries.

While most people recognise the importance of dealing with animal welfare, AMR and zoonosis, many believe that the concerns raised above can be either offset or that the concerns are misplaced. They are of the opinion that GHG emissions can be limited by production efficiency, dietary and supplementary means, carbon sequestration, grazing management and other means.

They also do not regard animal needs as being in direct competition with human foods as herbivore livestock primarily use materials which cannot be digested by man and often to that effect occupy spaces which cannot be cultivated. In addition, they regard animal-based foods as vital to human development because of nutrient density and high bioavailability and do not subscribe to the notion that animal-based foods are a threat to human health.

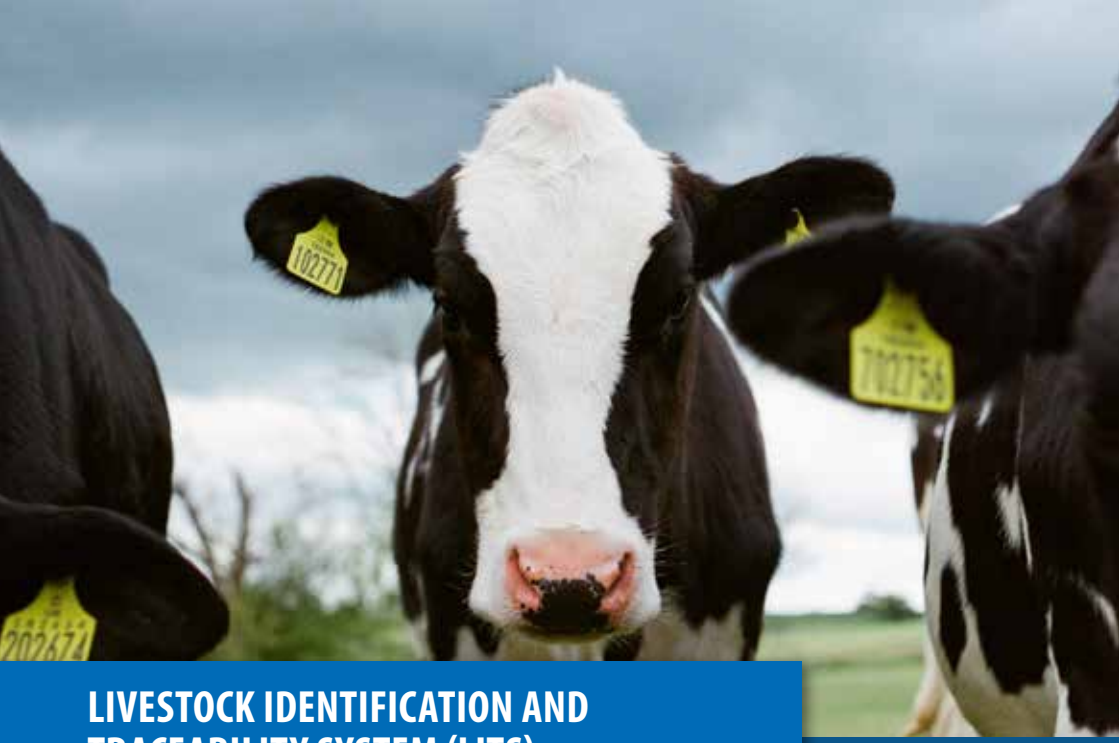
Given the intense debate, and the importance thereof, concerning the matters highlighted above and others such as social, cultural, economic and political impacts of livestock production, the question is whether an increased production for animal-based protein is attainable without negative consequences. Therefore, in this paper we have focussed on beef and dairy cattle, reviewing some of the most recent research on the contribution of cattle to the economy, social wellbeing, and food security as well as environmental concerns."

the work with sensor-based mastitis management and now metabolic disease management. The project looks at the objectives, values, motivation and available material for working with milk quality as an interdisciplinary approach. They will also examine what has been published by the NMC and other stakeholders. They will identify the most important areas and risk factors for milk quality and udder health.

The Dutch national committee want to extend its mid-year annual event to SCAHW members for a SCAHW meeting. The venue would be the Royal Animal Health Service of the DG in Deventer in the Netherlands and the timing is mid-April."

South Africa's primary representative on this standing committee is Dr Mark Chimes, with co-representatives Jompie Burger and Dr Inge-Marie Petzer.

Source: IDF Team Update to National Committees – October 2022



LIVESTOCK IDENTIFICATION AND TRACEABILITY SYSTEM (LITS) APPROVED BY MINISTER DIDIZA

Mr Willie Clack, Chairman of the LITS Committee, announced that the LITS system would open for registration on 17 October 2022. Amongst others, the system aims to:

- Improve animal disease programmes
- Reduce distortion of animal marketing after disease outbreaks
- Comply with sanitary requirements of export markets
- Fast track access to accurate information to solve animal theft cases
- Improve the quality of animal data
- Improve reliability of genetic selection programmes

All role-players in the primary value chain will be able to register on the system. In phase one, commercial producers will register, followed by all stock owners per province (phase 2) and all other role-players in the value chain (phase 3).

It is envisaged to complete the registration of stock owners in January 2023, followed by the registration of individual animals. It will initially not be compulsory to register. The biggest advantage would be to monitor the movement of animals from neighbouring countries and to prevent animal theft.

Acknowledgement: Veeplaas