



Co-ordination, support and promotion of needs-driven research & development in the South African dairy industry.

(PRJ-0368-2024)

Dr Heinz Meissner

Quarter 1 2024/2024 (January 2024 till March 2024)

Project goals

Goal 1 - To limit research fragmentation and promote and initiate cooperation between R&D capacities towards achieving the strategic direction of the industry

Achievements

Negotiations with the Technology Innovation Agency (TIA) to facilitate cooperation and co-funding have continued. A business plan will now be compiled. Co-funding by the TIA appears promising and should increase the available budget for R & D in 2024 and 2025 substantially, if realized. Negotiations pursued the possibility that the TIA fund the particular projects of interest to the tune of 80% of direct project cost.

A further development in terms of supporting the R & D project is that support may come from the private sector in the Dairy Industry and their suppliers. Preliminary discussions indicate that relevant companies have R & D funds which could support generic and public domain projects as long as the companies themselves also benefit from the outcomes. Some companies have shown interest in particular projects, which are being followed up.

For general and environmental sustainability, in particular, it has become critical to effectively manage slurry from dairy farms. Due to the many complexities related to manure management, it is important to regard the proper management thereof as an interactive process. A large project proposal has been designed, involving the Engineering Faculty at Stellenbosch University, Trace and Save and Asset Research to trace N, P and K intake, disposal on pasture and waterways through the manure and irrigation systems, and to understand the implications thereof plus that of other polluters, in order to find solutions for excess, and to see if the N, P, and K cannot be economically utilised instead.

The GHG model (called DESTiny) by Asset Research to calculate emissions and sequestration on-farm has been completed and can be accessed from <https://assetresearch.org.za/on-farm-carbon-capture-and-storage-capacity/>. This will assist farmers to calculate the farm's carbon footprint, water use and influence on farm economy. This should also assist in improving the dairy sector's contribution to SA's IPCC emission reporting. In concert, a model (called DIEET) has also been completed where the carbon footprint, nutritional value, potential for underfeeding relief, and economical production of milk has been compared with soy, almond and oat beverages. Milk came out very favourable in all categories.

No Non-achievements / underperformance has been reported

Goal 2 - To guide the R&D program by means of effective structural and R & D Committee arrangements, initiating and promoting research initiatives, research project construction and evaluation, and fund sourcing

Achievements

A MANCOM Meeting was held on 27 February and a DRDC Meeting on 15 March 2024. The Project Manager also participates in the Coordinating Committee under Mr Kraamwinkel as Chair, but outcomes of Meetings (one held on 20 March) are reported elsewhere.

Prominent items dealt with at the MANCOM and DRDC Meetings include: (1) Milk processors and farmers were very much in favour of establishing a Milk SA R&D office in Humansdorp, but agreed that such an office should only follow after establishment of a DSA laboratory in Humansdorp. The feasibility of establishing a laboratory in the area will now be pursued by Mr Burger and Dr Meissner. (2) Dr Chimes represents the SAVA on the NAHF, but due to his expertise, the NAHF has been approached by Mr Fouché in order to establish whether he cannot also represent Milk SA. This is also important considering the special attention given to Brucellosis at the NAHF. Further regarding Brucellosis, the stance of the DRDC is that where initial blood tests yielded negative results for two years, the blood tests could be replaced by Milk Ring Tests and, abattoir tests on culled cows should be performed to declare an area free from Brucellosis. Dr Chimes was requested to propose this procedure to the NAHF, and in addition, to request that TB be included in the Brucellosis Committee. Also, further regarding Brucellosis, the DSA laboratory is interacting with the DALRRD and is well advanced in the process of doing Brucellosis tests. (3) Dr. Ohlhoff has been assigned to do a situation analysis with regard to the trading of carbon credits in general, as well as more specifically, in the international and local dairy industries. (4) Dr. Chimes' report titled "Implementing measures to improve the welfare of dairy calves in South Africa" was incorporated in the IDF Animal Health Report. (5) Drs. Ohlhoff and Meissner, and Mr. Fouché will discuss the Dairy Sustainability Framework membership of Milk SA with Mr. Brian Lindsay of the DSF, in order to understand whether membership should change. (6) The authors of "A carbon footprint assessment for pasture-based dairy farming systems in South Africa" will be requested to write a one-page summary of their paper for publication in the Milk Essay of April 2024 (they have undertaken to do so). (7) Dr. Meissner suggested that, since there were substantial differences of opinion on the issue of pasture nitrogen fertilization, soil carbon etc., a workshop be held to have a common understanding of these matters. (8) Dr. Chimes said that the ideal for disease control would be to build a picture of where animal diseases occurred over the whole country. To do this, it would have to be established to which abattoir each dairy farmer sent his cull cows so that abattoir data could indicate the diseases in the area and how serious it was. (9) Dr Ohlhoff said that there was a Consumer Goods Council of South Africa working group who met every two months to provide an opportunity to report on food loss and waste data obtained from the dairy industry. This information was also incorporated into the sustainability document of Drs. Meissner and Ohlhoff. (10) As sufficient expertise is available on the DRDC, and bearing in mind that the DRDC has access to key opinion leaders, it is recommended that the DRF will not meet anymore, but Dr Meissner will provide them with progress in the R & D programme.

For funding source developments see paragraph 2 under Goal 1.

No Non-achievements / underperformance has been reported

Goal 3 - To accumulate and publish existing domestic and international scientific knowledge of applicable and practical value to enhance the industry

Achievements

THE RESEARCH COLUMN and DAIRY R & D IN SA: The target of respectively scientific articles sourced from the international literature and SA scientific articles to be entered on the website is two per month, i.e. six for the quarter. The target was met. Some of the articles are published in the Dairy Mail under the regular Research Column of the Project Manager and others in the Milk Essay.

The January to March 2024 list for THE RESEARCH COLUMN is:

- Machine learning for the prediction of subclinical mastitis in cows milked in automatic milking system.
- Perspective: How to address the root cause of milk fat depression in dairy cattle.
- Replacement of soybean meal with canola improves short-term milk yield and nitrogen-use efficiency in high-producing, early-lactation Holstein cows.
- Effects of adding natural additives to whole milk on performance, faecal, and blood parameters in suckling Holstein calves.
- Breeding for heat tolerance.
- Echotextural and ultrasonic detection of sub-clinical and clinical mastitis.

The January to March 2024 list for DAIRY R & D IN SA is:

- TRACE MINERAL STATUS OF DAIRY COWS IN THE TSITSIKAMMA
- MODEL TO CALCULATE THE ENVIRONMENTAL, NUTRITIONAL AND ECONOMIC STATUS OF MILK AND PLANT-BASED BEVERAGES.
- WHICH BREED IS MORE SUITABLE FOR PASTURE SYSTEMS – HOLSTEIN OR JERSEY?
- TOOLS TO CALCULATE THE ENVIRONMENTAL FOOTPRINT OF DAIRY FARMS.
- DO WE PAY SUFFICIENT ATTENTION TO FERTILITY?
- PROBLEMS FACED BY DAIRY SMALL-SCALE FARMERS.

The topics of bullets 1, 2 and 4 provide results of projects funded by Milk SA.

In addition, the outcomes of the DIEET model, comparing the environmental footprint relative to the nutritional value of milk with soy, oat and almond beverages was summarized in the January 2024 edition of the Milk Essay, the title being: **THE MODEL TO CALCULATE THE ENVIRONMENTAL, NUTRITIONAL AND ECONOMIC STATUS OF MILK AND PLANT-BASED BEVERAGES ESTABLISHED.**

No Non-achievements / underperformance has been reported

Goal 4 - To advise and assist with national and international managerial, strategic and position publications on any matters which may support the strategic direction of the industry

Achievements

The sustainability document: "Sustainability in the SA Dairy Industry: A Status and Progress Report", which is regularly updated, provides strategic and position guidance to the Board and officials. The next

scheduled update is April 2024.

No Non-achievements / underperformance has been reported

Goal 5 - To support the dairy industry with R & D and advice on matters affecting sustainability, such as environmental – GHG reduction, carbon sequestration, water use efficiency, waste treatment, ecosystem and biodiversity protection – and animal welfare. To that effect, also oversee the Animal Health and Welfare and Environment programmes

Achievements

The sustainability document mentioned under Goal 4 is compiled in line with the UN's 2030 Development Goals with much emphasis on GHG reduction, water use, waste reduction, ecosystem and biodiversity protection, and animal care. The sustainability document when updated shows the progress made in R & D and supporting issues which are of relevance to this goal.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MSA Meissner_PRJ-0368_Q1 Report_2024_Expenditure.docx
Unnecessary spending during period	No

Popular Report

[MSA Meissner_PRJ-0368_Q1 Report_2024_Popular Report.docx](#)

Additional documentation

[MSA Summary of 2023 Annual Progress Report of R D Project_.docx](#)

Statement

Levy funds were applied only for the purposes stated in the contract	Yes
Levy funds were applied in an appropriate and accountable manner	Yes
Sufficient management and internal control systems were in place to adequately control the project and accurately account for the project expenditure	Yes
The information provided in the report is correct	Yes