



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

(PRJ-0271-2020)

Heinz Meissner

Year 2020 (January 2020 till December 2020)

Project goals

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

Achievements

We continued with our quest to seek co-operation and outside funding. The Technology Innovation Agency (TIA) indicated that they would be interested in supporting a comprehensive programme which could ensure sustainability and profitability of the Dairy Industry. As a result a proposal was presented to the TIA: MILK SA APPLICATION TO TIA FOR FUNDING OF PROJECT: FEB 2020. TIA officials then indicated that they will consider projects with a tangible outcome in the form of a product, process or guidelines which were subsequently put together by the author. Following further telephonic discussions during lockdown in April 2020, they were willing to consider a R5 million contribution to the Milk SA R & D Programme if Milk SA also allocate the same amount. The TIA officials undertook to take the proposals to their principals but were optimistic that their proposal will be supported. Finalization of the project due to the pandemic has however been delayed. The most recent feedback from the TIA is still positive and one would hope that co-operation and funding will materialize soon in 2021.

In terms of co-operation with other R & D capacities, an agreement was signed with SA STUD BOOK to do analyses on software programs of automatic milking systems to enable more information to be retrieved and especially to facilitate time trends, and in association with Dr Muller of the US, to develop efficiency parameters which can be incorporated. This initiative could culminate into a dashboard and APP development. However, the expected projects have been cancelled since some DRDC members had reservations. Following further discussions with DRDC members and the fact that we already have data from farmers willing to participate on the system, the project again received the green light. The outcomes are expected early in 2021.

Further projects approved during the fourth quarter with co-operation between different institutions (leading institution) include:

- * Practical implementation of SANS 1694 with DSA audit (DSA)
- * A systems dynamic approach to incorporate environmental indicators into economic outcomes of dairy production systems in SA (Asset Research)
- * Seasonal effect on dairy cow trace mineral status in the Tsitsikamma, Eastern Cape (Chemunique)
- * Identification of *Streptococcus uberis* strains and biofilm expression of milk samples in dairy herds (UP-Onderstepoort)
- * The effect of Ca/P ratio in Jersey cows grazing kikuyu pasture on milk flocculation and milk composition (WCDA)
- * Investigation of alternative precision recording systems for collection of novel pheromones in the

dairy industry (UP)

No Non-achievements / underperformance has been reported

Goal 2 - To guide the R&D program by means of effective structural arrangements, administration and fund sourcing

Achievements

The budget for the R & D Programme with support from the TIA as discussed under Goal 1 will be R10 million for 2021 if the agreement realizes as anticipated. The allocated budget to the Milk SA Programme for 2020 is R3.65 million, but with funds carried over from 2019 and non-delivery on projects due to the lockdown, the R & D Programme should have sufficient funds to meet the R5 million obligation to match the R5 million of the TIA as well as having sufficient funds to support the new projects that will commence in 2021. The TIA officials indicated that they will honour the R5 million agreement in years 2021 and 2022 as well, but since the 4-year statutory levy cycle ends at the end of 2021, the actual fund allocation will be discussed again after the new levy allocation is received.

The document written by the author and Dr Colin Ohlhoff with the title: 'Approach and Progress to Ensure Sustainability in the SA Dairy Industry', was approved and supported by the Milk SA Board. It has been put on the website and pieces published.

Following a robust and comprehensive evaluation procedure, the new projects mentioned under Goal 1 were approved by the DRF and the DRDC.

Priorities for further research in the Milk Flocculation program were followed up and one of the new project proposals will address the relationship of the Ca – P ratio in the cow's diet with milk instability. This will be done at the Outeniqua Research Station of the WCDA. The project is listed under Goal 1 as one of the new projects.

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: The target of scientific articles sourced from the international literature to be entered on the website is two per month, that is 24 for the year. The target was met. One article per month, i.e. 12 per year, was also published in The Dairy Mail under the regular 'The Research Column' of the author.

DAIRY R & D IN SA: The target of South African scientific articles sourced to be entered on the website is also two per month, i.e. 24 for the year. The target was met.

The number of contributions to the Research Column and Dairy R & D in SA should be read on the website, as they are too many to be listed here or attached to the annual report

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. Advice may also imply representing the industry on government and non-government bodies

Achievements

As indicated under Goal 2, the author and Dr Colin Ohlhoff have compiled a document intended to provide a record of and guidance to the Dairy Industry with respect to sustainability. The title is: **Sustainability in the SA dairy Industry: A Status and Progress Report**. It contains sections on greenhouse gas mitigation, soil health, responsible water use, waste management, biodiversity, market development, rural economies, working conditions, product quality and safety, and animal care. The contents of the document are flexible and will be altered regularly as new information becomes available. The document has been approved by the Milk SA Board in its final format and is available in Pdf from the Milk SA website.

The application document to the TIA mentioned under Goal 1 is a comprehensive document providing an overview and insight into all aspects of the Dairy Industry. Amongst others, it contains sections on: Strategic context: Commercial Outputs and Economic Value; Current status of the Dairy Industry: Achievements; Strategic Partnerships; Dairy sustainability: vision; mission; strategic objectives; impact analyses; Situation analysis: International landscape; South African landscape; opportunities and challenges; Implementation, Risk analysis; Route to market etc.

Input and suggestions were made into the International document: **Transforming Global Agriculture in Feeding the World and Protecting the Planet**, compiled by Dr Peer Ederer for the FAO.

The article originally written by the author in July 2019, titled: **Are all the arguments against livestock justifiable?**, was updated and distributed because of general interest in the industry.

No Non-achievements / underperformance has been reported

Goal 5 - To support the dairy sector with R & D and advice on matters affecting sustainability. These include: Environmental – greenhouse gas reduction, carbon sequestration & storage, water and pasture fertilization efficiencies, waste and effluent reduction and treatment, and ecosystem and biodiversity protection; Animal welfare – the internationally acknowledged five freedoms (freedom from: a. thirst, hunger & malnutrition; b. discomfort; c. pain, injury & disease; d. to express normal behaviour, and e. fear & distress) are the point of departure

Achievements

The author has focused on writing or sourcing articles with an environmental sustainability theme, including GHG reduction, carbon sequestration, water use efficiency and waste management. Some examples include:

- * Is N₂O now the major GHG concern in agriculture?
- * Conservation agriculture.
- * Progress on R & D and other developments in sustainability issues
- * Nitrous oxide on pastures grazed by dairy cows.

Research projects which were initiated in collaboration with different institutions in this regard include:

- Strategies to reduce N excretion and emissions from dairy farming.
- Buffer zones for wetlands and rivers on dairy farms.
- Impact of fertilizer application rates on soil health and pasture yield

- A systems dynamic approach to incorporate environmental indicators into economic outcomes of dairy production systems in SA.

These and other projects are described in a status report (January 2021) which is attached.

With regard to animal welfare, the author is part of the discussion and planning group which culminated in the project by the DSA: "Practical implementation of SANS 1694 with DSA audit". Substantial attention to animal welfare was also given in the document: **Sustainability in the SA dairy industry: A Status and Progress Report**

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MSA Meissner_PRJ-0271_Annual Report_2020_Expenditure.docx
Unnecessary spending during period	No

Popular Report

[MSA Meissner_PRJ-0271_Annual Report_2020_Popular Report.docx](#)

Additional documentation

[MSA R & D Projects - Report & Status January 2021.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