



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

(PRJ-0242-2019)

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Quarter 3 2019 (July 2019 till September 2019)

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

As mentioned in the second quarter progress report we were not successful with our applications to outside funding sources for the project proposals: CLIMATE AND ECO-RESILIENCE OF DAIRY PRODUCTION, AND BIOCONTROL OF TWO DISEASES AFFECTING DAIRY CATTLE. Apart from the positive financial implications to our R & D Programme, the advantage would have been the co-operation between several institutions which is a major goal. We therefore continue with our quest to seek co-operation and outside funding. To that effect we have had a Meeting with the Technology Innovation Agency (TIA) on 9 September to follow up on the next phase in the Genomics Programme. The TIA in a previous Meeting has indicated that they would be interested in supporting a more comprehensive programme which could ensure sustainability and profitability of the Dairy Industry. The resulting proposal which was presented to them was SUSTAINABILITY/STEWARDSHIP OF THE SOUTH AFRICAN DAIRY INDUSTRY, see attachment. All needs included in the unsuccessful applications above were included in this proposal. The next step is now to develop the application according to the specifications of the TIA. Although unsuccessful in our application for outside funding for A GENOMIC APPROACH FOR IMPROVEMENT OF WELFARE TRAITS IN DAIRY CATTLE, the project can continue with Phase 1 TIA funding and is performed by Ms Robyn Scheepers as a PhD study at UP.

A further demonstration to illustrate our quest for co-operation in R & D are examples in new projects in the process of registration: (1) The project "**The impact of fertiliser application rates on soil health and pasture yield in the Eastern Cape, South Africa**" is led by US and run in conjunction with WCDA (Outeniqua), Trace and Save (Humansdorp) and FARMsystem Engineers, Osnabrück, Germany; (2) "Buffer zones for wetlands and rivers in the dairy sector – A case study to determine best practice guidelines for improved wetland and river management" is led by the Institute of Natural Resources (INR), with WWF-SA and Confluent Environmental/NMU.

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

As mentioned under Goal 1, the TIA submission is still in the development phase, but a comparatively large budget is envisaged. The application and progress report procedures have been revisited and adapted to facilitate evaluation.

A MANCOM Meeting was held on 13 August. The primary purpose was to discuss new R & D project proposals which were tabled at the DRC Meeting at the Large Herd Conference in June. A number were supported and recommended to the DRDC Meeting of 29 August. Being accepted, these proposals are now being developed for online and contract application. A further important activity was the preparation, discussion and approval of the submission document to the TIA as discussed under Goal 1: SUSTAINABILITY/STEWARDSHIP OF THE SOUTH AFRICAN DAIRY INDUSTRY, which is attached.

In terms of the mandate of R & D management, the author attended the GSSA Congress in Upington 2-5 July. This congress has a large section on planted pastures which is in the interest of the Dairy Industry and where results applicable to and some funded by the Milk SA R & D Programme are reported. The author also gave input to the planning of a SASDT seminar on sustainability and attended the seminar on 16 July. This culminated further into the author being requested to present a talk to the SAAFost Congress on 4 September to present our goal and work on sustainability. The title of the talk was : "Dairy Industry Sustainability: What we do at Farm Level".

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 six for the quarter. The target was met. Some of the articles were also published in The Dairy Mail under the regular research column of the author. The topics covered as reflected in the titles of the papers are:

- 1. Heritability of methane production and genetic correlations with milk yield and body weight in Holstein-Friesian dairy cows.*
- 2. Intravenous calcium infusion in a calving protocol disrupts calcium homeostasis compared with an oral calcium supplement.*
- 3. Invited Review: Culling: Nomenclature, Definitions, and Recommendations.*
- 4. Effects of replacing buttermilk with yogurt acid whey in ranch dressing.*
- 5. Grain source and chromium supplementation: Effects on health, metabolic status, and glucose-insulin kinetics in Holstein heifer calves.*
- 6. Antimicrobial and antidiabetic potential of symbiotic fermented milk: A functional dairy product.*

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. six per quarter. The target was met. The following themes were covered:

- HAVE WE BENEFITTED FROM THE DAIRY GENOMICS PROGRAM?
- MILK PRODUCTION AND CONSUMPTION TRENDS IN EASTERN CAPE COMMUNITIES.
- BULK TANK TESTING CAN ADD VALUE TO UDDER HEALTH TESTING AND SAFE MILK.

- d. MASTITIS PATHOGEN DISTRIBUTION IN SA: 2013 COMPARED WITH 2008.
- e. CAN SELENIUM BE OF VALUE TO INCREASING IMMUNITY IN THE COW?
- f. IS THERE A RELATIONSHIP BETWEEN COW CONDITION AND COLOSTRUM EFFICACY?

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 a follow-up to the discussion on the EAT_LANCET report and the presentation given by the author: CAN THE GLOBE FUNCTION WITHOUT LIVESTOCK?, discussed in the second quarter report, he also put together an article for RuVASA and the Landbouweekblad, since the topic seems to be in demand. The title of the Landbouweekblad article, which is attached, is "Is 'n aarde sonder vee verkieslik en haalbaar?". With some arguments associated with this topic, the WWF recently published a report with the title: "Agri-food systems: Facts and Futures - How South Africa can produce more by 2050". Due to some controversial and inaccurate issues which reflect on livestock, the author thought it necessary to comment comprehensively. The comment paper is rather lengthy and therefore not attached, but can be obtained from the author. Because of knowledge and experience in the discipline of environmental issues, the author has become involved with the Water Stewardship programme of the MPO - WWF. In this context he was also one of the reviewers for the Water Stewardship Award to be presented at the Livestock Expo at Sandringham on 9 October. In terms of rewards, he was also one of the reviewers for the 2019 TDM Innovation Awards.

As mentioned in the second quarter report, the author together with a number of scientists, sustainability supporting companies, value chain companies and investment/financial institutions is pursuing the possibility of allocating a monetary value to conservation (regenerative) farming and soil health, in addition to linking this with the principle of providing healthy and quality food products. In various meetings with environmental attorneys, bank financial authorities and economists who provided guidance, a company IntegraFood (e-Commerce trading platform), supported by IntegraTrust and IntegraLink (a non-profit company), is in the process of being formed to drive the initiative and attract investors in order to provide funds to farmers who want to participate. Farmers will be evaluated in terms of a scoring system. One of the slogans of the initiative is: "Healthy soils provide healthy food". The initiative also complements the theme of sustainability of the Dairy Industry and the principles embedded in 'Planet, People and Profitability', whereas the scoring system of the MPO-WWF Water Stewardship Program may well prove effective for dairy farmers to latch onto the Integra system.

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

One of the actions is the research, extension and training programme which we seek to obtain funding from the TIA as discussed under Goal 1, attached with the title:

SUSTAINABILITY/STEWARDSHIP OF THE SOUTH AFRICAN DAIRY INDUSTRY.

Participation in the SIMPL [Sustainable Integrated Management of Parasites of Livestock] program, the MPO-WWF Water Stewardship Program and the Integra system as discussed are further examples where the author are involved with matters affecting sustainability; the experience gained which may prove useful to the dairy industry. He furthermore assisted with the scientific program of the SASDT Symposium on Waste Management and Sustainability staged respectively at OR Tambo on 16 July and 18 July in Cape Town. His comments to the WWF on their document: "Agri-food systems: Facts and Futures - How South Africa can produce more by 2050", discussed under Goal 4, result because of knowledge and experience in aspects of environmental sustainability.

In terms of animal welfare, audit criteria were developed for the Industry based on a combination of SANS 1694:2018 - The welfare of dairy cattle of the SABS and IDF 498:2019 - The IDF Guide to animal welfare in dairy production 2.0. The workshop to develop the criteria in which the author participates, took place at Stellenbosch on 30 August under the guidance of Mr Jompie Burger of the DSA.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MSA Meissner_PRJ-0242_Q3 Report_Expenditure_2019.docx
Unnecessary spending during period	No

Popular Report

[MSA Meissner_PRJ-0242_Q3 Report_2019_Popular Report.docx](#)

Additional documentation

[MSA SUSTAINABILITY-STEWARDSHIP OF THE S A DAIRY INDUSTRY \(2\).docx](#)
[Meissner Is 'n aarde sonder vee verkieslik en haalbaar.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