



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

(PRJ-0242-2019)

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Quarter 4 2019 (October 2019 till December 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

We continued with our quest to seek co-operation and outside funding. To that effect we had a Meeting with the Technology Innovation Agency (TIA) to follow up on the next phase in the Genomics Programme. As mentioned in the third quarter report, the TIA 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 titled: SUSTAINABILITY/STEWARDSHIP OF THE SOUTH AFRICAN DAIRY INDUSTRY which was attached to the third quarter report. The next step was to develop the application according to the specifications of the TIA. This has been done, but the document is not attached as it is more than 30 pages, but it can be obtained from the author. The proposal will be presented to the TIA early in 2020.

A further demonstration to illustrate our quest for co-operation in R & D are examples in new projects registered in the fourth quarter: (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

The budget of the TIA application discussed under Goal 1 is R15.3 million for 2020 with 10% escalations for both 2021 and 2022. Normally the policy of the TIA is to share the cost in a 50 - 50 ratio with the application institution, which implies that if the application is successful, the TIA

may contribute in excess of R7 million to our R & D budget.

A MANCOM Meeting was held on 13 November. The primary purpose was to finalise 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 by the DRDC. However, the budget allocation to the R & D Programme for 2020 allowed only four new projects, which have been submitted online and most of the contracts signed. The titles (shortened) are: (1) Market analysis on Sub-Saharan Africa; (2) Reduction of N excretion and emissions; (3) Improved wetland and river management; and (4) Impact of fertilizer application rates. A further important activity was the preparation, discussion and approval of the submission document to the TIA as discussed under Goal 1.

Due to several reasons the milk flocculation programme which was executed at several institutions, but primarily at the UFS, was stopped. We are of the opinion that we can continue with it largely within our own structures and using students in and around UP. This will be pursued early in 2020. Also, Mr Anton Gresse who was responsible for the Performance Management Programme, has resigned from the MPO. Negotiations with other institutions have been initiated. A table of the projects that will be active in 2020 is attached.

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. *Genetic selection for bovine chromosome 18 haplotypes associated with divergent somatic cell score affects postpartum reproductive and metabolic performance.*
2. *Spores in dairy – new insights in detection, enumeration and risk assessment.*
3. *Genomic prediction of serum biomarkers of health in early lactation.*
4. *Effects of supplementing a *Saccharomyces cerevisiae* fermentation product during the transition period on rumen fermentation of dairy cows fed fresh diets differing in starch content.*
5. *Economic consequences of dairy crossbreeding in conventional and organic herds in Sweden.*
6. *Effects of critical fluctuations of storage temperature on the quality of a dry 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:

- a. CAN WE USE MOLECULAR DETECTION METHODS TO IDENTIFY LIVER FLUKE AND ITS INTERMEDIATE HOSTS IN THE ENVIRONMENT?
- b. PRIORITIES TO BE ADDRESSED IN THE INDUSTRY TO SUPPORT SUSTAINABILITY.
- c. SUPPLEMENTING DAIRY COWS WITH MORINGA LEAF MEAL.
- d. NITRATE ADDITION AS A METHOD TO MITIGATE METHANE IN DAIRY COWS.
- e. FEEDING A FLAX SEED SUPPLEMENT TO DAIRY COWS.
- f. THE EFFECT OF PROVIDING SHADE TO DAIRY COWS UNDER HEAT STRESS.

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

In a workshop on herbivores and rangelands in Pretoria on 29 November, initiated by the Chairman of the World Farmers Organization (WFO), and which followed upon a severe attack by anti-livestock activists at a meeting in Brussels, the author gave a talk on: 'A critical review of the anti-animal protein agenda'. It was decided that the proceedings of the workshop will be adapted for a purpose of a television documentary. The goal of the documentary will be to present scientific counteracting arguments and evidence which can be presented to both the South African and the WFO audiences. The author is on the advisory committee of the documentary manufacturers and the manufacture is expected early in 2020.

As mentioned in the second and third quarterly reports, the author together with a number of scientists, sustainability supporting companies, value chain companies and investment/financial institutions has been pursuing the possibility of allocating a monetary value to conservation (regenerative) farming and soil health to improve farming sustainability and provide a means for new farmers to enter farming successfully, in addition to linking this with the principle of providing healthy and quality food products. The structures have now been established in terms of a company IntegraFood (e-Commerce trading platform), supported by IntegraTrust and IntegraLink (a non-profit company), which will seek grant and investment funds to provide means to farmers who want to participate. Farmers will be evaluated in terms of a scoring system and will receive managerial support through IntegraLink. 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 has proved 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 Goals 1 and 2, participation in the SIMPL [Sustainable Integrated Management of Parasites of Livestock] program of the NAHF discussed previously, the MPO-WWF Water Stewardship Program and the Integra system as discussed under Goal 4, are further examples where the author are involved with matters affecting sustainability; the experience gained which may prove useful to the dairy industry. In the talk which he gave at the Herbivores and Rangelands workshop, discussed under Goal 4, one of the issues dealt with is Animal Welfare and how we deal with it in South Africa. Also, his critical comments to the WWF on their document: "Agri-food systems: Facts and Futures - How South Africa can produce more by 2050", discussed in the third quarter report, result because of knowledge and experience

in the discipline of environmental sustainability.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MSA Meissner_PRJ-0242_Q4 Report_2019_Expenditure.docx
Unnecessary spending during period	No

Popular Report

[MSA Meissner_PRJ-0242_Q4 Report_2019_Popular Report.docx](#)

Additional documentation

[2019 11 02 RD 2020 Table - Completed \(2\).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