



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

(PRJ-0242-2019)

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Year 2019 (January 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

With reference to our Genetic and Performance Improvement R & D programme, a project: A GENOMIC APPROACH FOR IMPROVEMENT OF WELFARE TRAITS IN DAIRY CATTLE has been launched with a number of post-graduate students participating. Prof Este van Marle-Köster of the University of Pretoria (UP-main campus) has taken responsibility, also for the administration and budget. The author is co-responsible. The project focuses on functional traits not well recorded to date. These relate to mastitis (udder health), claw health and lameness, and is studied using a genomic approach to provide insight into genetic mechanisms, with the end goal of providing practical solutions for selection and improvement of cow welfare. A number of institutions are involved, including UP-main campus, UP-Onderstepoort, The ARC-API, Stellenbosch University and the University of Fort Hare (initially). Also, with reference to the Genetic and Performance Improvement R & D programme, Phase 1 of the Dairy Genomics Programme (DGP) was completed at the end of March 2019. The DGP was funded by the Technology Innovation Agency (TIA) in a joint (co-funding) arrangement with the industry, the TIA's contribution being R9 707 500 over three years. The author on 20 February 2019 participated in a workshop to establish priorities for the industry, as the TIA is keen to commence with Phase 2. It is expected that Phase 2 will go beyond genomics as the focus, as 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 in February 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

In terms of fund sourcing the budget of the RTF Project, A GENOMIC APPROACH FOR IMPROVEMENT OF WELFARE TRAITS IN DAIRY CATTLE, mentioned under Goal 1, amounts to R570 000 for 2019 and the RTF Project, BIOCONTROL OF TWO DISEASES AFFECTING DAIRY COWS, R424 000 for 2019. Unfortunately these applications were not successful. To access additional funds, we will follow up with the TIA to consider Phase 2 of the DGP project and hopefully will be successful. The estimated budget for the TIA is in excess of R 7 million.

The R & D Management Committee (MANCOM) usually meets officially about two weeks or more before the Dairy R & D Committee (DRDC) Meeting as it needs to inform and advise DRDC members. The author also meets regularly with the CEO of the MPO on administrative matters. The MANCOM met on 18 February, 8 March, 9 May, 13 August and 13 November. The DRDC met on 28 February and 29 August. Because of the Large Herds Conference, the scheduled Meeting of the DRDC was cancelled, but the Dairy Research Forum (DRF) met at the Conference. The DRF Meeting, attended by 30 delegates, was valuable in terms of general discussion about dairy R & D in the country, but especially also because some 20 new proposals for research were put forward.

Other activities in support of Goal 2 include the following: The author provided input at a DSA Standards workshop on 7 February; he attended the WCARF Meeting at Elsenburg on 16 May where opportunities for collaboration and possible funding were considered; he did a presentation at the Milk SA General Meeting of 13 June on progress with the R & D Program and one at a special Meeting on 24 June to discuss the implications of the EAT _ Lancet Report; he attended the Milk SA Coordinating Committee's Meeting of 27 June - two issues which the author had to deal with at the latter Committee were rBST analysis and A1, A2 milk; 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; he 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".

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.

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

- * The AFMA technical Committee together with the Registrar of the Farm Feeds Act is adapting the Regulations to meet the modern requirements of farm animals. The author participates in the Dairy group.
- * The author is a member of the WWF-SA/MPO Water Stewardship initiative and has participated in discussions at Woodlands Dairy/Trace & Save on soil, water and waste treatment. The Meeting was on 26/27 February in the Humansdorp area. The author provided a Draft of the IDF Water Footprint Guidelines to participants.
- * The author participated in a discussion on sustainability in food production in response to the EAT_LANCET report on 24 June and gave a PP presentation with the title: CAN THE GLOBE FUNCTION WITHOUT LIVESTOCK?
- * The author as member of the Steering Committee of the Sustainable Integrated Management of Parasites in Livestock (SIMPL) Program of the NAHF-RuVASA has provided input to the structural arrangements on 10 June.
- * 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?, 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 was "Is 'n aarde sonder vee verkieslik en haalbaar?". With some arguments associated with this topic, the WWF-SA 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 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.
- * 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.
- * 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 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 valuable in developing the scoring system and 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

An example is where the author commented on a document of the LEAP initiative of the FAO, the title being: "LEAP3 PROJECT PROPOSAL: ACTIVITIES AND DELIVERABLES". Two statements in the comments may be of significance for the reader: "I do not think we should try to distinguish between countries with high and low environmental footprint. We have industrialized (high) and non industrialized (low) countries, but industrialized countries in terms of agricultural (and therefore livestock) environmental footprint may be low per unit product produced because of particular measures such as improved efficiency and production system employed. Overall though the agricultural (livestock) environmental footprint may still be higher because of total scale of activity and numbers compared to non industrialized countries. Also, production system is a function of investment and resources, which sometimes are not available in poorer countries. Another factor, which I have emphasized before, is that the environmental footprint must be calculated as the net between GHG emissions and carbon storage/sequestration. It is of little use if one increases efficiency by intensifying (lower GHG emissions) but one's carbon stocks and sequestration are low because of conventional tilling practices and high inorganic fertilizer use to produce the corn and soybeans which one uses in the rations of the animals. I can add further examples. This shows that it will be extremely difficult to effectively distinguish between countries with low and high environmental footprint. Some, as yet, haven't even done the calculations. Agriculture (and therefore the livestock sector) has a huge obligation to assist in limiting CO₂ accumulation, by yes emissions reduction, but even more so by the carbon sink (sequestration) method. To stimulate participation by global farmers, incentive schemes, also to provide suitable carbon offset avenues for companies with high footprints, need to be developed in a standardized way (meaning through guidelines that are suitable to everyone). I therefore support the intended LEAP3 intention of work towards Ecosystem Services, Eco-Toxicity, Biomass carbon stocks and stock changes, etc".

An example illustrating our commitment to animal welfare is the RTF project: A GENOMIC APPROACH FOR IMPROVEMENT OF WELFARE TRAITS IN DAIRY CATTLE, discussed under Goals 1 and 2. Also 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.

The participation in both the SIMPL 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. He furthermore assisted with the scientific program of the SASDT Symposium on Waste Management and Sustainability staged at OR Tambo on 16 July and 18 July in Cape Town.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	MSA Meissner_PRJ-0242_Annual Report 2019_Expenditure.docx
Unnecessary spending during period	No

Popular Report

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Additional documentation

No file has been uploaded

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