



Co-ordination, Support and Promotion of Needs-driven R&D development in the SA dairy industry

(PRJ-0059-2014)

Milk South Africa

Year 2014 (January 2014 till December 2014)

Project goals

Goal 1 - To accumulate and publish existing domestic and international scientific knowledge of applicable and practical value to enhance the industry.

Achievements *Tasks: i. Updating information on the website from the seven most relevant international scientific journals, as previously identified. Fifty research titles per month will be added. ii. The listing of publications and articles of a popular-scientific nature which would be of functional value to the South African dairy industry. iii. Research results of importance to the industry will be sourced from local and international sources and interpreted and popularized on the website monthly under the heading "The Research Column". One (1) article per month will be added to The Research Column. A nutshell interpretation will also be extracted from the aforementioned (Tasks i to iii), for publication in for example the Milk Essay and Milk SA's website. iv. The R & D capacities in SA, their publications and the work that they are busy with will be updated biannually on the website. This will be done in July before the Forum meetings. (This task will not be executed in 2014, as it was done in 2013).*

Task i: Updating information on the website - target 50 per month, i.e. 600 per year. In 2014 a total of 632 was uploaded on the website. The target was met.

Task ii. Listing and interpretation of publications of a functional value. This is listed on the website under the title: "Dairy R & D in SA". In 2014 a total of 18 publications was listed and interpreted, which is satisfactory.

Task iii. Research results of importance interpreted under "The Research Column" - target one per month, i.e. 12 per year. In 2014 a total of 15 was put on the website. Target was met.

Task iv: R & D capacities in the country listed. This is done every two years; 2015 is the next scheduled date.

No Non-achievements / underperformance has been reported

Goal 2 - To limit research fragmentation and encourage cooperation between R & D capacities towards achieving the strategic goals of the industry.

Achievements *Tasks: i. To communicate with R&D institutions in South Africa to promote R&D in line with the strategic direction of Milk SA and to promote appropriate interaction and co-operation between the relevant institutions. ii. Co-operative Research Networks*

Non-achievements / underperformance

Task iii. The Forum was cancelled

(CRN's) and the development thereof will be encouraged to increase the chance of project funding and to ensure anticipated deliverables and outcomes - as well as to see how the transformation objectives can best be achieved in so far as R & D can support or add value. iii. The annual R & D Forum where the most prominent researchers and industry leaders will discuss strategic direction and relevant research results will be arranged in the second half of 2014.

Task i: To communicate with R & D institutions and promote co-operation. The MoA arrangement with the Western Cape Department of Agriculture (WCDA) is functioning well. A dairy farmers workgroup planning research in collaboration with WCDA officials has also been established. A further outcome of the collaboration with the WCDA is that the Programme Manager is a member of their Agricultural Research Forum (WCARF) that meets biennially. A similar MoA arrangement as with the WCDA is still being negotiated with The Eastern Cape Department of Rural Affairs and Agrarian Research (ECDRA&AR). The MoA with the KZN Department of Agriculture and Rural Development has been finalized and is scheduled to be signed in the presence of the MEC in January 2015. Although there is still the delay with finalizing the MoA with the Eastern Cape Department, the process of achieving the commitment of the three coastal provinces within the network provided by SESCORD is now complete. This is a tremendous step forward to co-ordinating the R & D requirements and identified projects of the region, and will facilitate the work that needs to be done on both experimental stations and farms. What is also important to mention is that all institutions in the SESCORD initiative endorse the goals and strategic direction of Milk SA.

Task ii: The development of Co-operative Research Networks (CRNs) encouraged. The MoA and SESCORD arrangements discussed under Task i serve as two examples of how CRN's are being promoted. A further example of CRN encouragement is the research projects currently in the system and those approved by the RPEC. The value of the approach is that the RPEC wants to ensure that the best possible expertise and capacities are involved with the project, secondly, that as many students as possible can be trained to build capacity and serve the interest of transformation and thirdly, that it will improve the chance of finding external funding if the amount which can be allocated by Milk SA is insufficient. With regard to the approved projects, contact between the research teams responsible for the liver fluke and mastitis projects has been facilitated. For example, Dr Martin van der Leek of UP, Onderstepoort, who will be the project leader for the mastitis survey and identification of pathogens on farms, accompanied the CEO and the Program Manager in a visit to UKZN to meet the group of Prof Mark Laing who will be responsible to find suitable bacteriophages as natural enemies to the prominent mastitis pathogens. Thereby, a position of trust and a co-operative spirit to support each other have been established, which should benefit the mastitis program. A further example is that exploratory discussions were arranged between Dr Danie Odendaal of the National Disease Monitoring project and

Reasons for non-achievements / underperformance

It was considered that progress of research projects was as yet insufficient to warrant the substantial budget outlay of a forum meeting.

Planned remedies for non-achievements / underperformance

A Forum Meeting will again be considered in 2015

Dr Japie van der Westhuizen of Logix, to establish the possibility of feeding in the disease results and recommendations in the management program of the Logix. It appears that it may require only an interphase modification at comparatively low cost, but with substantial additional benefits to the industry.
Task iii: The annual R & D Forum scheduled for August 2014. The Forum was cancelled.

Goal 3 - To guide the R & D programme by means of effective structural arrangements, administration and fund sourcing.

Achievements *Tasks: i. Chair the Research Project Evaluation Committee of Milk SA (RPEC). ii. The administration of R & D requires guidance on structural arrangements, evaluation of project proposals and reports, negotiations on IP, contracts and publication of results. iii. Submission of project proposals will be facilitated by the office of Milk SA; proposals will be evaluated by the RPEC and recommended by the RPEC to the Milk SA Board of Directors for approval and possible financial support. iv. R & D institutions will be guided through the required processes and contracts be concluded with successful applicants. v. Milk SA's funds for R&D are limited. Sourcing from other institutions is possible, but the process and procedures differ and therefore guidance to the researchers and Milk SA is required. This will be done for approved projects.*

Task i: The Program Manager chairs the RPEC. The RPEC has been very active in the reporting period, with Meetings on 2014/02/06, 2014/03/31, 2014/08/12, 2014/09/17 and 2014/10/20, which were often preceded by Work Group Meetings. The Work Group serves as an Executive of the RPEC and deals in-depth with R & D structural and project relevant issues, the outcomes and recommendations of which are then relayed to the RPEC Meeting. Progress was also reported at the R & D Advisory Committee Meetings of 2014/05/12 and 2014/09/08, the Board Meetings of 2014/06/03 and 2014/12/01, the Members Meetings of 2014/06/04 and 2014/12/02 and the Producers Work Group Meeting of 2014/11/18.

Task ii: Guidance to the Administration of R & D. This was done on a continuous basis. During the reporting period changes to the Project Proposal and Progress Report documents were made. The change to the Proposal document facilitated more effective evaluation by the RPEC. Furthermore, in the reporting period much attention was given to communication with the project leaders of the three project proposals recommended by the RPEC for funding. See Task iii for details.

Task iii: Submission and evaluation of project proposals. In the reporting period the first, second and third progress report of the project: the "National Disease Monitoring and Extension System" was evaluated. The third report was of the new contract finalised for the last six months of the fin year. The first report of the project on the "Microbiological Quality of Milk" was also received. The three project proposals approved for funding in 2015 with their Project Leaders (in brackets) are:

- "Fasciola hepatica: Impact on Dairy Production and Sustainable Management on Selected Farms in South Africa" (Dr Jan van Wyk, Onderstepoort)
- "Resistance to available antibiotics in lactating cows with mastitis" (Dr Martin van der Leek, Onderstepoort)
- "Investigating alternative methods such as bacteriophages and bacteriocins to control mastitis organisms" (Prof Mike Laing, UKZN).

In the discussions with the Project Leaders, they were encouraged to form CRN's if appropriate. This was accepted as also discussed above. For example, in the project on mastitis of Prof Laing on bacteriophages, they will source mastitis organisms from the selection of the Dairy Laboratory at Onderstepoort and otherwise collaborate with Drs van der Leek and Petzer, in addition to other Departments at UKZN. Dr van der Leek will work with Ampath Laboratories and the University of Utrecht in the Netherlands. Dr van Wyk will work with several practicing veterinarians in the south-eastern Cape and is negotiating with expertise at a University in Belgium. With the fourth project proposal: "Prevalence of and reasons for milk flocculation after heat treatment", a different approach was followed. Prof Robin Meeske of WCDA, Outeniqua who initially has been identified as Project Leader since his group has done some preliminary work, requested a brain storming session because of the complexity of the problem and the lack of literature on the

subject. Subsequently, a workshop was arranged for 2014-09-17 with several knowledgeable persons and persons with experience of milk flocculation. Broadly, three areas where possible causes for flocculation could originate were identified: nutrition of the cow, microbiological contamination (primarily Psychrotrophs) and chemical/enzymatic (plasmin, protease) activity with heating in milk. These areas are in the process of being further investigated, with respective conveners Prof Meeske, Prof Piet Jooste and Dr Koos Myburgh, and project proposals compiled. Towards the end of 2014, an open invitation to research institutions for new submissions were sent out by the CEO. In addition, a Meeting was arranged to establish whether the National Disease Monitoring project cannot be linked with the Logix system, as this would add considerable value to the information and management support system. It does appear that an interface needs to be programmed at little cost. The idea will be pursued further early in 2015. A Genomics-based selection Program has been submitted by Stud Book and UP for possible funding by the Technology Innovation Agency (outside funder). Milk SA was requested to support (no financial implications), which was done, provided that a genomic investigation for possible marker(s) for mastitis control is included. This has been done, and if successful, the project could add a further dimension to the mastitis program. Task iv: R & D institutions will be guided through the required processes. This was done continuously. For example with the project leaders of the approved projects, several Meetings were held and correspondence conducted to guide the process and the budgets negotiated. These were finalized with the liver fluke and mastitis projects, but the contracts still need to be compiled and signed. It is envisaged that these projects can commence early in 2015. For the milk flocculation program, submissions are expected in January 2015. Task v: Sourcing of funds. This was not necessary as Milk SA's funds for commitments in 2015 are sufficient. However, the bacteriophage project of the mastitis program may be co-funded by Plant Health Products (PTY) LTD in KZN. This will be followed-up early in 2015.

No Non-achievements / underperformance has been reported

Goal 4 - To participate in the Water Research Commission's study on water and wastewater management in the South African dairy industry in which the Programme Manager acts as evaluator on behalf of the SA dairy industry; and to continue to support an MBA student with her dissertation titled "The quantificati

Achievements *Tasks: i. Coach the MBA student in the approach to and execution of the dissertation. ii. To provide input as required by the Water Research Commission and its contractor, the University of KwaZulu-Natal.*

Task i: Coach the MBA student. The study has not yet progressed to the stage of compilation of a dissertation.

Task ii: Provide input to WRC and UKZN. The first report of UKZN to the WRC was on 2014-07-31. The Meeting was attended by the Program Manager. The study is about one third completed.

No Non-achievements / underperformance has been reported

Goal 5 - Reporting to and from the International Dairy Federation (IDF) on Sustainability and the Environment, including the activities of the Scientific Committee on the Environment (SCENV) and the South African dairy industry's commitments to the Global Dairy Agenda for Action (GDAA).

Achievements *i. Provide South African water footprint data as obtained from the initiative under 3.4 and carbon footprint data obtained from the National R&D Programme on Climate Change to the IDF (in accordance with the IDF-LCA Methodology). ii. Promote mitigation activities in the South African dairy supply chain through communication and supporting articles (e.g. as*

under Task 3.1 iii). iii Report to and from the IDF on R & D and providing input into key documents on GHG emissions and environmental sustainability in the dairy supply chain (ad hoc). iv. IDF related information relating to R&D - including Sustainability and the Environment will constantly be scrutinized and taken care of as required.

Task i: Provide SA water and carbon footprint data. The most accurate SA data based on IPCC and IDF-LCA methodology has been published in a special edition of the SA Journal of Animal Science, available from February 2014. The title of the special edition is: "A balanced perspective on animal production, from environment to human health". The Program Manager R & D is author or co-author of seven papers, including four on methane emission calculations. The calculated figures on GHG as published in the SA Journal of Animal Science were provided to Dr Delanie Kellon of the IDF and to the Department of Environmental Affairs as the official SA body. As yet, no response has been obtained from the IDF, but this could be due to Dr Kellon receiving other responsibilities.

The FAO in their calculations in the document: "Tackling climate change through livestock", includes South Africa in sub-Saharan Africa, which provides a skewed view of emissions and efficiency of livestock of the country. The RPEC and the R & D Advisory Committee recommended that the Program Manager in consultation with other sectors of the livestock industry communicate with the FAO and provide the correct figures. A letter was sent to the FAO which they politely responded to, stating that elsewhere in the document the true situation regarding South Africa is clearly shown and therefore do not think it is necessary to change the figures where South Africa is included in sub-Saharan Africa. They also requested the Program Manager R & D to review the statistics which they used in their calculations and if necessary provide them with more accurate figures. This was done.

Water footprint data is not yet available.

Task ii: Promote mitigation activities. The special issue referred to under Task i serves as base document to that effect. In the paper: "Sustainability of the South African Livestock Sector towards 2050. Part 2: Challenges, changes and required implementations", the Program Manager R & D discusses several issues of mitigation. Sustainability, including water use and carbon emissions, was also dealt with in the February, September and December(2) 2014 issues of THE RESEARCH COLUMN and heat stress in the October (2) issue. In addition, the 2014-10-19 edition of "Dairy R & D in SA" deals with water management on farms.

Tasks iii and iv: Providing input into IDF documents and those of their associates on GHG emissions and environmental sustainability. Activities during the report period include: (1) The IDF-GDAA's initiative on the Dairy Sustainability Framework (DSF): The Program Manager R & D participated in a webinar on 2014/01/23 where the DSF brochure was explained and input requested. The DSF Management requested dairy institutions to consider membership which the Program Manager through the RPEC recommended. This was referred to SANCIDF for consideration and membership was taken up. (2) The IDF's document on "Sustainable Dairy Nutrients are essential to human health (Version 2/2014)". The Program Manager R & D was requested to provide inputs/comments. (3) The IDF-FAO's High Level Panel of Experts of the Committee on World Food Security (CFS-HLPE) requested comments/inputs into their document on Water and Food Security, which was provided. (4) The IDF-FAO's Livestock Environmental Assessment and Performance Partnership (LEAP) requested inputs/comments on three documents: (a) Environmental Performance of Animal Feeds Supply Chains: Guidelines for quantification; (b) Poultry Guidelines; (c) Small Ruminant Guidelines. (5) Input was also provided to the document: "IDF Strategic Review: Prioritization of current and future IDF work" and "The framework for action of ICN2 (International Conference on Nutrition)". (6) There is still uncertainty as to the best way of calculating the carbon footprint of dairy product manufacturing. The Program Manager decided to participate in this debate. (7) Finally, input was also given into the development of the 2014 FAO, IDF, IFCN document: "World mapping of animal feeding systems in the dairy sector", as it applies to the South African situation, and the IDF HLPE Water and Food Security draft document.

No Non-achievements / underperformance has been reported

Income and expenditure statement

Income and expenditure statement	Budget.docx
Unnecessary spending during period	No

Popular Report

No file has been uploaded

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