



ELSEVIER

Contents lists available at ScienceDirect

The Veterinary Journal

journal homepage: www.elsevier.com/locate/tvj

Effects of a group-based reproductive management extension programme on key management outcomes affecting reproductive performance

Tom S. Brownlie ^{a,b,*}, John M. Morton ^c, Cord Heuer ^b, Scott McDougall ^a

^a Cognosco, Anexa Animal Health, PO Box 21, Morrinsville 3300, New Zealand

^b Epicentre, Institute of Veterinary, Animal and Biomedical Sciences, Massey University, Private Bag 11222, Palmerston North 4442, New Zealand

^c Jemora, PO Box 2277, Geelong, Victoria 3220, Australia

ARTICLE INFO

Article history:

Accepted 28 November 2014

Keywords:

Dairy cattle
Reproduction
Extension
Management

ABSTRACT

A group-based reproductive management extension programme has been designed to help managers of dairy herds improve herd reproductive performance. The aims of this study were, firstly, to assess effects of participation by key decision makers (KDMs) in a farmer action group programme in 2009 and 2010 on six key management outcomes (KMOs) that affect reproductive performance over 2 years (2009–2010 and 2010–2011), and secondly, to describe KDM intentions to change management behaviour(s) affecting each management outcome after participation in the programme. Seasonal calving dairy herds from four regions of New Zealand were enrolled in the study. Intentions to modify management behaviour were recorded using the formal written action plans developed during the extension programme. KMOs assessed were calving pattern of the herd, pre-calving heifer liveweight, pre-calving and pre-mating body condition score (BCS), oestrus detection, anoestrus cow management and bull management. Participation was associated with improvements in heifer liveweight, more heifers calving in the first 6 weeks of the seasonal calving period, pre-mating BCS and oestrus detection. No significant effects were observed on anoestrus cow management or bull management. KDMs with greater numbers of proposed actions had lower 6 week in-calf rates in the second study year than KDMs who proposed fewer actions. A more effective strategy to ensure more appropriate objectives is proposed. Strategies to help KDMs to implement proposed actions more successfully should be investigated to improve the programme further.

© 2014 Elsevier Ltd. All rights reserved.

Introduction

In seasonal calving herds, all cows are required to calve within a restricted time period each year. Accordingly, conceptions are required within a specific time period each year, so inseminations are performed only during a restricted 'breeding' period, commencing with the herd's mating start date (MSD). The InCalf programme in New Zealand, developed from the Australian programme of the same name (Morton, 2003), as applied in New Zealand, focuses on the following areas of dairy herd management (key management outcomes, KMOs): (1) calving pattern (distribution of intervals from each cow's calving date to the herd's MSD); (2) pre-calving heifer liveweights; (3) pre-calving and pre-mating body condition scores; (4) oestrus detection; (5) artificial insemination techniques; (6) bull management; (7) anoestrus cow management; and (8) animal health.

Farmer Action Groups are a central part of the InCalf programme in New Zealand. The effectiveness of these groups on 6 week

in-calf rates has been assessed using a herd level randomised controlled trial, with each participating herd randomly allocated to participate in a group, to be an actively monitored control or to be a passively monitored control (Brownlie et al., 2015).

Management changes are required to increase the 6 week in-calf rate and behavioural changes are required to cause management changes. Intention to change is the key determinant of behavioural change (Ajzen, 1991; Coudel et al., 2011), and medium to large intention to change is needed if behavioural change is to result (Webb and Sheeran, 2006). Accordingly, intention to change was a key focus of the Farmer Action Group process. For each key risk outcome, where a key decision maker (KDM) indicated dissatisfaction with one or more management behaviours associated with a particular KMO, the KDM could propose an intention to change. At a subsequent meeting, the KDM could evaluate their success in making these changes.

The aims of this study were: (1) to assess the effect of participation in an InCalf Farmer Action Group on herd management affecting six of the KMOs that affect herd reproductive performance; (2) to determine, for each KMO, the proportions of KDM that intended to change management behaviour after participation and

* Corresponding author. Tel.: +64 7 889 8231.

E-mail address: tbrownlie@lic.co.nz (T.S. Brownlie).

their self-reported success in making these changes; and (3) to assess associations between intention to change and herd performance for the KMOs.

Materials and methods

Overview of the study

Study design and herd allocation have been described in Brownlie et al. (2011, 2014), with herds randomly allocated to participation in an InCalf Farmer Action Group (treatment herds), to actively monitored controls (control herds) or to passively monitored controls. Since this latter group did not participate in the questionnaires (Brownlie et al. 2015), they were excluded from the present analysis. KDMs (and/or farm staff) from herds that were allocated to the treatment group participated in Farmer Action Group activities from June 2009 to May 2010, with data collection continuing until May 2011.

InCalf farmer action group

The design and management of the Farmer Action Group have been described in Brownlie et al. (2015). The farming year was divided into four periods, namely, calving, mating, mid/late lactation and the dry period (Fig. 1). Over a 12 month period, one 'prepare' meeting was held in each period, and management outcomes associated with the period were discussed; meetings were timed to coincide approximately with when these periods occurred in spring seasonal calving herds (the predominant calving system in New Zealand). Two or three pertinent management factor topics were presented to participants at the beginning of each meeting. A

corresponding review meeting was then held prior to the next period's prepare meeting. KDM (or farm staff) attendance at each meeting was recorded.

Within each prepare meeting, the KDM could use InCalf resource material to evaluate their herd's overall reproductive performance and performance relating to KMOs, against national targets. KDMs were then asked to quantify their satisfaction with pre-determined aspects of KMOs in two to six questions, for example, 'were you (i.e. the KDM) 'very satisfied', 'could be better' or 'not satisfied/unsure' that everyone on the farm understands the need to achieve a high proportion of early calving cows'.

KDMs who were less than 'very satisfied' were encouraged to use InCalf resource material within small peer groups to formulate written action plans to improve herd reproductive performance through management changes with 'specific, measurable, achievable, relevant and time-bound' ('SMART') objectives (Doran, 1981), focussed on KMOs. Action plans and review session responses were recorded in duplicate, with the top copies retained by the KDM and the second duplicated sheets collected for analyses.

Overview of key management outcome assessment

Outcome measures of key management factors are summarised in Table 1. The effect of participation in the InCalf Farmer Action Group was assessed for each management outcome by comparing outcomes between treatments (those undertaking the InCalf programme) and control herds. Amongst treatment herds, the effect of proposing ≥ 1 actions was measured by comparing associated outcome measures in these herds against those that did not propose any actions. Where there was time for herd management affecting the KMO to have changed after the treatment group KDM had addressed the relevant topic in the InCalf Farmer Action Group, measures for both study years (i.e. 2009–2010 and 2010–2011) were pooled for analysis. Otherwise, only measures for the 2010–2011 study year were analysed.

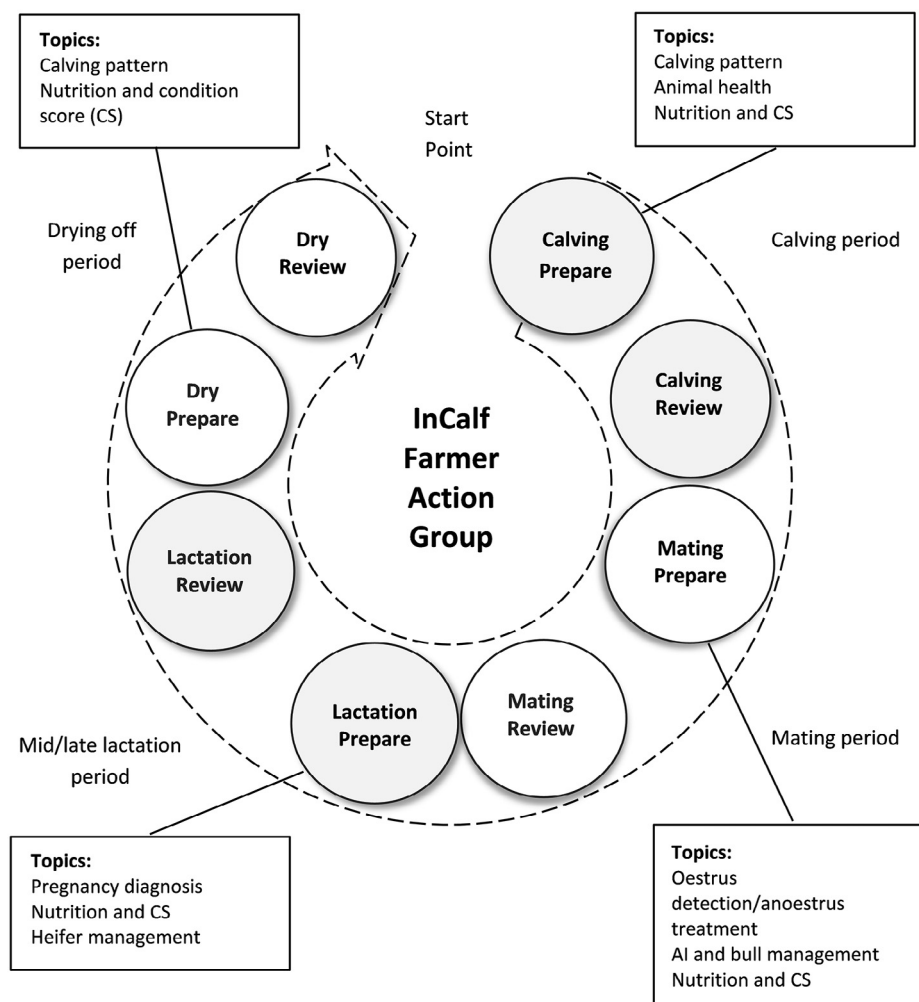


Fig. 1. Schematic view of the InCalf Farmer Action Group process undertaken regionally by key decision makers allocated to treatment in the New Zealand National Herd Fertility Study. Four meetings were held over a 12 month period. Each circle represents either a 'prepare' or subsequent review meeting for each of four periods in the seasonal calving dairy year.

Download English Version:

<https://daneshyari.com/en/article/5797599>

Download Persian Version:

<https://daneshyari.com/article/5797599>

[Daneshyari.com](https://daneshyari.com)