Strategies to utilise non-replacement male dairy calves for beef production

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There is a paucity of knowledge concerning practices and management strategies, when considering current growth pathways and available markets for non-replacement calves in the Australian dairy industry. The term "bobby calf" is widely accepted in Australia for a male calf that is unaccompanied by its dam under six weeks old and also is most commonly slaughtered at less than 10 days of age from a dairy herd (Moran 2002). Unlike beef calves that are reared by their dams, dairy farmers must attempt to artificially rear calves in an economically viable manner. Producers can be faced with many challenges as bobby calves are sensitive to the conditions they are exposed to, due to their size and age (Moran 2002). Other deterrents to rear bobby calves can reside in the lack of saleable markets and unestablished rearing facilities to enable pathways of growth for bobby calves to enter the Australian beef market (Stafford *et al.* 2001).

Australia is in the minority of developed countries around the world that still perceive the practice of slaughtering male dairy calves as more profitable than rearing them for meat production (Cave *et al.* 2005; Ashfield *et al.* 2014). There is an absence of recently published figures that suggest the total amount of dairy bred calves produced yearly, however it is estimated that 400,000 non-replacement calves are processed each year in Australian abattoirs (Dairy Australia Ltd 2017). The need to identify rearing strategies and potential supply chain markets is of importance to manage and assist good welfare of non-replacement dairy calves. The aim of this study is to identify current production practices of bobby calves, as perceived by dairy farmers and to underpin the decision making of rearing bobby calves to meet beef market specifications.

To identify industry practices, exploratory, semi-structured in-depth interviews were constructed to formulate a qualitative study. A constructivist grounded theory to date has informed the research processes and the latter data analysis of this study. Grounded theory is a systematic approach to qualitative research that develops knowledge through the interactions with participants (producers) (Tweed and Charmaz 2012). Current Australian dairy owners and managers of 18 years of age and older, are being recruited to comprehensively explore past, present and emerging practices associated with rearing non-replacement male calves in dairy systems. Recording a timeline of practice change, has the potential to assess concurrent attitudes producers express toward the treatment and welfare of non-replacement calves. As a result, a change of responsibility towards male calves could potentially be indicated and the effect that external drivers have on these attitudes. It is of utmost importance to interview owners and managers of dairy enterprises as they can implement changes within each production system. Identification of supply chains for male calves will be accounted for through each participant's personal experience regarding the saleability of past male calves and expected future markets. To address the scope of the research question, a saturation sampling technique will be used in this study (Tweed and Charmaz 2012).

Audio recordings from each interview will be transcribed verbatim by the author. Thematic analysis described by Braun and Clarke (2006) will be used to analyse interview data and assist in formulating themes. Strategies to utilise and rear bobby calves will be identified as well as current supply chains that are utilised in Australia. This study intends to provide feedback to dairy producers with identified strategies to assist management practices surrounding male calf production. This study is projected to be completed by December 2020.

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Special thanks to the participating producers for providing their knowledge and personal experiences. This project is supported by the Australian Government Research Training Program.