

## **Bobby Calf Time off Food Regulatory Impact Statement Submission**

### **Biosecurity Queensland Department of Employment, Economic Development and Innovation**

#### Summary

Biosecurity Queensland does not support the proposed standard for bobby calf time off feed (TOF) of 30 hours. Biosecurity Queensland has concerns about the robustness of the analyses within the Regulatory Impact Statement (RIS), particularly the allocation of equal welfare impact scores for 18, 24 and 30 hours TOF respectively. Biosecurity Queensland also has concerns about deficiencies in behavioural data and aspects of the conclusions in the paper by Fisher *et al* (unpublished)<sup>1</sup> upon which many of the RIS assumptions are based.

Biosecurity Queensland's position is that TOF for bobby calves should be a maximum of 24 hours based on the results of the studies by Fisher *et al*<sup>1</sup>, Todd *et al* (2000)<sup>2</sup>, and additional reports on bobby calf welfare<sup>3,4,5</sup> which indicate that there are additional negative welfare impacts at 30 hours compared with 24 and 18 hours TOF.

The 30 hour option poses a significant welfare risk to a proportion of any transported group because it provides no margin of safety to allow for biological variation within groups, variation in management prior to transport, and unforeseen circumstances during transport and lairage.

Key behavioural indicators of welfare impact were not adequately addressed in the studies by Fisher<sup>1</sup> and Todd<sup>2</sup> hence the science-based welfare assessments underpinning the RIS are incomplete. The RIS process needs to consider the findings of additional studies which examine a fuller spectrum of behavioural welfare indices, in order to present a comprehensive and balanced analysis.

Biosecurity Queensland has concerns about aspects of the information supplied in the RIS public consultation process. The RIS has focused on information which supports 30 hours TOF, and other information which does not support this option has been disregarded. Specifically, the finding by Fisher *et al* that 12% of calves were hypoglycaemic at 30 hours has been omitted from the RIS which has gone on to assign equal welfare impact to the three TOF options. The Dairy Australia précis which was supplied in place of Fisher's original paper mentions calves being "below the lower reference value" at 30 hours, but does not provide the specific data from the Fisher study - so the emphasis of this important finding is effectively lost as hypoglycaemia *per se* is not mentioned.

There are clearly identified phases in the current system of bobby calf transport that could be streamlined to achieve a 24 hour maximum time off feed standard, with minimal impost to the farmers, transporters and meat processors. Biosecurity Queensland believes it is reasonable to expect industry to be facilitating these changes to improve bobby calf welfare and improve the industry's reputation around this issue.

## Detailed comments

### Introduction

The overarching policy objective identified in the RIS is *"to ensure that the conditions under which bobby calves are transported on land are consistent with reasonable animal welfare standards"*. Further, the scope of the Australian Animal Welfare Strategy (AAWS) states that it *".....provides a framework for sustainable improvements in animal welfare outcomes...."*

Biosecurity Queensland does not believe the RIS process has adequately addressed either of these stated objectives, because it has focused on a preferred option (30 hours TOF) which aims to maintain current practice due to its feasibility and reduced cost to industry, rather than provide any tangible animal welfare improvements.

### Welfare impacts at 18, 24 and 30 hours time-off-feed.

Animal Health Australia and RIS authors have based their support for 30 hours TOF on an Australian study conducted by Fisher *et al* (unpublished)<sup>1</sup> and a New Zealand study conducted by Todd *et al* (2000)<sup>2</sup>.

The RIS states that based on these studies: "there is no science-based evidence of improvements to bobby calf welfare under 24 hours and 18 hours TOF as compared to 30 hours". However, Biosecurity Queensland disputes the validity of this statement. Such a conclusion is not supported by the data within the Fisher and Todd studies, which indicate that there were additional negative welfare impacts at 30 hours TOF compared with 24 and 18 hours TOF. Further papers also note negative welfare impacts for immature calves subjected to 30 hours TOF<sup>3,4</sup>.

In Fisher's study, 12% of calves had hypoglycaemia at 30 hours, and in Todd's study calves had hypoglycaemia and raised ketone levels for 18 of the 30 hours. No reference is made to these results in the RIS. Similarly the Dairy Australia précis which was supplied in place of Fisher's original paper mentions calves being "below the lower reference value" at this time, but does not provide the specific data from the Fisher study - so the emphasis of this important finding is effectively lost as hypoglycaemia *per se* is not mentioned.

Biosecurity Queensland has concerns about the lack of transparency of this RIS process which has denied the public the opportunity to view the original Fisher data.

Hypoglycaemia causes hunger, shakiness, nervousness, anxiety, and can progress through to seizures and coma. Glucose regulation in young animals is underdeveloped; the young lack stores of glycogen and other complex carbohydrates and therefore require frequent feeding. The proportion of calves hypoglycaemic at 30 hours in Fisher's study is of significant welfare concern and the effects on weaker individuals in any (non-experimental) group would be expected to be even more pronounced.

A statement taken in isolation from the concluding section of the Fisher study that "30 hours TOF is a defensible outer limit" has been used to underpin the RIS position. However this

concluding statement is not supported by the Fisher study *results* (particularly the finding that 12% of calves were hypoglycaemic at 30 hours) and is inconsistent with their statement elsewhere in their conclusions that “*Best practice management of transported calves would involve time off feed not longer than around 24 hours*”.

Fisher’s statement that 30 hours is a defensible “outer legal limit” is also qualified by the statement that this requires “good practice in other aspects of calf management”. The RIS itself (section 1.3 paragraph 7) notes broad agreement that “you cannot guarantee: feed time on farm, collection time, or slaughter time due to unforeseen circumstances” – in other words, that “good practice in other aspects of calf management” is frequently not easy to ensure.

Fisher’s and Todd’s studies are therefore only relevant to healthy, clinically normal calves of suitable maturity-for-age where it can be guaranteed that each has received a full ration at time zero. These factors were controlled in both studies, and both groups have qualified their concluding statements accordingly.

Alternative papers by Stafford, Mellor and others<sup>3,5</sup> caution that biological variation exists within any real-life group of calves, and there is always a vulnerable weaker sub-group that will make up a proportion of transported calves. Weaker calves are much less able to cope with the stress of feed withdrawal and transport and may indeed not survive this length of feed deprivation. Variation in management also means that not all calves will successfully feed before collection (the weaker individuals likely to miss out in group feeding situations) and farmers are often too busy to ensure calves receive colostrum hence such calves are energy and immunoglobulin deficient and more susceptible to the stresses of fasting and transport. The Todd and Fisher studies controlled these variables hence have limited applicability to real life situations and the setting of standards.

Furthermore the paper by Fisher’s group should be validated by the scientific peer review process required for publication, before it is used as a basis for setting a standard. There are aspects of the paper that require further clarification (such as the lack of data between 24 and 30 hours, the assumption of linear blood glucose decline over that period, and possible discrepancies between the results and conclusions).

The paper was presented by Dr Fisher at the Australian College of Veterinary Scientists annual conference in July 2010 and again at the RSPCA Queensland World Farm Animal Day in October 2010. Scientists in the audience on both occasions challenged the conclusion supporting 30 hours TOF due to concerns that the results did not support this conclusion.

#### Lack of behavioural data and an incomplete science-based assessment process

The Fisher and Todd studies concentrated on the measurement of physiological parameters but failed to address the range of behavioural indicators which are necessary to complete a comprehensive science-based animal welfare assessment. Besides lying, standing and walking behaviour measured in the Fisher study, no other key behavioural indicators such as vocalisation and attempted sucking activity were recorded. Interestingly, researchers from both groups commented subsequently that calves in their studies showed strong behavioural signs of hunger from 24 – 30 hours TOF.

Under section 1.2.2.1 of the RIS it is stated that the RIS does not deal with “perceived animal welfare benefits” but looks only at scientific research which measures “physiological and behavioural indicators”. Biosecurity Queensland argues that behavioural indicators have not been adequately addressed in the studies underpinning the RIS process, and hence the RIS assumption of equal welfare impost at 18, 24 and 30 hours is potentially flawed.

It is also stated in the RIS (section 4.3.3) that “value judgements” of “hypothetical” animal hunger and discomfort have no place in a science-based RIS. Biosecurity Queensland argues that behavioural measurements properly conducted are a fundamental component of any animal welfare investigation and should have been better addressed in the Fisher study which was explicitly commissioned to determine suitable time-off-feed under Australian conditions.

Earlier in section 4.3 of the RIS cost-benefit analysis, it is stated that the “national consistency criterion III” was a rather subjective measurement requiring a “judgement call” when apportioning cost for this criterion. This would seem inconsistent with the later rejection of the permissibility of “value judgements” where animal hunger or discomfort is concerned.

#### RIS Cost – Benefit Analysis

The RIS cost-benefit analysis (Section 4.0) is fundamentally flawed because it apportions equal welfare impact scores for 18, 24 and 30 hours TOF respectively. There were clearly differences in welfare at 18, 24 and 30 hours as indicated by a declining energy balance throughout this period and a significant proportion of calves hypoglycaemic at 30 hours. Consequently all cost-benefit calculations based on this assumption are disputed.

It is noted that relative weightings of the welfare, cost and consistency criteria were altered for the sensitivity test (shown in Table 9), however this did not overcome the inherent bias within the cost–benefit analysis due to equal allocation of welfare impacts for each of options B, C and D (30, 24 and 18 hours TOF respectively).

#### Comparison with current benchmarks and international standards

Biosecurity Queensland has concerns that the proposal for 30 hours TOF represents a lowering of the current benchmark in Australia and goes against community expectations. It is also well below international standards. Current voluntary codes in Victoria and Tasmania, as well as the previous Australian Meat Industry Council (AMIC) guidelines recommend feeding calves at least every 24 hours. (It is noted that AMIC have amended their recommendation to 30 hours between the first and latest RIS drafts.) Internationally, European Union Directive 91/629/EEC requires once daily feeding of calves, and in the UK 12 hourly feeds are required. In Canada, the recommendation is 12 hourly feeding of calves in transit.

#### Management practices to achieve 24 hours TOF

Section 4.3.2 of the RIS states that most calves are slaughtered within 24 hours of pick up from the farm gate in Australia (90% within 22 – 26 hours and 99% within 30 hours of last being fed). 30 hours is proposed as the Standard so that calves can be fed up to 6 hours before collection. This solution appears to have been favoured in the RIS analysis because it will require virtually no change in current practices throughout the Australian dairy industry.

Biosecurity Queensland's position is that there are clearly identified phases in the current system of bobby calf transport that could be streamlined to achieve a 24 hour maximum time off feed standard, with minimal impost to the farmers, transporters and meat processors. The following adjustments to current practice are therefore proposed:

1. Feed calves just before loading – a requirement to feed calves just prior to loading would save approximately six (6) hours TOF without incurring extra costs to industry.
2. Minimise time at congregation points - the time calves spend idle at congregation points before further transport should be minimised. This would require a coordinated approach to fixed pick up and delivery times for calves that are expected to approach the maximum TOF, allowing significant time-savings.
3. Require same day slaughter at abattoirs - there is currently significant TOF wastage in lairage at abattoirs due to the holdover period before slaughter; for example calves delivered after 10:00am -12 midday are frequently held over for the following day's slaughter. Coordinated delivery of bobby calves to abattoirs to allow same day slaughter would provide significant savings in TOF. Further, more flexibility at abattoirs should be implemented such that there is a much later cut-off time meaning unfed bobby calves are not required to be held overnight.

Biosecurity Queensland believes it is reasonable to expect industry to be facilitating these changes to improve bobby calf welfare and improve the industry's reputation around this issue.

#### Recommendation

It is proposed that the maximum TOF be set at 24 hours with a 12 month phase-in period to allow time to adjust existing practices.

#### References

1. Fisher A, Mansell P, Stevens B, Conley M, Jongman E, Lauber M, Hides S (2010) Report for Dairy Australia – Determining a suitable time off feed for bobby calf transport under Australian conditions (unpublished)
2. Todd SE, Mellor DJ, Stafford KJ, Gregory NG, Bruce RA, Ward RN (2000) Effects of food withdrawal and transport on 5- to 10-day-old calves. *Research in Veterinary Science* 68, 125-134.
3. Stafford K, Mellor D, Todd S (2000) Bobby Calf Welfare. *Surveillance* 27(4) p 6-8
4. Wesselink R (1998) Aspects of survival and welfare of neonatal calves. MSc thesis, Massey University Palmerston North
5. Stafford KJ, Mellor DJ, Todd SE, Gregory NG, Bruce RA and Ward RN (2001). The physical state and plasma biochemical profile of young calves on arrival at a slaughter plant. *New Zealand Veterinary Journal* 49(4), 142-149