

# **Risk Assessment of Discharging Effluent from Stock Truck Holding Tanks to On-farm Systems**

**The issue:**

***“Stock effluent is spilled from trucks onto roads causing health, safety and environmental consequences. The public image of the dairy industry is also damaged by these spillages”.***

**Requirement**

***A solution that addresses the above taking into account the economic impact of any system changes also in respect of farming operations provides risk mitigation measures that may be presented from a biosecurity and food safety perspective to potentially affected farms.***

**Situation Analysis**

The problem arises due to the movement of large numbers of dairy cows and replacements to and from wintering and run-off blocks over a very short period creating a higher likelihood of spills. Reasons for this include:

- stock not being stood off green feed for a suitable length of time prior to trucking.
- the nature of the feed being fed prior to cartage particularly on the dairy platform.
- the effluent storage capacity of trucks being variable- 0-200 litres and no regulatory requirements covering storage capacity.
- limited time available to clean the deck of crates when dirty at the peak periods of cattle movement.
- a limited number of disposal sites to empty tanks in Southland.

Environment Southland has a responsibility to address the issue and have consequently taken enforcement action against some truck drivers for spilling effluent onto the road. This has brought the matter to a head and a number of stakeholders are now seeking practical solutions to minimise or avoid the spillage of effluent from trucks.

Nationally some Councils have installed effluent dump stations for trucks to empty their holding tanks. These are partly funded by Transit NZ and managed by Councils. There are a small number of dump facilities in Southland at present but at least 7 in Otago. Many transport companies have truck wash facilities at their depots. These facilities contain effluent from cleaning the decks but are also being as dump stations. There are also a limited number of dump stations at saleyards and meat processing plants.

**Background:**

Most dairy farmers in Southland move the majority of their herds to wintering or run-off blocks over a 2 - 3 week period from late May to mid June each year. There are approximately 500,000 cows in Southland on just over 700 farms. A truck and trailer can carry 50 cows. The upper limit of movements is set by assuming all cows are shifted i.e. 10,000 truck movements. Herds are shifted varying distances throughout the region with some being shifted to Otago and Canterbury. The majority of

movements are of a duration of less than 2 hours from loading to unloading. The movement of this many cows is a large scale logistical undertaking that stretches all resources in the region and places farmers and stock under enormous pressure. Cows start returning to the milking platform after 8-10 weeks but rather than all being shifted at once they tend to trickle back over a longer time frame with early calvers coming back first. This tends to create significantly fewer effluent spillage issues due to both the number of animals being moved at any point in time and the nature of the feed provided to the animals at the grazing locations.

### **The Proposed Solution:**

Trucks already have holding tanks to contain the effluent with some tanks holding up to 200 litres. It is generally accepted that all stock trucks must have effluent tanks but how much effluent is present at the time of arrival at the final destination will be influenced by:

- the amount of effluent present on the truck at the point of loading
- the transit time
- the 'feed status' of the stock being carried
- any discharge of effluent occurring en route

One possible solution is for truck effluent holding tanks to be emptied on-farm at the destination point into suitable disposal or containment systems that meet the Council discharge rules. In practical terms this could mean discharging effluent into existing dairy effluent systems which is subsequently discharged to pasture or alternatively into purpose built holding tanks that may be subsequently emptied either by application to pasture or to some other area land.

### **Hazard Identification and Risk Management**

There is a potential for an increase in disease transmission to occur associated with the proposed practise of disposing of stock truck effluent on farm. It is essential that should changes occur dairy farmers and other animal industries and those providing farm animal health advice understand the nature and level of disease risk presented and the mitigation steps required to manage the change.

### **Current Practice and the Potential Impact of the Proposed Changes**

Biosecurity/disease management at farm level is the responsibility of the individual farm owner/operator. Their regulated responsibilities are covered by requirements under the:

- Occupational Health and Act in respect of worker safety.
- Biosecurity Act in relation to notification of suspected exotic disease and compliance with any measures undertaken using the powers of this Act to manage any suspected or actual incursion of an exotic disease.
- Biosecurity Act in respect of any National or Regional Pest Management Strategies. Of relevance to dairy, beef and deer farmers is the current National Tb Pest Management Strategy.
- Animal Products Act. For dairy farmers this requires that the dairy processors have in place a Risk Management Plan (RMP) to ensure the safety of products, i.e. milk and colostrum supplied for processing. The ownership of the RMP is with the processor and the responsibility for ensuring compliance is managed by product quality monitoring and on-farm audits. In respect of the animal health requirements all animals contributing to supply must be healthy i.e. free from clinical evidence of disease. The RMP places no specific requirement on farmers in relation to the overall biosecurity status of their

farms, nor does it require any form of biosecurity risk management plan to be in place. The responsibility for these areas is with the farm operator.

On farm management of the animal health status and disease transmission is currently based on decisions made by the operator and informed by many sources of information, the primary one being the farm operator's veterinarian. The focus of attention is primarily around endemic diseases of potential economic significance to the farming operation. Examples of these include:

- Salmonella spp. including S. brandenburg
- Mycobacterium avium subspecies paratuberculosis. The organism causing Johnes disease.
- Mycobacterium bovis. (bovine Tb)
- Leptospirosis
- EBL
- BVD
- IBR
- Parainfluenza
- Rotavirus
- Coronavirus
- E coli F5
- Clostridia
- Neospora
- Mastitis pathogens
- Neospora
- Endoparasites
- Ectoparasites

Other disease organisms transmissible by effluent include:

- Cryptosporidia
- Campylobacter
- Giardia

Effective management relies on mitigating the risks presented by this organism by both prevention of entry and/or management on-farm by undertaking risk mitigation measures such as vaccination or animal testing. Essential to good management is the identification by observation of animals potentially affected disease followed by accurate diagnosis and treatment. Where justified, risk mitigation measures will be applied to ensure significant on farm economic impact is avoided. This includes identification of the source of the problem where possible. The current risks presented by movement of stock between farms is confined to the diseases carried by those animals involved including organisms present in gut fill. As a consequence of transport limited faecal contamination of the feet will also be present. Post arrival on-farm animal observation along with mitigation measures such as quarantine drenching will limit or identify disease issues of importance.

The proposal of discharging effluent from stock trucks into the farm dairy system without additional risks mitigation step(s) has the potential to increase the incidence of many of the diseases listed above for the following reasons:

- Effluent from stock trucks will potentially be comprised of material from many animals other than those specifically delivered to the property of destination.
- The species and disease status of the animals carted in preceding loads is unknown to the farmer receiving the stock. In the event of a disease being present or subsequently occurring in these stock the farmer is unlikely to be

advised of the situation under current communication channels and due to privacy of information or client confidentiality requirements. The only situation where this may not apply is in the event of an exotic disease incursion where the powers used under the Biosecurity Act allow information sharing.

In regard to the above no attempt has been made to quantify the magnitude of the increased risk over and above that currently presented by the existing animal cartage situation. For farms undertaking a large amount of between farm trading with little consideration given to their current status the increased risk is likely to be small. For well managed operations where major attention is applied to high quality animal health management the risk of introduction of disease is likely to be much higher. In the latter situation holding of truck discharge and application to non grazing land may effectively manage the risks presented.

### **Current National Issues**

Significant effort is currently being made to examine the effectiveness of animal biosecurity measures both in relation to endemic and exotic disease prevention, detection and management. These include:

- A review of the national surveillance strategy with the aim to improve disease surveillance and move it to a much more proactive position than the present fragmented and reactive state.
- The design and proposed implementation of a national animal identification and tracing system for cattle and deer. Its primary drivers are market access, biosecurity and food safety. The current proposal aims to have a mandatory system in place by late 2011.
- A joint decision-making and cost-sharing agreement between animal industries and MAF for the more effective surveillance, readiness, response and recovery from exotic disease incursion. This would also cover endemic diseases where management was required as a consequence of changed economic impact.
- Key customers of agricultural products increasing expectations that the management of biosecurity and health status of animals and animal products meets best international practice.

### **Conclusion**

The effluent proposal as outlined in the issues section will present increased risk of disease transmission over and above those currently present if it was to proceed without additional risk mitigation measures. The magnitude of the risk increase will differ depending on the current biosecurity management measures being applied on-farm.

Initial examination has not identified any regulatory requirements either under the Biosecurity Act or Animal Products Act that would preclude the current proposal from proceeding.

The processing industry biosecurity expectations driven both by management of supply chain business risk and key customer expectations are increasing and a number of initiatives are currently underway that will require improved management of biosecurity hazards in the near future. These will be essential in demonstrating equivalent outcomes to those measures adopted by industries in countries where we currently market our products.

If the proposal was to proceed then effective mitigation steps will need to put in place to ensure no change to that already existing is likely to occur.

Whilst no current dairy industry or regulatory requirements exist to prevent the proposal from proceeding consideration needs to be given to the fact that that future requirements placed on the animal production sector will require higher levels of biosecurity hazard avoidance/management.