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Commonwealth Scientific and Industrial Research Organisation Review: Red Imported Fire Ant Scientific Principles and Controls

Summary of recommendations for consideration

Materials that may carry fire ants	Current fire ant movement controls (state and interstate requirements)	CSIRO recommendations
<p>Hay Including baled lucerne hay.</p>	<p>Regulations: Hay must be stored correctly. It should be covered and stored on a concrete hardstand, plastic sheeting or other material that cannot be penetrated by fire ants. The area should then receive a 30 cm perimeter treatment.</p> <p>Hay can be stored on compacted ground (not sand) but the whole surface must receive a barrier chemical treatment. Hay produce must complete the final two rakings within 24 hours of each other, and then bale the material within 24 hours of the last raking.</p> <p>Baled materials must then be moved off the paddock within 24 hours.</p> <p>Other:</p> <ul style="list-style-type: none"> • Inspection of hay • Property freedom • Bagging hay • Fumigating hay • Disturbance of hay 	<ul style="list-style-type: none"> • Hay cannot be treated with chemicals if it will be used to feed livestock. • In most farm settings, it is difficult to store hay reliably to prevent infestation and, therefore, cannot be considered a “safe product” under the existing regulated conditions. • Recommended solutions include chaffing and bagging for high-risk movements such as when moving hay outside the fire ant biosecurity zones. Note: This approach may not be cost-effective, but it provides an alternative for hay produced in zone 2 for movement outside of the zones. <p>Storage of hay</p> <ul style="list-style-type: none"> • A fire ant resistant surface, such as compacted ground (but not sand) treated with chemical is most secure. • Concrete or bitumen are effective if there are no cracks or damage on the surface. Fire ants will build nests in cracks or tears, and beneath or in the hay. • The same as the above applies for plastic sheeting. It must not have tears, holes or gaps. • Covering the hay is a good way to prevent fire ants flying onto or into the hay. Shade cloths and tarpaulins likely reduce the risk.



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- Only storing in enclosed sheds or greenhouses will provide full protection. The amount of protection a partially enclosed shed provides depends on the length of time the hay will be stored and the density of the local fire ant population.
- Storing hay off the ground helps reduce risk and makes inspecting for fire ants under the stored product easier. No height range has been specified. Baled hay stored off-ground but only with a small distance between the ground and the product would not protect the hay from infestation. The risk of hay stalks and debris collecting under the stack is too high. In addition, storing off-ground only protects from ground ants, not those flying in.
- Perimeter or barrier chemical treatments are effective, if the chemical layer remains completely intact (no gaps in coverage). This protects against ground ants.

Other

- When it comes to disturbance, the action of cutting and raking hay in the 24 hour timeframes will not be efficient to dislodge any airborne ants landing in hay before baling. This protocol is not likely to be completely effective and will be difficult for some operators (large-quantity hay producers) to achieve.
- Bagged hay should be kept in an enclosed shed to reduce the risk from ants flying in. The process of bagging can limit an ant's ability to survive. However, if disturbance is not vigorous, ants could survive in bagged products and be released once opened. For example, hammer milling or chaffing would be effective).
- Plastic wrapping of hay to create silage creates unsuitable habitat for ants, reducing risk.
- If hay is not to be used for feeding livestock, fumigation with methyl bromide is effective at killing all stages of fire ants however it may not be practical and/or cost-effective.



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National Red Imported Fire Ant Eradication Program

- Property freedom/inspection by a trained/qualified person will have 80 per cent detection confidence for established nests. If a fire ant detection dog is used, the confidence is 100 per cent. However, inspections will not detect new, underground nests and, therefore, are not a reliable as a stand-alone strategy.
- Property inspection and routine baiting of the area surrounding stored hay will work to minimise chance of nearby infestations.