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Molecular diagnostics for the detection of strawberry viruses in Australia

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In Australia certified strawberry runners are supplied through the Victorian Strawberry Certification Authority and the Queensland Strawberry Runner Certification Scheme. The strawberry runners are certified on the basis of their high health status. For this high health status to be achieved nucleus collections are held by each scheme and are indexed annually for the major fungal, bacterial and virus-associated diseases of strawberries known to occur in Australia. Both nucleus collections are tested annually in spring for virus-associated diseases via the biological indexing method of petiole grafting onto sensitive indicator species. While this method is reliable and sensitive, it is labour intensive, expensive, time consuming (6–8 weeks to return a result) and can only be reliably done in the spring and early summer months of each year. Recent advances in molecular techniques have been published overseas for the detection of most of the viruses that infect strawberry plants. Molecular indexing via the polymerase chain reaction (PCR) offers the Australian strawberry industry a more rapid and cost effective method of indexing the strawberry nucleus collection. PCR returns a diagnosis in 1–2 days resulting in a much reduced cost to industry for the annual indexing of the nucleus collection.