

## Schedule

	No.	Task	Evidence	Code	Judgement
Achievement	1	Purpose stated	Purpose must involve estimating the population proportion of trees with XXXXX disease.	A1	
	2	Evidence of sampling	For example, trees in diagram highlighted.	A2	
	3	Sample statistic calculated.	Sample proportion calculated.	A3	
	3	Inference about the population drawn.	Statement must say something like "an estimate of the population proportion of trees with XXXXX disease is 0.xyz" or "an estimate of the proportion of all trees in the orchard with XXXXX disease is 0.xyz " (where 0.xyz is the sample proportion above).  The inference must be a point estimate, be sensibly rounded and demonstrate an understanding of the difference between a sample statistic and a population parameter. An understanding of context of the investigation needs to be demonstrated.	A4	One sample statistic and one corresponding inference is enough.

Merit	4	Sampling method described.	<ul style="list-style-type: none"> <li>• Name of method</li> <li>• Number the population members</li> <li>• Use random numbers with the appropriate number of digits</li> <li>• Generate/obtain random numbers</li> <li>• Match random numbers with population members</li> <li>• Ignore repeats or numbers “out of range”</li> <li>• Repeating until the desired sample size achieved</li> <li>• Select the starting point (systematic sampling, random number tables)</li> <li>• Determine the interval length (systematic)</li> <li>• Determine sub-sample sizes(stratified)</li> </ul>	M1	While a minor error or omission can be accepted there must be enough detail in the description to enable replication.
	5	Sampling method justified.	<p>SRS – easy and quick, no strata, produces an unbiased sample. If bias is mentioned then a contextual understanding of it would be expected, eg giving an example of a case where a biased sample would be obtained.</p> <p>Systematic – no known patterns of occurrence of XXXXX disease (and not contagious so no groups of diseased trees), easy, gives a selection of trees throughout the orchard.</p> <p>Stratified – The identification of possible subgroups that are significantly different in terms of the proportion of diseased trees would be needed.</p>	M2	Replacement evidence (eg a valid comparison of the method used with one other method) could be found in qn6.
	3	Inference justified.	<p>Justification is unambiguous and will refer to sample value – eg estimate of population proportion is 0.xyz because sample proportion is 0.xyz.</p> <p>OR</p> <p>A comment that recognises the variability of sampling – that if another sample was taken then it is likely a different inference would be obtained (but if the process was repeated a number of times it would be expected that most sample proportions would be ‘close’ to the population proportion).</p>	M3	
					Achievement plus All of M1, M2, M3

Excellence	6	Sampling methods evaluated.	<p>The method used is clearly justified (qn5) and two other sampling methods (qn6) are discussed in detail.</p> <p>Discussion to include:</p> <ul style="list-style-type: none"> <li>• possible contexts and a purpose for sampling – contexts and purposes might differ from those in the task but they need to be appropriate for the selected sampling methods</li> <li>• description of the sampling methods that identifies the key features and differences between them</li> <li>• full description of how the inference would be made.</li> </ul> <p>Comments must use correct statistical language and have no contradictions or evidence of misunderstanding.</p> <p>Examples of acceptable responses for each method need to be included by assessors.</p>	E	Where some comments lack depth other evaluation comments (such as a detailed variability comment) would support the award of Excellence
					Merit plus E