

Germination Rounding Procedure

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Rounding the Normal Seedling Result

The normal seedlings percentage is rounded to the nearest whole number.

- XX.0 or XX.25 are rounded to XX for instance 88.25 to 88
- XX.5 or XX.75 are rounded to XX+1 for instance 88.5 to 89 and 88.75 to 89.

Rounding all Components in a Germination Test Result

The rounding procedure when all components have to be reported (normal and abnormal seedlings, hard, fresh and dead seeds) is carried out in 4 steps.

Step 1- Round the normal seedling percentage and add this to the integer component of all the other values. If the total is 100 report the values. If the total is less than 100 proceed to step 2.

Step 2- Round the value with the greatest decimal part to the upper whole number. If values have the same decimal parts then rounding up is only carried out on one according to the priority:
abnormal seedlings are rounded up before hard seeds which are rounded up before fresh seeds which are rounded up before dead seeds.

Step 3- Reduce all values to their integer component and total the values. If the total is 100 report the values obtained. If the total is less than 100 proceed to step 4

Step 4- Repeat steps 2 and 3. After the repeat the total will be 100 and the values obtained are reported.

In example 1 rounding the normal seedlings and adding this to the integer parts of the other components of the germination test results in a total of 100. The values obtained once completing step 1 are reported therefore.

In example 2 after rounding the normal seeds and adding this to the integer values of all other components a value of 98 is obtained (Step 1). The other components have therefore to be rounded. The component with the great-

Example 1

	Normal Seedlings	Abnormal Seedlings	Hard Seeds	Fresh Seeds	Dead Seeds	Total
Values	90.5	2.5	2	4	1	100
Step 1	91	2	2	4	1	100

Example 2

	Normal Seedlings	Abnormal Seedlings	Hard Seeds	Fresh Seeds	Dead Seeds	Total
Values	90.25	2.5	2.5	4	0.75	100
Step 1	90	2	2	4	0	98
	90	2.5	2.5	4	0.75	
Step 2	90	2.5	2.5	4	1	
Step 3	90	2	2	4	1	99
	90	2.5	2.5	4	1	
Step 4 (Repeat of Step 2)	90	3	2.5	4	1	
Step 4 (Repeat of Step 3)	90	3	2	4	1	100

Example 3

	Normal Seedlings	Abnormal Seedlings	Hard Seeds	Fresh Seeds	Dead Seeds	Total
Values	90.5	2.5	2.5	3.75	0.75	100
Step 1	91	2	2	3	0	98
	91	2.5	2.5	3.75	0.75	
Step 2	91	2.5	2.5	4	0.75	
Step 3	91	2	2	4	0	99
	91	2.5	2.5	4	0.75	
Step 4 (Repeat of Step 2)	91	2.5	2.5	4	1	
Step 4 (Repeat of Step 3)	91	2	2	4	1	100

est decimal part is rounded first. The dead seeds have a decimal parts of 0.75 which is greater than the decimal parts of the other components (Step 2). After rounding the dead seed and adding this to the integer parts of all the other components a value of 99 is obtained (Step 3). Rounding is continued and the component with the greatest decimal part is rounded. Both abnormal seedlings and hard seeds have decimal parts of 0.5 and abnormal seedlings is given the priority over hard seeds (Step 4). The abnormal seedlings are rounded upwards. After rounding the abnormal seedlings and adding them to the integer parts of all the other components a value of 100 is obtained (Step 4). The results obtained are reported.

In example 3 after rounding the normal seeds and adding this to the integer values of all other components a value of 98 is obtained (Step 1). The other components have therefore to be rounded. The component with the greatest decimal part is rounded first. Both fresh and dead seeds have decimal parts of 0.75 and fresh seed is given the priority over dead seed (Step 2). After rounding the fresh seed and adding this to the integer parts of all the other components a value of 99 is obtained (Step 3). Rounding is continued and the component with the greatest decimal part is rounded. The dead seed is rounded upwards. (It has a decimal part of 0.75 which is greater than the decimal part of abnormal seedlings and hard seeds) After rounding the dead seed and adding this to the integer parts of all the other components a value of 100 is obtained (Step 4). The results obtained are reported.

A flow chart of the procedures involved is shown on the right.

Copies of a computer program that will carry out the calculations for you automatically are available on request from Joël Léchappé (Joel.lechappe@geves.fr)

Please Note: For multigerm seed units only one normal seedling per unit is counted to calculate the result. On request, the number of units producing one, two or more than two normal seedlings may also be reported, expressing the results as a percentage of the total number of units which have produced at least one normal seedling or alternatively the total number of seedlings produced by a given number of seed units. ■

