



NOPOWDERYMILDEWPRO

GrowLegal GrowClean

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Subject: Protocol for Seed Testing

Seed treatment:

The seeds should be spread evenly in a single seed layer (at least 200 seeds per each treatment) and should be illuminated by the LED Light Bar (4.2-5.0 W) for 2 minutes (Treatment 1), 5 minutes (Treatment 2) and 10 minutes (Treatment 3). Each of the three batches should be turned over and exposed again for the same amount of time. The distance between the LED Light Bar and the layer of seeds must be 20 cm (8 inches).

Seed germination tests:

Cannabis seeds need the following to get the best germination rates: Place the plates somewhere warm and away from direct light. Cannabis seeds can germinate in many temperature conditions, but grow best between 75 and 80 degrees Fahrenheit (23-26 C). Check the seeds every day to ensure that the tissue does not dry out. Spray the tissues with water if necessary. Within a few days some or all of the seeds should open and put out a root. It is common for cannabis seeds to open within 72 hours of being put in the germination medium. Less commonly, some seeds may need up to 10 days or even two weeks to open and put out a root.

Seed germination tests measure the number of healthy, well-developed seedlings, not just whether a root has emerged from the seed. Because of this, a germination test will take at least 7 days under ordinary laboratory conditions and depending on a crop/cultivator.



Test description:

The standard lab test of this sort is based on 200 seeds. Seeds are germinated under optimum environmental conditions for an optimum period of time according to species. Distinctions should be made between normally and abnormally germinated and dead seed.

Result reported:

The results should be based on the percentage of germination (taking into account the percentage of dormant seeds when relevant) on every day until the final stage when no further germination is observed. Major quality problems observed on a sample must be noted and quantified on the test report. A T-test or some other statistical test should be applied for the statistical analysis. The final table should include the data (percentage/day) of normally and abnormally germinated and dead seed.

Seed viability testing with tetrazolium:

The aim of this optional test would be to determine which seed tissues are alive and have the potential to germinate under optimum conditions. Tetrazolium is a colorless chemical that reacts with living cells and stains them red. Consequently, living tissue in seed embryos can be distinguished from non-living tissue. It will not detect seedling abnormalities; it only detects what tissues are alive or viable. In light of this, a tetrazolium test and germination test result for the same sample will not always be comparable. This is because not all factors affecting the seed as it actually germinates are detected by tetrazolium tests (i.e. chemical damage, dormancy, disease, etc.).

Tetrazolium tests are particularly good for detecting heat-damaged seed as this kind of damage creates a unique staining pattern. If a seed sample is tested for germination immediately following the point of damage, the seed may not have deteriorated fully and the germination potential may be overestimated. With a tetrazolium test it is possible to detect the very early stages of heat damage or other damage. Mechanical damage to the seed embryo can also be assessed with tetrazolium.