Peat-lite Mixes for Seed Germination

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In February and April of 1963 extensive seed germination media tests were set up in hopes that one particular mixture would give superior results over all the rest. We were looking for one mixture that would give us uniform germination, ease of maintenance, good, but not soft growth, a good root system, good holding capabilities, and could be made up time after time knowing that the results would be consistent.

In Table I are found the various types of germination media tested, which included both soil and peat-lite combinations. All the artificial soil mixes were made up to the specifications of the Cornell, Peat-lite Mix A, except for the amounts and types of nitrogen carriers. Some suggestions have been advanced that the amount of lime could possibly be cut in half and this will be checked in the 1964 tests. The vermiculite used was the fine #4 size instead of the #2 horticultural grade. The flats used were 12″ x 24″ x 3″ and 6 bushels of mix would fill approximately 24 of these flats.

Table I. List of seed germination media tested Spring 1963

1. 1: 1: 1: soil-peat-fine perlite mixture
2. Sphagnum moss over soil
3. Fine white sand over soil
4. Vermiculite* with seven fertilizer treatments
5. ½ vermiculite* ½ sphagnum peat moss with seven fertilizer treatments
6. ½ vermiculite* ½ sphagnum moss with two fertilizer treatments

*Vermiculite used was the fine No. 4 grade

All the test flats were soaked down the day before sowing. The following day the flats were marked out in rows approximately ¼ in. deep, seed sown, and except for the petunias and snapdragons the seed was covered slightly with the #4 vermiculite. After sowing the flats were misted down with a low volume size fogging nozzle. The flats were placed in a 65 degree night temperature house for germination and then moved after everything was well started to a 50 degree night temperature house. During the last test in April, however, proper temperatures were almost impossible to control and they usually were much higher than for the February test.

Under the better controlled environmental conditions in February, several of the media gave usable seedlings, but two were outstanding. One was the vermiculite-peat mix, liquid fed twice, starting one week after germination and again 10 days later at the rate of 2 tablespoons of 20-20-20 per gallon of water, with at least a quart of the solution applied to each flat at each application.

The other was the same mix, only with ammonium nitrate added at the time of mixing at the rate of 2 lbs. per cubic yard, or approximately 9 ounces per 6 bushels of mix. After seeing the results of the February test this ammonium nitrate mixture was used for starting all of our annual flower trial material for the 1963 season.

The April test really separated the "men from the boys." The soil mixture and the sphagnum moss over soil gave good results in February, but in this last test they were extremely difficult to maintain. Several of the other media developed all sorts of problems. However, the two vermiculite-peat mixes mentioned above were still outstanding with the liquid fed flats being slightly better.

Over all, the mix with the ammonium nitrate was the easiest to maintain and gave the quickest, transplantable seedlings. The liquid fed mix, however, had the best holding properties and the seedlings had a better developed root system. It was much easier to remove the seedlings from both mixes than from the soil combinations and they transplanted and grew very nicely.

If you should like to try a few flats of one of these vermiculite-peat mixes, this year against your regular procedure remember the following comments:

1. The sphagnum peat moss will shred and mix easily if it is damp.
2. Make sure you get the limestone, superphosphate and ammonium nitrate if added, thoroughly mixed with the vermiculite and peat.
3. Thoroughly soak the mixture the day before using. It may require going over the flats three or four times.
4. If you plan to liquid feed only, make sure you feed at least two times on schedule before possibly trying to hold or regulate the rate of growth of the seedlings.
5. Do not hold the seedlings below 50 degrees as some of them may turn chlorotic.

Again this year we will test these mixtues along with checking our new ideas to possibly make them even better and more trouble free.

Table II. List of seed types used in test, Spring 1963

1. Petunia
2. Snapdragon
3. Verbena
4. Impatiens
5. Pansy
6. Coleus
7. Dianthus
8. Delphinium
9. Alyssum
10. Portulaca
11. Aster
12. Zinnia
13. Marigold
14. Celosia
15. Salvia
16. Ageratum
17. Vinca
18. Pepper
19. Tomato