

SPHAGNUM MOSS IN POT MUM ROOT MEDIA

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Potted chrysanthemums are forgiving. They usually flower acceptably in spite of small mistakes. This report concerns the use of sphagnum moss (not peat) in root media and how it will correct some mistakes.

As reported in the February issue (#109), sphagnum moss will increase aeration in a root medium at the same time that it increases water holding capacity. This means that the plants will not suffer as much if watering is inadvertently delayed a bit and, at the same time, overwatering is less likely to occur. In addition, sphagnum moss has therapeutic value, suppressing the growth of soil-borne plant pathogens thus reducing disease.

Chrysanthemum 'Circus' rooted cuttings* were potted five per six inch plastic pot with five pots in each of five treatments (two treatments were also duplicated). Root media were mixed as follows:

	<u>Soil Compost</u>	<u>Sphagnum Peat</u>	<u>Sphagnum Moss</u>	<u>Perlite</u>
2:1:1:2	2	1	1	2
2:2:2	2	2		2
3:2:1	3	2		1
C M 1	Commercial Mix #1			
C M 2	Commercial Mix #2			

Nothing was added to the commercial mixes. To the other mixes were added dolomitic limestone, 20 lbs/yd³ (12 kg/m³); 0-20-0 superphosphate, 5 lbs/yd³ (3 kg/m³); and Electra 5-10-3, 3 lbs/yd³ (1.8 kg/m³). They were placed immediately on capillary pads in a 60°F house and watered in. Fertilizer was applied overhead at 450 ppm N from 17-5-23 (UConn Mix, see Bulletin NE 2 Nutrition of Greenhouse Crops). A B-Nine spray was applied when shoots were about 1" long.

The first difference noted was more rapid root action. New root activity appeared to be about 50% greater in the medium containing sphagnum moss on day 2. It was also better in Commercial Mix #2 (CM2) although subsequent growth was not.

*Supplied through the courtesy of Stafford Conservatories, Stafford Springs, CT.

The second difference appeared on the plants growing in 2:1:1:2 soon after the mums were pinched. More breaks developed earlier, and were larger and increased more on each cutting. As shown in Table 1, more flowering stems developed per plant in the 2:1:1:2 medium (moss medium).

Table 1. Growth measurements of pot mums 'Circus' in sphagnum moss amended root media.

	<u>Fls/Pot</u>	<u>Stems/Pot</u>	<u>Fls/stem</u>	<u>Ave. Ht.</u>
2:1:1:2	98.8	18.5	5.33	16.8
2:2:2	86.5	17.9	4.84	16.1
3:2:1	95.0	16.3	5.79	16.1
Commercial #1	53.6	17.4	3.08	15.6
Commercial #2	46.0	16.0	2.88	13.4

The third difference is the size of the mature plant in 2:1:1:2. More stems developed per plant together with an increased number of flowers per stem. This resulted in the highest number of flowers per pot of any of the five media (Table 1). A fourth difference, a slight increase in height, may be the result of greater vigor. This 0.7 inch increase was not excessive and, in some markets, is desirable. It could have been reduced by a second spray of B-nine, or by adjusting the growth schedule.

The finished plants in 2:2:2 were nearly as good as those in 2:1:1:2. The 2:2:2 root medium is the standard used in the UConn Floriculture Greenhouse for pot mums grown on capillary mats.

The 3:2:1 medium, containing half soil, is too heavy for pot mum growth on capillary mats. Contrary to past experience, these plants survived, developed a low number of breaks per plant but then increased in vigor and actually produced more flowers per stem than the other treatments. The number of flowers per pot was almost as high as those in 2:1:1:2.

Plants in Commercial Mix #1 had slightly fewer stems per plant and fewer flowers per stem. The total flower count was considerably lower but the pots were still commercially acceptable.

Plants in Commercial Mix #2 showed good early root activity. However, subsequent growth was very poor and the mature plants were not commercially acceptable. It appears that a heavier fertilizer schedule is required in this mix. It is regrettable that the fertilizer content of soilless root media cannot be placed on the label without registration in each state and calling them fertilizers even though the total fertilizer nutrients incorporated is less than 1%.

In summary, this experiment confirms results from some 14 other trials with sphagnum moss. The primary result seems to be a stimulation of early root activity. This translates into additional vigor during the life of the plant. With increased aeration along with higher water holding capacity, some small mistakes in culture may be "covered up," and the keeping quality after sales may be enhanced.