



# Plant Health Care Inc.

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# Technical Bulletin

061 10/18/02

## VAM FUNGI SPORE AGE VIABILITY TEST

Five lots of aged VAM fungi spore cocktails were tested for viability. The tests were performed on representative samples removed from VAM cocktail batches being shipped from the production facility in Texas to Plant Health Care, Inc.'s headquarters in Pittsburgh. The samples of each lot have been stored in an inoculant storage room since they were prepared. The inoculant storage room has a wall-mounted A/C in addition to the building's central A/C. The temperature fluctuates between 18 and 22 C in the room.\* The cocktails are stored inside zip-loc bags on the shelves which are covered with black plastic sheeting. The spore collection includes representative samples of all lots of VAM fungi spore cocktail shipped to Pittsburgh since 1998.

The test was performed by our routine bioassay procedure using sweet corn as host. Inoculation was done on 8-28-02. After 43 days of incubation in the greenhouse, roots from each cup were processed for staining on 10-10-02. Sample information and % root colonization are presented in the following two tables.

Samples used:

Lot I.D.	Spore density	Amount used per cup for assay*	Storage time
4-22-98	2,819/g	89 mg	4 yr. 4 mon.
10-14-98	3,217/g	78 mg	3 yr. 10 mon.
4-16-99	1,759/g	142 mg	3 yr. 4 mon.
10-15-99	2,869/g	86 mg	2 yr. 10 mon.
4-14-00	1,938/g	129 mg	2 yr. 4 mon.

\* Amount used per cup contained approximately 250 spores.

### % Root Colonization Data

Lot I.D.	Cup 1	Cup 2	Cup 3	Cup 4	Average
4-22-98	38%	28%	35%	42%	36%
10-14-98	56%	45%	58%	60%	55%
4-16-99	36%	45%	50%	52%	46%
10-15-99	70%	54%	41%	53%	55%
4-14-00	62%	60%	48%	65%	59%

### Conclusion:

The results show these spore cocktails are still viable after more than 4 years of storage. The variability in infectivity among the various storage dates is probably due to numerous natural factors, and not merely age. The spores from 10-14-98 had nearly the same infectivity as those of 4-14-00 (55% vs. 59% respectively), despite an 18-month difference in their respective ages. Spores have the longest shelf life of any of the various VAM fungi propagules. Remember that these spores are in concentrated form from production, through extraction and storage. They have not been mixed with other ingredients to make "products".

\* Upon arrival in Pittsburgh, these spores are stored in an air-conditioned room at the production plant, until needed.