

PENNSSTATE



2009 Trichoderma Green Mold Survey Results

American Mushroom Institute

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2009 Trichoderma Survey

- Mailed to 72 growers across US
- 40 Responses
- Baseline data for quarterly surveys (online)

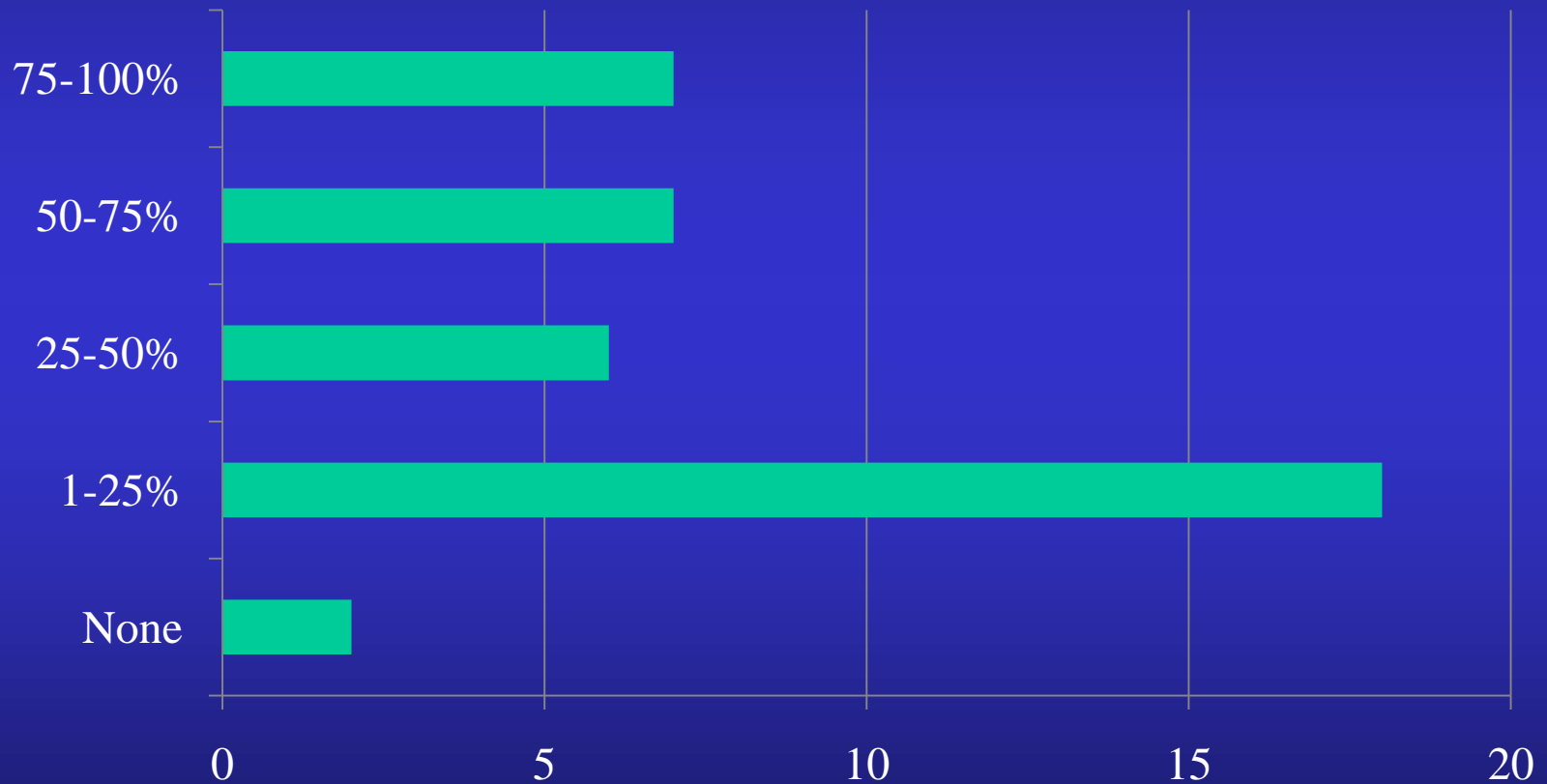
Trichoderma severity, controls and economic impact

Trichoderma Survey

1) Was Trich present on your farm

- 95% YES
- 5% NO

Percent growing rooms with Trichoderma symptoms



Trichoderma Survey

3. First appearance on farm:

- | | |
|--------------------------|-----------------------|
| a) spawn run | Never>Sometimes |
| b) case hold | Sometimes>Never>Often |
| c) 1 st break | Sometimes>Often>Never |
| d) 2 nd break | Often>Sometimes>Never |
| e) 3 rd break | Often>Sometimes>Never |

Trichoderma Survey

4) Number of spots/room at different crop stages (0-10, 10-50, 50-100, >100):

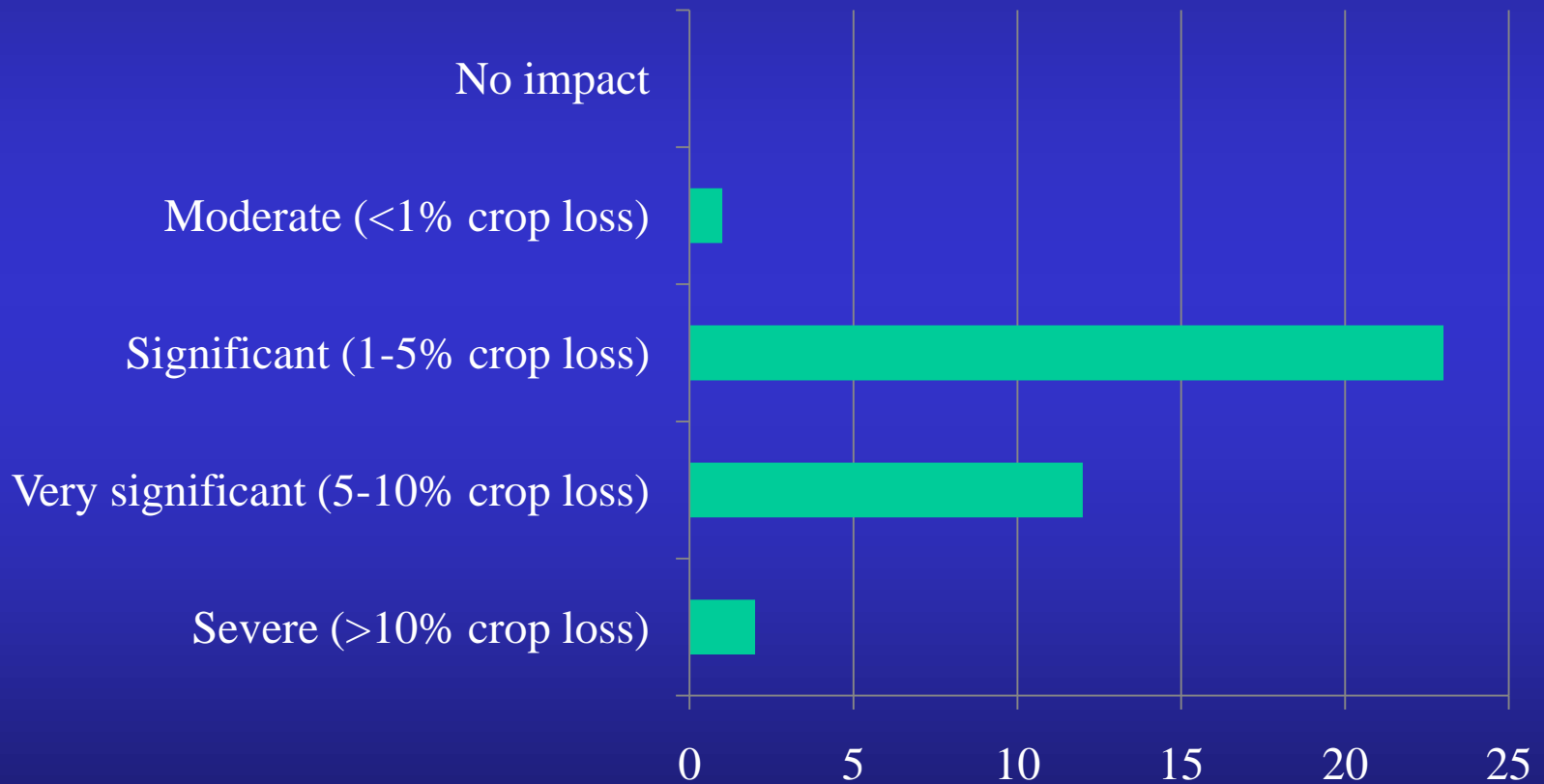
- | | |
|--------------------------|--|
| a) spawn run | 100% (0-10) |
| b) case hold | 90% (0-10), 10% (10-50) |
| c) 1 st break | 74% (0-10), 26% (10-50) |
| d) 2 nd break | 38% (0-10), 53% (10-50), 9% (50-100) |
| e) 3 rd break | 24% (0-10), 62% (10-50), 12% (50-100)
3% (>100) |

Trichoderma Survey

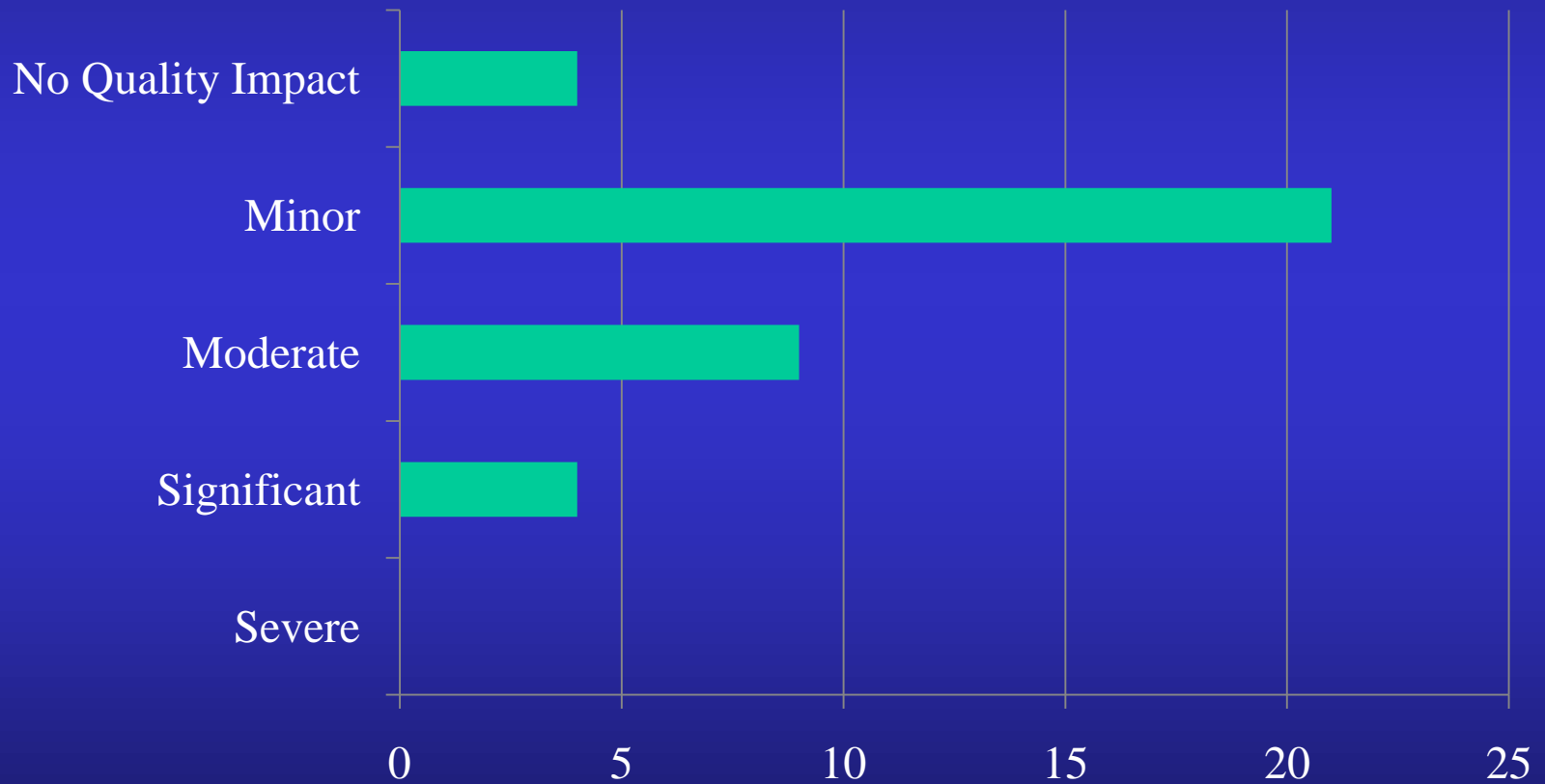
5) Trichoderma impact on Farm:

a) Major Problem	13%
b) Moderate Problem	34%
c) Minor Problem	37%
d) Not a Problem	16%

Trichoderma Impact on crop yield



Trichoderma Impact on Quality



Trichoderma Controls Utilized

- Cultural (PI/PII) 31/31
- Sanitation/Fly Control 38/38

Trichoderma Controls Utilized

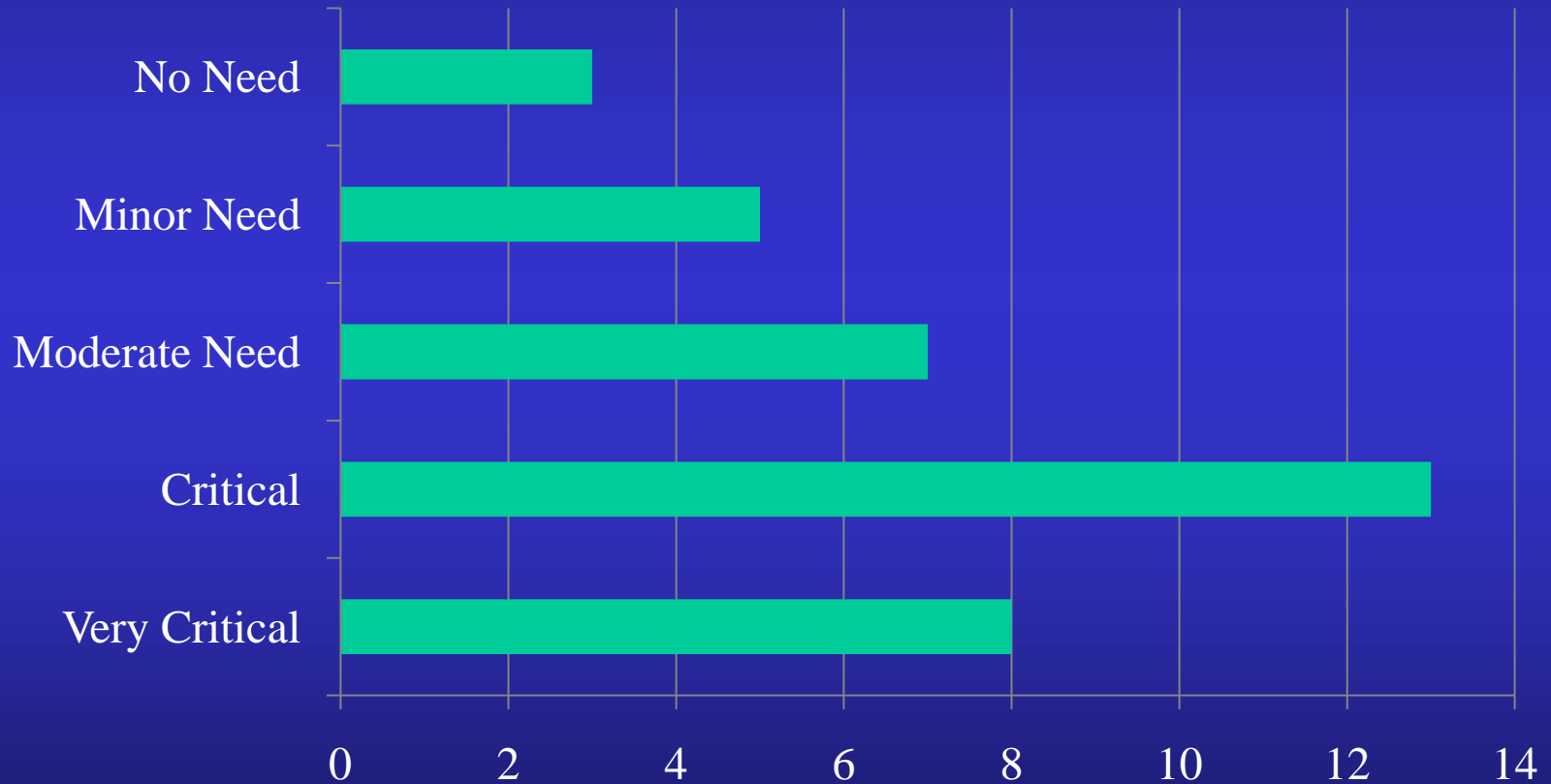
- Spawn Treatment 55% Yes - 45% No
(80% Topsin, 20% Jazz)
- Supplement Treatment 62% Yes – 38% No
(70 % Topsin, 5% Jazz, 48% Mertect)
- Drench after Casing 74% Yes – 26% No
(22% Jazz, 72% Mertect, 29% other)

Trichoderma Survey

9) Satisfied with current control agents

- 50% YES
- 50% No

Need for Additional Effective Control Agents



Trichoderma Survey

11) Farm impact from Trichoderma:

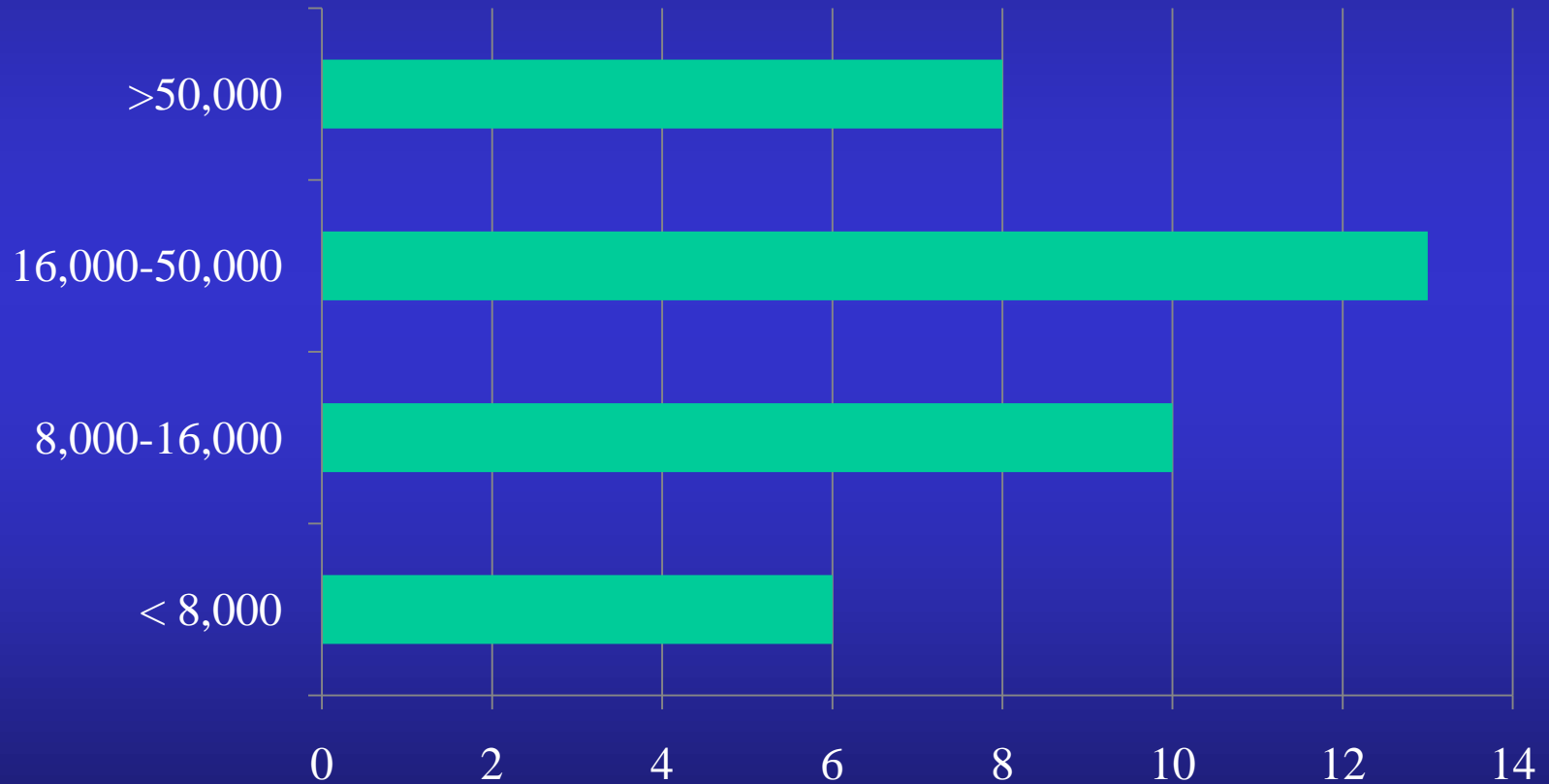
- | | |
|------------------------------------|-----|
| a) Serious threat to survival | 3% |
| b) Serious threat to profitability | 13% |
| c) Moderate problem | 49% |
| d) Minor issue | 32% |
| e) No issue | 3% |

Trichoderma Economic Loss

35 responses out of 40

Total loss = \$820,000 to \$5,715,000
(\$20,500 to \$142,875 per farm)

Square footage cased/week



Written Comments:

- Trichoderma more of a problem with whites than browns
- Seasonal Variations – summer worse
- Wet conditions and high fly populations

Supportive of AMI for labeling of Mertect as spawn coating?

- YES 97%
- Comments:
 - If it's tested and works
 - If it doesn't effect casing treatments
 - Doesn't find Mertect effective for anything in any scenario

June 2010

- Syngenta – received label for Mertect to be used on spawn
- Except: NY, CA, HI and PR

-2-

DIRECTIONS FOR USE

CROP USE DIRECTIONS

Mushrooms (*Agaricus* spp.) - Dry Bubble (*Verticillium fungicola*), Wet Bubble (*Mycogone perniciosa*), Cobweb (*Dactylium dendroides*) and Green Mold (*Trichoderma* spp.):

FOR USE AS AN ADMIX WITH MUSHROOM SPAWN GRAINS, MUSHROOM GROWING SUPPLEMENT, AND/OR AS A DRENCH DURING NORMAL WATERING OPERATIONS FOR MUSHROOM GROWING BEDS AT CASING OR BETWEEN BREAKS

NOTE: Do not exceed a combined total of 20 fl. oz. per 1,000 sq. ft. of product, between the various applications to spawn grains, supplement, and mushrooms. This amount may be used in various treatment regimes. Please refer to the tables below for the rates for the various usage so that the 20 fl. oz. per 1,000 sq. ft. is not exceeded.

Spawn Grains: Apply a maximum of 5.4 fl. oz. of Mertect 340-F per 1,000 sq. ft. Follow the table below to determine the fl. oz. of Mertect 340-F that can be mixed with the spawn to deliver 5.4 fl. oz. per 1,000 sq. ft.

Dosage Table for Use on Spawn Grains

Do not apply Mertect 340-F to gypsum, limestone, or chalk. Admix Mertect 340-F directly onto spawn grain.

Pounds spawn per 8000 sq. ft.	Max. fl. oz. Mertect per 100 pounds spawn
960	4.5
1040	4.1
1120	3.8
1200	3.6
1280	3.4
1360	3.2
1440	3.0

Mushroom Supplements: A finished batch of mushroom supplement can contain up to 0.1% thiabendazole (by weight). The thiabendazole added to the supplement must be included as part of the total of the 20 fl. oz. of Mertect 340-F allowed per 1,000 sq. ft. per crop. The total amount of Mertect 340-F that can be applied from all treatments per crop is dependent on the amount of supplement applied (use the table below to determine the remaining volume of Mertect 340-F that can be applied per crop).

Quarterly Online Survey

April 2010

- a) Notification with follow up reminder
- b) Online multiple choice answers

- c) **ONLY 16 RESPONSES**

Trichoderma online survey

Create a Survey - SurveyMonkey - Windows Internet Explorer provided by CAS IT

http://www.surveymonkey.com/MySurvey_EditorPage.aspx?sm=gROEd7O59k3E%2b8FK4n9gwlvbqxrO1%2bdLdw9UtgLpJCE%3d

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Create a Survey - SurveyMonkey

1. General

Add Question Here

Edit Question Move Copy Delete Add Question Logic

*** 1. What strains did you grow in the most recent crop cycle?**

- White
- Brown
- Both white and brown
- Specialty

Add Question Here Split Page Here

Edit Question Move Copy Delete

*** 2. Please indicate the square feet of bed space cased per week.**

Square Feet

Add Question Here Split Page Here

Edit Question Move Copy Delete Edit Question Logic (1)

*** 3. Was Trichoderma present anywhere on your farm?**

- Yes
- No (Go to question 11)

Add Question Here

Add Page After

Done

Internet 100%