

# Regulatory Mold and Yeast Testing Impact on the Cultivation of Cannabis

by Kurt Badertscher

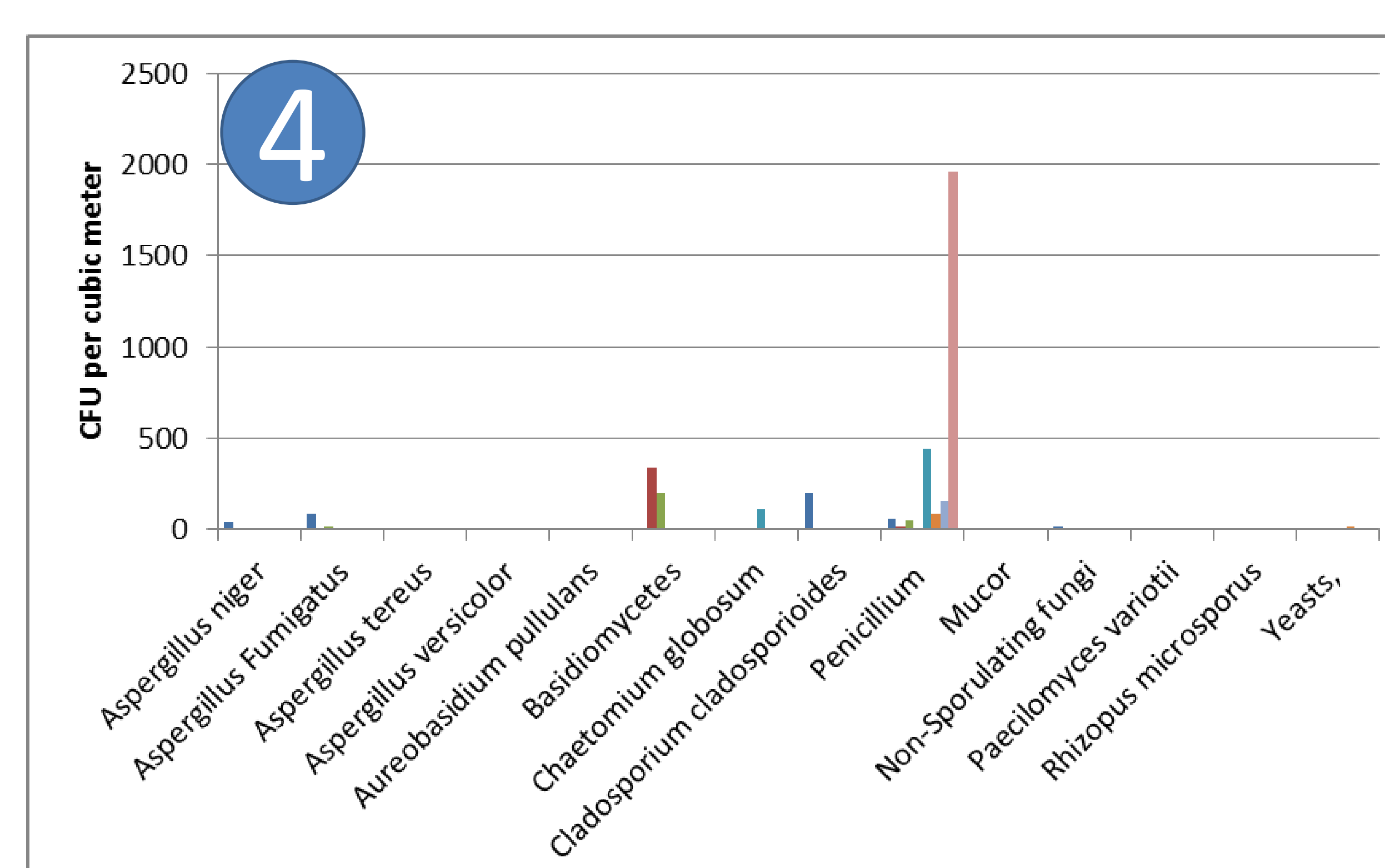
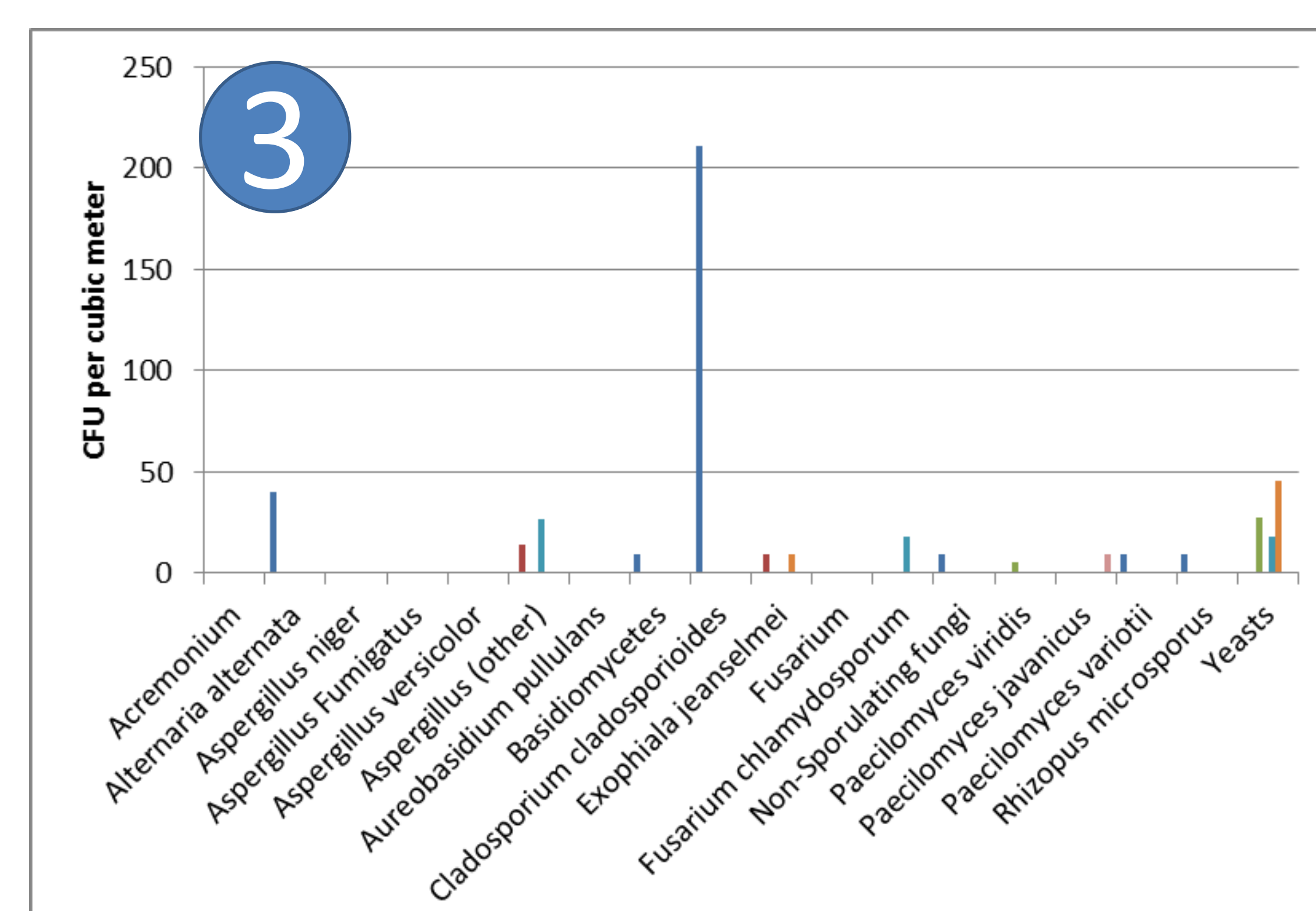
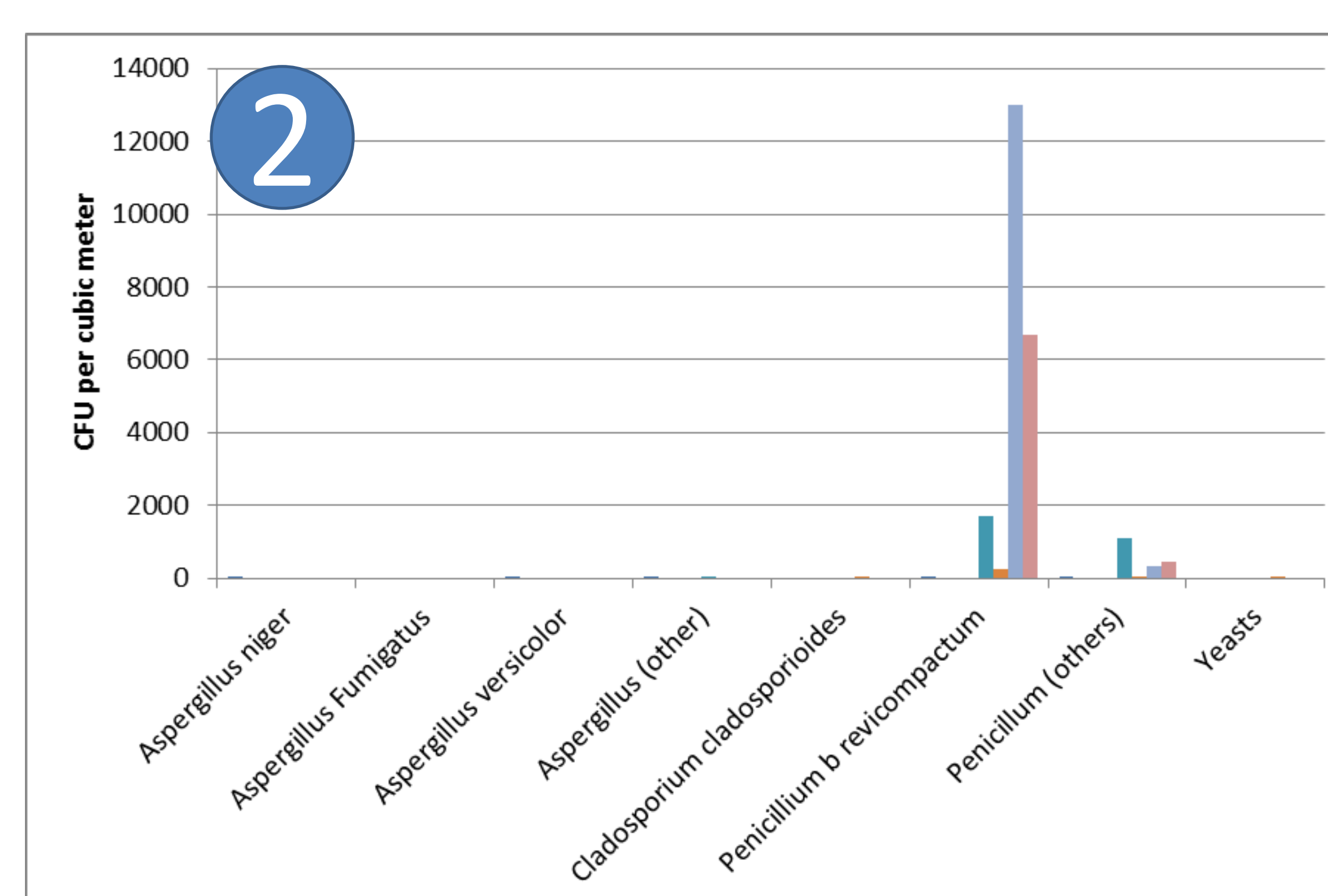
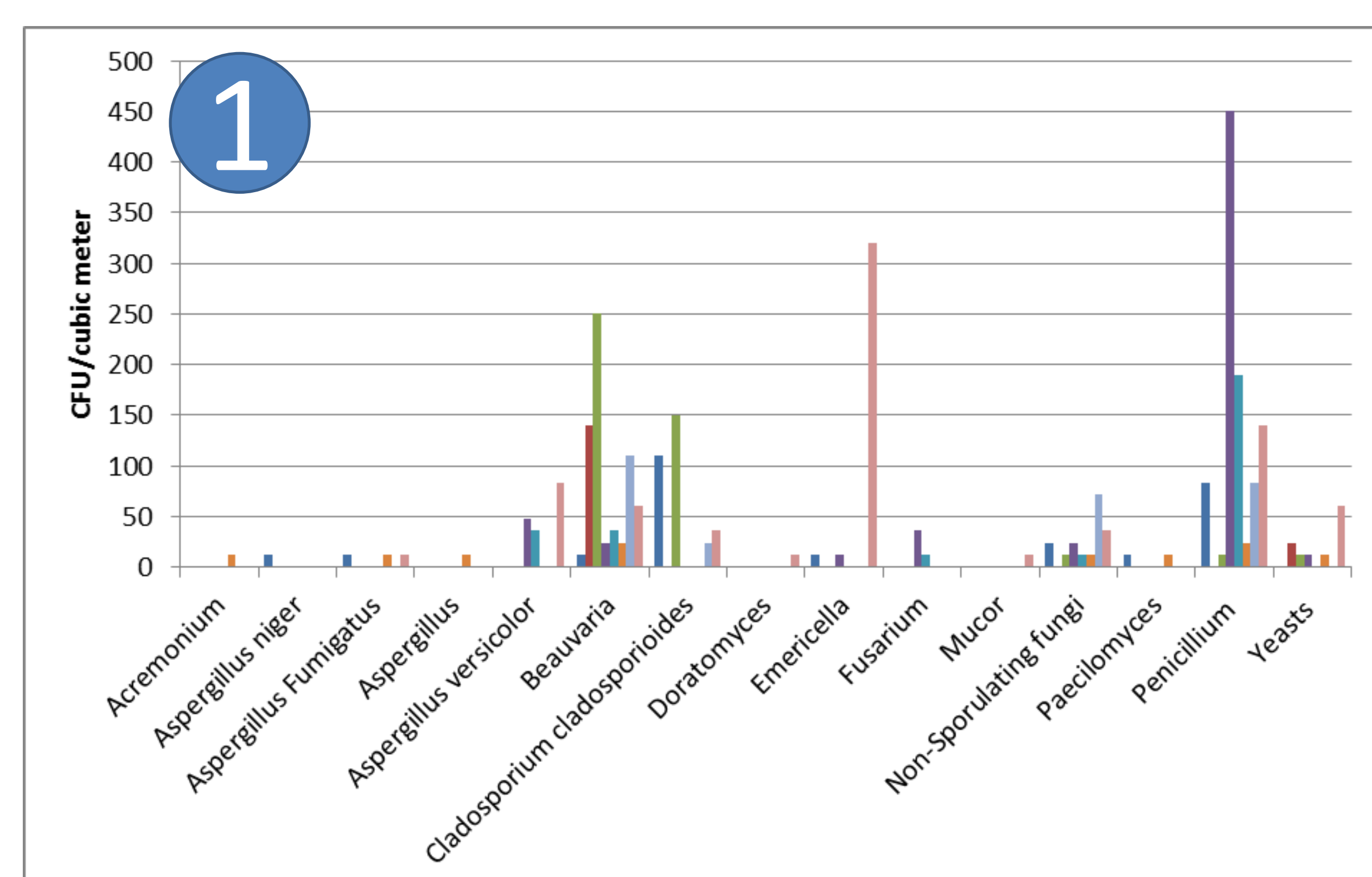


## Abstract 25122 :

This presentation describes the impact of regulatory testing and filtering of cannabis products with regard to mold and yeast content. This poster describes how one major cannabis producer used air sampling to identify and mitigate fungal and bacterial exposure levels and sources. Also described are the interesting political aspects of cultivation wherein mold and yeast standards set by regulators in Colorado seem incongruent with the picture painted by the Center for Disease Control's mold and yeast resources. Cultivation practice, testing and radiation processing are included in the discussion.

**Methods:** Industry standard sampler system, commercial microbiology lab<sup>1</sup>

## Data Summary<sup>2</sup>: Process improvement across 2 years based on aerosol contaminant measurements



- 1 Initial testing identifies high levels of Penicillium and Beauvaria bassiana isolated to a pesticide used in the operation.
- 2 High worker exposure rates remediated except for Penicillium
- 3 Penicillium source identified, process and airflow changes reduced overall levels
- 4 Further overall low levels with Penicillium levels are obviously variable and ongoing

Multiple bars for a pathogen indicates it was found in multiple locations in the operation. Note scale changes between charts

## Comments:

The level of the most virulent human pathogens like *A. fumigatus* are generally in line with outdoor levels suggesting these pathogens are present, but apparently only accumulating in rather than reproducing in the facility. Topic for future focused testing.

Remaining high count pathogens are not usually considered a risk to human health according to our reading of the Center for Disease Control information on fungal diseases. The beta testing of the Colorado regulatory mold and yeast inspection program appears to have set very tight standards that have been shown to be difficult to pass consistently. Testing of early cannabis operations produced dire reports<sup>4</sup> of dangerous levels of molds and yeasts. Other research provides a data point on consumer safety indicating that cultured smoke from a contaminated cannabis cigarette contained no viable fungal agents<sup>3</sup>. More research is needed to improve our understand of the real threat level posed by cannabis borne molds and yeasts

Next testing will relate these now low airborne levels to the ultra high levels reported from official mold and yeast testing. That data was not made available for this poster.

Further research into better quantifying the public health exposure posed by molds and yeasts would be prudent, timely and in the best interest of the public.

1 – Anderson Sampler and EM Lab P&K microbiological laboratory 2 - Data from and used with permission of a licensed cannabis production facility. Company name withheld by request

3 - Fungal Contamination of Tobacco and Marijuana  
Paul E. Verweij, MD, PhD; Jos J. Kerremans, MD; Andreas Voss, MD, PhD;  
Jacques F. G. M. Meis, MD, PhD *JAMA*. 2000;284(22):2875. doi:10.1001/jama.284.22.2869.

4 – Health Effects Associated with Indoor Marijuana Grow Operations  
John W. Martyny, PhD; Mike V. Van Dyke, PhD, CIH, CSP; Josh Schaeffer, M.S.; Kate Serrano, MPH  
Division of Environmental and Occupational Health Sciences, Department of Medicine  
National Jewish Health Denver, CO