



# THE DEADLY AMANTAS OF NORTH AMERICA

## Amatoxin and Phallotoxin Concentration in *Amanita bisporigera* Spores

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We've all been cautioned not to place toxic *Amanita* species into the basket with edible mushrooms intended to be eaten, as the spores of one—so goes the explanation—may poison the other. But is this warranted? Even though amatoxins and phallotoxins have been well characterized in basidiocarps of *Amanita* species, no report of these toxins in spores of Amanitas has been published. A recent study (*Mycologia* 102[4]: 763-65) using a very sensitive technique (reversed phase HPLC) determined the concentrations of  $\alpha$ -amanitin (0.30 mg/g) in spores taken from white “destroying angels,” *Amanita bisporigera*. Turns out *A. bisporigera* spores contain only about 17% the amanitin concentration of fruitbodies. So, despite the deadly reputation of this mushroom, it is certainly unlikely that you would ever ingest enough spores to warrant any concern. The authors did not find significant amounts of phalloidin and only trace amounts of phalloidin (0.02 mg/g) in *Amanita* spores. They also report concentrations of these toxins from pileus and stipe tissues that are

similar to previously reported values; caps seem to be quite a bit higher in toxicity than stems. It's worthwhile to point out that the destroying angel “complex” of species includes *A.*

*bisporigera*, *A. virosa* (of Europe), *A. ocreata*, *A. verna* (of Europe), and others—all are beautiful but should be considered deadly. All photos courtesy of M. G. Wood 🍄



*Amanita ocreata*



*Amanita bisporigera*



*Amanita bisporigera*