

Your Trusted Brand for Over 35 Years

LifeExtension[®]
Stay Healthy, Live Better

Life Extension Magazine

April 2014

In the News

How Clean is Your Milk Thistle Supplement?

Two different studies in the last five years reveal contamination possibilities in the storage and extraction process of milk thistle.

The first study, appearing in the *International Journal of Food Microbiology*, looked for yeasts and molds in milk thistle supplements¹. The testing was in response to an earlier investigation of popular dietary supplements, including garlic, grape seed extract, and saw palmetto, which showed bacterial and fungal contamination².

The study revealed heavy mold contamination in organic, commercially bought whole seeds, seed powder, cut herb, and herb powder. No contamination was found in milk thistle tea bags, liquid extracts, capsules, or soft gels. One explanation for the discrepancy was incomplete drying after harvest. Another was the harvest contacting water while in storage. Both scenarios would provide the moisture necessary for mold to thrive. Cleaning and drying milk thistle immediately after harvest while maintaining good manufacturing practices ensures a safe, high quality supplement.

The second study looked at cleaner, friendlier alternatives to using petroleum ether and ethanol for silymarin extraction³. Silymarin is a complex of biological compounds that contain silibin, the active component of milk thistle. Milk thistle seeds, by weight, contain up to 25% lipid. The fat must be removed before beginning the extraction process. Currently, most defatting methods call for multiple rinses of the seeds by petroleum ether, a volatile organic compound. Then ethanol is used to extract the silymarin. Any lingering petroleum ether stuck to the silymarin is then removed to meet consumer guidelines.

Researchers found silymarin yields were greater using sulfuric acid and warm water than they were using the petroleum ether and ethanol combination. Foregoing the use of toxic chemicals in the manufacturing of milk thistle supplements means a cleaner, healthier final product.

¹ Tournas VH, Calo JR, Sapp C. Fungal profiles in various milk thistle botanicals from US retail. *International Journal of Food Microbiology*. 2013 June;164(1):87-91

² Raman, P., Patino, L.C., Nair, N.G. Evaluation of metal and microbial contamination in botanical supplements. *Journal of Agricultural and Food Chemistry*. 2004; 52:7822–27.

³ Subramaniam S, Vaughn K, Carrier DJ, Clausen EC. Pretreatment of milk thistle seed to increase the silymarin yield: An alternative to petroleum ether defatting. *Bioresource Technology*. 2008 May;99(7):2501-06.

