A.G. Schneiderman Asks Major Retailers To Halt Sales Of Certain Herbal Supplements As DNA Tests Fail To Detect Plant Materials Listed On Majority Of Products Tested

NEW YORK -- Attorney General Eric T. Schneiderman today announced that his office sent letters to four major retailers, GNC, Target, Walmart, and Walgreens, for allegedly selling store brand herbal supplement products in New York that either could not be verified to contain the labeled substance, or which were found to contain ingredients not listed on the labels. The letters, sent Monday, call for the retailers to immediately stop the sale of certain popular products, including Echinacea, Ginseng, St. John’s Wort, and others. Attorney General Schneiderman requested the companies provide detailed information relating to the production, processing and testing of herbal supplements sold at their stores, as well as set forth a thorough explanation of quality control measures in place.

The letters come as DNA testing, performed as part of an ongoing investigation by the Attorney General’s Office, allegedly shows that, overall, just 21% of the test results from store brand herbal supplements verified DNA from the plants listed on the products’ labels — with 79% coming up empty for DNA related to the labeled content or verifying contamination with other plant material. The retailer with the poorest showing for DNA matching products listed on the label was Walmart. Only 4% of the Walmart products tested showed DNA from the plants listed on the products’ labels.

“This investigation makes one thing abundantly clear: the old adage ‘buyer beware’ may be especially true for consumers of herbal supplements,” said Attorney General Schneiderman. "The DNA test results seem to confirm long-standing questions about the herbal supplement industry. Mislabling, contamination, and false advertising are illegal. They also pose unacceptable risks to New York families—especially those with allergies to hidden ingredients. At the end of the day, American corporations must step up to the plate and ensure that their customers are getting what they pay for, especially when it involves promises of good health.”

“As the sponsor of a measure that would require labeling that states whether a product has been evaluated by the FDA or not, and legislation to establish a dietary supplements safety committee, I fully support the Attorney General’s efforts in this area,” said New York State Senator Ken LaValle. “I will continue to fight for legislation that will provide adequate labeling information for the public.”

“Since 2005, I have sponsored legislation to create a dietary food supplements safety committee,” said New York State Assemblymember Felix Ortiz. “This bill was crafted for the very same reasons the Attorney General is now targeting retailers selling generic supplements that may or may not contain the substances contained on the labels. I support the Attorney General’s efforts and I will continue to push for the passage of my bill (A3548) to help reduce this kind of consumer fraud. We need adequate standards and better enforcement over these dietary supplements so consumers will feel confident knowing what they are buying.”

“The evidence for these herbs' effectiveness is sketchy to begin with,” said David Schardt, Senior Nutritionist of the Center for Science in the Public Interest. "But when the advertised herbs aren't even in many of the products, it’s a sign that this loosely regulated industry is urgently in need of reform. Until then, and perhaps even after then, consumers should
stop wasting their money. Attorney General Schneiderman has done what federal regulators should have done a long time ago.”

“This study undertaken by Attorney General Schneiderman’s office is a well-controlled, scientifically-based documentation of the outrageous degree of adulteration in the herbal supplement industry,” said Arthur P. Grollman, M.D., Professor of Pharmacological Sciences at Stony Brook University. “I applaud the New York Attorney General for taking the additional step of seeking to remove these products from the marketplace as they can cause serious harm to consumers unaware of the actual ingredients in the pills and capsules they ingest. Hopefully, this action can prompt other states to follow New York’s example and lead to the reform of federal laws that, in their current form, are doing little to protect the public.”

Using DNA barcoding technology to examine the contents of herbal supplements, the Attorney General’s investigation is focused on what appears to be the practice of substituting contaminants and fillers in the place of authentic product. The investigation looked at six different herbal supplements sold at the four major retail companies in thirteen regions across the state, including Binghamton, Brooklyn, Buffalo, Harlem, Nassau County, Plattsburgh, Poughkeepsie, Rochester, Suffolk County, Syracuse, Utica, Watertown, and Westchester County.

The testing revealed that all of the retailers were selling a large percentage of supplements for which modern DNA barcode technology could not detect the labeled botanical substance.

While overall 21% of the product tests confirmed DNA barcodes from the plant species listed on the labels, 35% of the product tests identified DNA barcodes from plant species not listed on the labels, representing contaminants and fillers. A large number of the tests did not reveal any DNA from a botanical substance of any kind. Some of the contaminants identified include rice, beans, pine, citrus, asparagus, primrose, wheat, houseplant, wild carrot, and others. In many cases, unlisted contaminants were the only plant material found in the product samples.

The U.S. Food and Drug Administration requires companies to verify that their products are safe and properly labeled for their contents, but unlike drugs, supplements do not undergo the agency’s rigorous evaluation process, which scrutinizes everything about the drug—from the design of clinical trials to the severity of side effects to the conditions under which the drug is manufactured.

If the producers of herbal supplements fail to identify all the ingredients on a product’s label, a consumer with food allergies, or who is taking medication for an unrelated illness, is taking a potentially serious health risk every time a contaminated herbal supplement is ingested. The Attorney General’s investigation is focused on potential violations of New York’s General Business Law and Executive Law, including deceptive practices and deceptive advertising.

An expert in DNA barcoding technology, Dr. James A. Schulte II of Clarkson University in Potsdam, N.Y., was hired by the Attorney General’s office to perform the testing. DNA barcodes are short genetic markers in an organism’s DNA and are used to identify it as belonging to a particular species. Barcodes provide an unbiased, reproducible method of species identification. Barcodes can be used to determine the exact plant species being tested.

The DNA tests were performed on three to four samples of each of the six herbal supplements purchased from the New York stores. Each sample was tested with five distinct sequence runs, meaning each sample was tested five times. Three hundred and ninety tests involving 78 samples were performed overall.

**GNC:**

- Six “Herbal Plus” brand herbal supplements per store were purchased and analyzed: Gingko Biloba, St. John’s Wort, Ginseng, Garlic, Echinacea, and Saw Palmetto. Purchased from four locations with representative stores in Binghamton,
Harlem, Plattsburgh & Suffolk.

- Only one supplement consistently tested for its labeled contents: Garlic. One bottle of Saw Palmetto tested positive for containing DNA from the saw palmetto plant, while three others did not. The remaining four supplement types yielded mixed results, but none revealed DNA from the labeled herb.
- Of 120 DNA tests run on 24 bottles of the herbal products purchased, DNA matched label identification 22% of the time.
- Contaminants identified included asparagus, rice, primrose, alfalfa/clover, spruce, ranuncula, houseplant, allium, legume, saw palmetto, and Echinacea.

**Target:**

- Six “Up & Up” brand herbal supplements per store were purchased and analyzed: Gingko Biloba, St. John’s Wort, Valerian Root, Garlic, Echinacea, and Saw Palmetto. Purchased from three locations with representative stores in Nassau County, Poughkeepsie, and Syracuse.
- Three supplements showed nearly consistent presence of the labeled contents: Echinacea (with one sample identifying rice), Garlic, and Saw Palmetto. The remaining three supplements did not reveal DNA from the labeled herb.
- Of 90 DNA tests run on 18 bottles of the herbal products purchased, DNA matched label identification 41% of the time.
- Contaminants identified included allium, French bean, asparagus, pea, wild carrot and saw palmetto.

**Walgreens:**

- Six “Finest Nutrition” brand herbal supplements per store were purchased and analyzed: Gingko Biloba, St. John’s Wort, Ginseng, Garlic, Echinacea, and Saw Palmetto. Purchased from three locations with representative stores in Brooklyn, Rochester and Watertown.
- Only one supplement consistently tested for its labeled contents: Saw Palmetto. The remaining five supplements yielded mixed results, with one sample of garlic showing appropriate DNA. The other bottles yielded no DNA from the labeled herb.
- Of the 90 DNA test run on 18 bottles of herbal products purchased, DNA matched label representation 18% of the time.
- Contaminants identified included allium, rice, wheat, palm, daisy, and dracaena (houseplant).

**Walmart:**

- Six “Spring Valley” brand herbal supplements per store were purchased and analyzed: Gingko Biloba, St. John’s Wort, Ginseng, Garlic, Echinacea, and Saw Palmetto. Purchased from three geographic locations with representative stores in Buffalo, Utica and Westchester.
- None of the supplements tested consistently revealed DNA from the labeled herb. One bottle of garlic had a minimal showing of garlic DNA, as did one bottle of Saw Palmetto. All remaining bottles failed to produce DNA verifying the labeled herb.
- Of the 90 DNA test run on 18 bottles of herbal products purchased, DNA matched label representation 4% of the time.
- Contaminants identified included allium, pine, wheat/grass, rice mustard, citrus, dracaena (houseplant), and cassava (tropical tree root).

The Attorney General’s investigation follows an important study conducted by the University of Guelph in 2013 that also found contamination and substitution in herbal products in most of the products tested. As was said at the time by a spokesperson for the University of Guelph, “The industry suffers from unethical activities by some manufacturers.”
The market for herbal supplements is significant. The Natural Products Foundation estimates that the dietary supplement industry contributes $61 billion dollars to the national economy. A 2013 study from the Canadian Institutes of Health Research estimated there are about 65,000 dietary supplements on the market consumed by more than 150 million Americans.

That same study also found that more than half of Food and Drug Administration (FDA) Class I drug recalls between 2004 and 2012 were dietary supplements. Class I recalls are reserved for drugs or supplements for which there is a “reasonable probability that [their use] will cause serious adverse health consequences or death.”

The Attorney General thanks Dr. James A. Schulte II of Clarkson University in Potsdam, N.Y. for providing his expertise in DNA barcode testing for this investigation.

The case is being handled by Executive Deputy Attorney General Marty Mack and Assistant Attorney General Deanna Nelson with the assistance of NYAG’s thirteen regional offices.

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New York City Press Office: (212) 416-8060
Albany Press Office: (518) 776-2427
nyag.pressoffice@ag.ny.gov

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