

Updates on Quality

by Darlyn Britt

Recent quality developments, new testing procedures and acquisitions inspire increased consumer confidence and brand loyalty.

NSF International Certifies Nature's Sunshine Facility

NSF International, a non-profit, non-governmental organization and world leader in standards development and product certification, recently presented Nature's Sunshine with the NSF Good Manufacturing Certification. NSF is a leading, third-party auditor of companies involved in the health and public safety sectors. Their certification of our manufacturing facility means we passed an extensive audit by NSF staff, including an examination of production equipment and a thorough evaluation of our policies and procedures and our manufacturing processes.



New Testing Procedures and Methods Mean Continually Offering the Safest Supplements

Salmonella poisoning seems to make the news every few months. It recently has made headlines in conjunction with peanuts, pistachios and alfalfa sprouts as it sickened hundreds of people. This led to an exhaustive recall of many tons of food along with health concerns. Of course, we cannot risk salmonella contamination in our raw materials or our finished products, so we test both for the presence of this tiny bug.

We also test our raw herb material for **aflatoxins**, a dangerous byproduct of fungus metabolism that can lead to illness, including liver damage. Sometimes fungus levels are undetectable in raw material. But if we use HPLC and test for the presence of aflatoxins, we can tell if fungus is present.

Last fall, baby formula in China was found to contain **melamine**—a chemical that can boost apparent protein count in a tested sample. As a result of this unscrupulous action, over 50,000 children were sickened and four infants died. Many consumers worldwide switched to soy milk products. Shortly thereafter, soy products from China were also found to be similarly contaminated. NSP markets 68 products, including Phyto-Soy®, that contain soy or its derivatives. We rigorously test all of our incoming soy material to ensure that our products are free from contaminants.

An estimated 15 million Americans are gluten-intolerant.



A QA scientist tests herb samples for microbial contamination



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NSP's new Ultimate GreenZone® formula is guaranteed to be **gluten-free**. NSP goes to great lengths to test for gluten in all of Ultimate GreenZone's ingredients. This expensive testing ensures a safe product for our gluten-sensitive consumers. "Most other herb companies aren't testing for this," says Lynda Hammons, Vice President of Quality Assurance and Regulatory Affairs. "But at Nature's Sunshine, if the label says something about our product, we test for it personally."

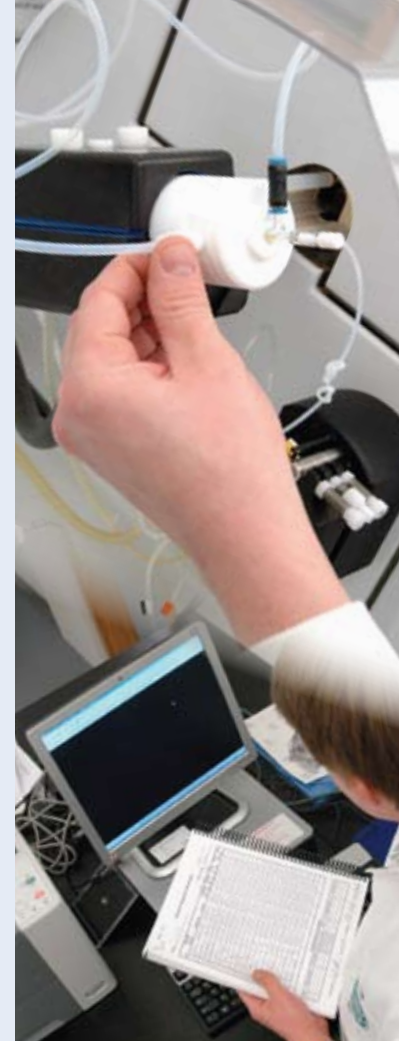
NSP Stays on the Cutting Edge of Technology

We purchased a new Inductively Coupled Plasma/Mass Spectrometer in January 2009 (pictured below). Our former ICP/MS was not broken or "outdated," but the newest one offers brand-new technology that lowers our elemental detection limits and increases our dynamic range. It also has the added advantage of an octopole reaction system (ORS), which effectively eliminates potential interferences with certain elements like arsenic, selenium, chromium and iron. Its price tag, \$175,000, is just one example of our commitment to providing the finest quality products to our distributors and customers worldwide.

References:

Gluten Intolerance Group of North America

<http://www.foodqualitynews.com/Food-Alerts/Soy-boost-after-melamine-scare>



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It Takes More Tests to Be the Best

An Overview of Quality Testing

by Darlyn Britt

Nature's Sunshine has an amazing litany of instruments and tests at its disposal to guarantee our customers the finest quality supplements.

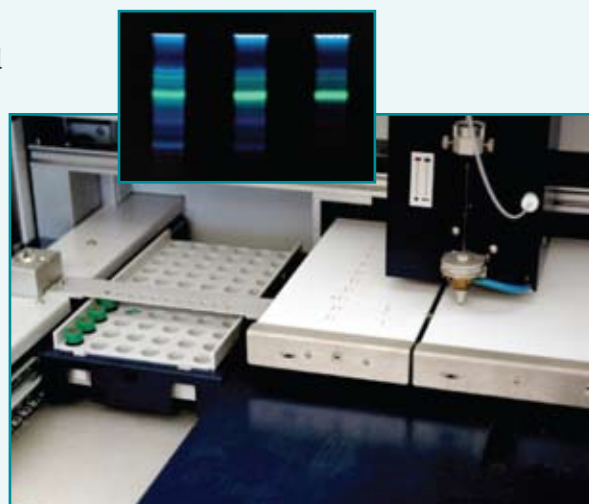
High Performance Liquid Chromatography (HPLC) is used a great deal in testing both vitamin and herb products. HPLC can:

- Measure the active components in a vitamin.
- Measure the purity and potency of raw herbs that have standardized compounds.
- Help us verify label claims for vitamin and herb products with standardized amounts of active components like ginkgo (flavone glycosides), feverfew (parthenolide), St. John's Wort (hypericin) and olive leaf (oleuropein).



Thin Layer Chromatography (TLC) is used primarily to test herb material. TLC testing:

- Verifies correct plant species and parts (so you don't get leaf when you want the root).
- Detects adulteration or contamination in an herb.



NSP scientists use **Gas Chromatography** combined with **Mass Spectrometry** (not pictured) to:

- Identify compounds in complex mixtures.
- Reveal the presence of unwanted elements, including pesticides and solvents.
- Analyze essential oils and ensure that they are of the proper origin and contain the proper components.

The **Inductively Coupled Plasma/Mass Spectrometer (ICP/MS)** is essential for testing mineral material. It can:

- Identify and quantify individual minerals in a mixture.
- Determine if raw materials contain unwanted minerals like arsenic, lead and mercury.
- Test finished products like Super Supplemental and Mega-Chel® to ensure their mineral content meets label claims.



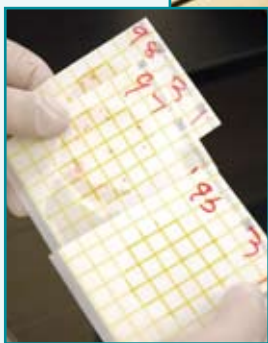
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Physical or Wet Chemistry is a term that applies to a collection of tests and procedures. These procedures provide critical information about raw materials, including:

- Evaluating moisture content in raw materials.
- Testing the purity and potency of amino acids.
- Assuring the raw materials will blend correctly and fit into a capsule or make a good tablet.
- Assuring that we can process the material correctly.
- Measuring disintegration and dissolution of tablets.
- Measuring capsule weights for finished products.

NSP uses **Microbiology** to protect against unwanted organisms. This category of testing includes several pieces of equipment that can:

- Detect organisms in raw materials or finished products, including pathogens such as E. coli and salmonella.
- Detect bacteria that can indicate spoilage in liquids and other products.
- Measure for the presence of yeast or mold in raw herb material.



In total, NSP has well over 600 different tests in its arsenal. And, “We develop at least 20 new methods per year,” says Ken Fugal, Director of R&D. “Our scientists are continuously developing new methods to evaluate and release raw materials and newly launched finished products to meet label claims.”

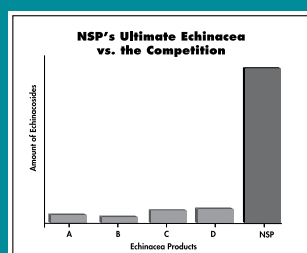
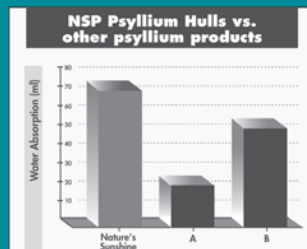
For more comparisons and additional information about NSP quality, visit www.nsplife.com and click on A Passion for Quality.



In 2008, Nature’s Sunshine scientists tested a few NSP products against some competitors. The results show that NSP products truly offer premium quality and the best value.

In a swell (absorption) test, equal amounts of NSP Psyllium Hulls and two other brands of psyllium (single) products were placed in containers with 100 ml of water. NSP Psyllium Hulls absorbed significantly more water than the other two products. In fact, you would need to take almost twice as much of the competing products to equal the absorbing, bulking action of NSP Psyllium Hulls.

We compared NSP Ultimate Echinacea—a highly concentrated extract of three species of echinacea plants—with four popular echinacea extracts on the market. NSP Ultimate Echinacea has several times more echinacosides (a key active component) than the four competitors.



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Continuous Improvement

Reformulating Existing Products for Customer Satisfaction

In a quest to continuously meet our customers' needs and expectations, Nature's Sunshine's R&D department is dedicated to continuous improvement. They seek to take something good and make it better. And when they succeed, it resonates with our customer base and back again.

Nature's Sunshine proudly unveiled three reformulated powder products in the fall of 2008: SynerProTein®, Ultimate GreenZone® and RG-Max®. All three of these products boasted an improved taste. Ultimate GreenZone's new formula also yielded a more nutrient-dense product. We added more greens, more grains and made it gluten-free.

Ken Fugal, Director of Research & Development at Nature's Sunshine, points out that changing a product's formula requires more than just adding something sweet to the mix. "It takes a team of experts to evaluate all aspects of a product, including taste, efficacy, powder appearance and appearance in water," he said. "The powder cannot be too fluffy or too dense; it cannot be too fine or too granular. Color is definitely important; it must be pleasing, not objectionable." As you might guess, smell and taste make the biggest difference in customer acceptance of any powdered product.

While we wish that all of Mother Nature's creations tasted wonderful, that's simply not realistic. As a result, it's often a challenge to make something really healthful also taste really great. Nature's Sunshine uses natural ingredients and acceptable sweeteners and flavors for our powdered products. Some flavors are added to enhance a particular ingredient's taste while others help mask objectionable qualities.

Throughout the development process, product samples are evaluated.

"It takes an average of five iterations, sometimes more, before a new sample is approved for production." Fugal says.

A team of scientists, with backgrounds in food science and product formulation worked for several weeks to successfully improve our SynerProTein product. Its new vanilla flavor has received high compliments from NSP Managers, including this comment:

"This tastes really good! We love it! Our 22-year-old also likes it."

—Mark & Sylvia Rogers, Ore.

Ultimate GreenZone saw the biggest changes of these three products. We added 1 gram per serving of prebiotic fiber to help feed friendly bacteria in the gut. We also added several greens (artichoke, parsley, asparagus, kale, beet, chlorella, alfalfa and spinach) along with protein-rich grains (quinoa, flax hull lignans and chia). Likewise, the response to our new formulation of Ultimate GreenZone has been positive.

"New Ultimate GreenZone is very much improved! The taste is sweeter and the flavor much better. NSP did a very good job improving this."

—Dr. Jay Vanden Heuvel, Wis.

Trust your taste buds, and your health, to Nature's Sunshine.

Stock No.	Product	Direct Cost	QV	Mem. to Mem.	Sugg. Retail
3025-0	SynerProTein (525 g)	\$19.95	19.95	\$22.95	\$29.95
1103-6	Ultimate GreenZone (368 g)	\$31.95	31.95	\$36.75	\$47.95
587-4	RG-Max (866 g, 30 servings)	\$59.95	59.95	\$68.95	\$89.95



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Finding Quality at its Source

Spotlight on Thai-Go® and Mangosteen

by Courtney Hammond

Thai-Go is one of Nature's Sunshine's best-selling products with good reason. Thai-Go is a comprehensive antioxidant juice that combines the world's most powerful fruits. Replete with bioflavonoids, xanthonenes and antioxidants, Thai-Go boosts the immune system and helps protect the body from free radical damage. Thai-Go was first introduced in 2004. But, as with all NSP products, the research started long before that.

Thai-Go presented an initial sourcing challenge because of a key ingredient, mangosteen. With many new products, key ingredients are raw materials that NSP currently uses, or are well-recognized herbs that are readily available from trusted vendors. At the time of development, mangosteen was new to the natural health world. To source the mangosteen, NSP turned to one of its reputable vendors, who at that time did not supply mangosteen.

This vendor reports that NSP is always more difficult to source for than other companies. "NSP is so specific in terms of requirements and more extensive in terms of specifications than other companies. They are always ahead of the curve," says the resourceful vendor.

It was no different with mangosteen. Research began on where to find native mangosteen, and the search was narrowed to Thailand, Malaysia and Indonesia. From there, processing facilities were analyzed and chosen based on their ability to meet NSP's specified quantities and quality.

Brunswick Certification

Brunswick Laboratories, the leading commercial laboratory specializing in the science of antioxidants and oxidative stress, studies Thai-Go on a lot by lot basis to certify its exceptional product quality. The Brunswick Lab's certification seal is "a visible symbol of antioxidant quality," says Brunswick founder and chairman Jim Nichols. Certification through Brunswick Laboratories verifies that every bottle of Thai-Go stamped with the Brunswick Labs ORAC Certified seal delivers unparalleled antioxidant protection.

Brunswick Laboratories certifies NSP Thai-Go in five antioxidant tests:

- **ORAC (Oxygen Radical Absorbance Capacity).** ORAC measures the total antioxidant capacity of a food.
- **HORAC (Hydroxyl Radical Averting Capacity).** HORAC measures a food's capacity to avert hydroxyl radicals, which are more harmful to the body.
- **Phenolics**, which are substances in plants that have antioxidant characteristics.
- **Bioflavonoids.** Known for their antioxidant capacity, bioflavonoids are nature's biological response modifiers.
- **Xanthonenes**, which are biologically active plant compounds that support the immune, structural and digestive systems, the brain and the skin.



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Stock No.	Product	Direct Cost	QV	Mem. to Mem.	Sugg. Retail
4095-1	Thai-Go (2/25 fl. oz.)	\$54.95	54.95	\$63.20	\$82.45