

Neutraceuticals and dietary supplements: Testing of raw materials and finished products using portable NIR

By Ian Laidlaw, Analytik Ltd

FDA regulations will soon require more stringent inspection for identity, purity, quality, potency and composition of dietary ingredients and supplements. Near infrared is a tried and trusted method for material testing and verification accepted by the FDA and United States Pharmacopeia (USP) and is utilised routinely throughout the pharmaceutical industry. With growing pressure from the Food and Drug Administration on the natural products or neutraceutical industry to standardise ingredients and ensure product purity and quality, unique new and portable VIS-NIR spectroscopy is a highly efficient, convenient and cost-effective means to perform a wide variety of raw material and finished product testing in this industry.

LabSpec[®] portable VIS-NIR spectroscopy (See Fig.1) is not only ideal for quality control at any stage of the manufacturing process, but also for inspection and identity verification of incoming raw materials as well as finished products. This can often be achieved by measuring through the packaging and thus eliminating the need for costly, time consuming and inconvenient sampling procedures.

LabSpec[®] VIS-NIR analysers and software meet compliance requirements set under 21 CFR Part 11, and guidelines for USP 1119, by providing valid, qualitative and quantitative testing procedures.

With a wide spectral range (350-2500nm), true portability and unique post-dispersive optical system in LabSpec[®] instrumentation, 100% inspection of raw materials and finished products becomes a convenient reality. Seamless user-friendly interfaces for the available data processing software packages enable rapid testing, typically just one second per sample. This can take place in Goods Inwards areas, on the manufacturing floor, or wherever it is needed, positioning you to meet GMP and FDA requirements - quickly and conveniently. In many cases this is easily possible by measuring with a High Intensity Contact Probe through the packaging. Why take samples when you can measure directly, in-situ exactly when and where you need an answer?!



Fig. 1 – ASD LabSpec[®]

A starter library, created using certified reference sources is available; it includes but is by no means limited to:

Bee Pollen	Gotu Kola	Selenium Aminoate
Biotin	Iron AA Chelate (10%)	Selenium Yeast
Black Cohosh	Iron Ascorbate (12%)	Siberian Ginseng
Calcium AA Chelate	Iron Aspartate (17%)	Slippery Elm Bark
Calcium Aminoate (20%)	Kava Kava	Soy
Calcium Carbonate Pure	Kelp	Spirulina
Calcium Pantothenate	Korean Ginseng	St. Johns Wort
Chondritin Sulfate	Licorice	Thyme
Chromate CM	Magnesium Aminoate (20%)	Tumeric
Chromium AA Chelate	Magnesium Oxide Powder	Valerian Root
Co-Enzyme Q10	Magnesium Sterate	Vitamin A Palmitate
Copper AA Chelate	Manganese AA Chelate	Vitamin B1
Copper Aminoate	Manganese Aminoate	Vitamin B12
Dong Quai	Microcrystalline Cellulose	Vitamin B2
Echinacea Angustifolia	Milk Thistle	Vitamin B6
Echinacea Purpurea	Niacin Granular (90%)	Vitamin C (97%)
Echinacea Simulata	Niacin Pure	Vitamin D
Echinacea Tennesseeensis	Potassium AA Chelate	Vitamin E Succinate
Feverfew	Potassium Aminoate	Yellow Dock
Garlic	Potassium Iodine (23.55-76.45%)	Zinc AA Chelate
Ginger	Saw Palmetto	Zinc Aminoate
Ginko Biloba	Selenium AA Chelate	Zinc Oxide
Goldenseal Root		

An overlay comparison of spectra for the ingredients; Echinacea, Glucosamine, Ginko Biloba and Spirulina are shown below in Fig. 2:

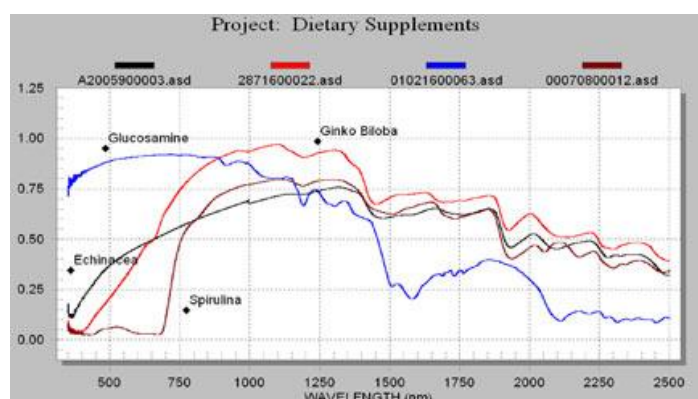


Fig. 2

To learn more about the ASD LabSpec[®] and other portable NIR spectroscopy solutions please visit www.analytik.co.uk (UK and Ireland) or alternatively visit www.asdi.com.