

# How GMPs Ensure a Quality Capsule

by Mark Wolf

Countless factors play a role in the manufacturing of a quality capsule; they always have. But FDA's Final Rule on current good manufacturing practices (GMPs) for dietary supplements has rewritten all the rules governing the process for producing a quality dietary supplement—capsule or otherwise. The objective of GMPs is to provide consistent, quality products and scientific guarantees that the label claim on every production batch is correct.

While GMP compliance will help the dietary supplement industry build trust with consumers, it is no easy task for manufacturers and packagers unaccustomed to these regulations, and has required a major overhaul for many. Most in the industry should already be in compliance, although smaller manufacturers have until June 25, 2010. Every brand owner in the dietary supplement industry should ensure their contract manufacturer operates in strict compliance with GMPs.

While the dietary supplement GMP regulations span hundreds of pages, they can be condensed to 10 main points any packager should do to ensure GMP compliance:

**1. Standard Operating Procedures (SOPs):** SOPs can serve as a roadmap for GMP compliance. They detail specific instructions and procedures for manufacturing and packaging capsules and other products. Manufacturers can follow one set of GMPs for manufacturing drug products and another for dietary supplements, or follow the same set of SOPs for both. Conducting regular departmental meetings to confirm all employees are operating according to the SOPs can further underscore the importance of standardized operations.

**2. Raw Materials Testing:** Producers should be conducting raw materials testing, and auditing all suppliers on a regular basis.

**3. Validation:** One of the most comprehensive of all GMP requirements, supplement manufacturers are now required to perform validation of all manufacturing, packaging, laboratory testing and cleaning procedures—and to qualify all equipment used in production. Validation involves extensive testing, observation and analysis to assure the equipment, formulas and procedures measure up to established product standards.

**4. Cleaning Procedures:** Performing validated cleaning procedures on all equipment between each batch of product, with a thorough inspection by the quality assurance (QA) team, can help eliminate the risk of contamination.

**5. Equipment Maintenance:** All manufacturing and packaging equipment must be qualified through IQ/OQ/PQ. To ensure compliance, manufacturers should perform the required calibrations according to equipment manufacturer specifications, but also perform routine preventive maintenance on the equipment—testing equipment anywhere from a daily to an annual basis—to ensure it is working properly. All calibrations should be documented and new qualifications performed on any equipment that has been modified.

**6. Environmental Controls:** GMPs require all dietary supplement raw materials and finished products are

stored, manufactured and packaged in environmentally controlled facilities.

**7. Product Testing:** In the past, supplement manufacturers would often assign expiration or use-by dates, or use no date at all. Now, manufacturers must back up these dates with stability testing. Marketers should ensure their manufacturing partners have the resources not only to maintain rigorous stability programs to confirm expiration dating, but also to conduct analytical testing on all active ingredients in multi-active supplement products. All analytical test methods also must be validated to comply with GMPs.

**8. Packaging and Labeling Requirements:** GMPs state all dietary supplement product labels must follow an established format. The QA team should routinely review all labels to ensure the Supplement Facts appear in the proper format.

**9. Documentation for Traceability:** GMPs require manufacturers maintain complete and detailed documentation for all processing. This demonstrates all the GMP-required steps were taken and the quantity and quality of the product was as expected. These records also enable the complete history of a batch to be traced. This information should document the lot numbers of all raw materials in every batch, as well as all individual manufacturing and equipment identification numbers to track for any potential quality issues. The GMPs also require manufacturers to document the day a project begins and ends.

**10. Training:** This is perhaps one of the most critical components of GMP compliance. It ensures all team members working on the products know the requirements. FDA requires annual GMP training.

Of course, the steps to GMP compliance go even further still. Another key component is annual product reviews, which involves reviewing all product lots, trending test results, assessing customer complaints, and noting change controls and out-of-specification results. Such reviews were not typically performed on dietary supplements, but are now required to show all the necessary steps are taken to ensure a formula and its procedures are providing a consistent, quality product.

Given the heightened scrutiny facing the dietary supplement industry, it is incumbent upon brand owners to ensure their contract manufacturers have a thorough knowledge of GMPs and SOPs, and follow them to the letter. Ask whether the SOPs are in strict compliance with GMPs—and check they have formal training programs in place. Request a written contract that ensures compliance with all relevant GMPs, and consider requiring the contract manufacturer undergo periodic internal and third-party audits to confirm GMP compliance. Your business, your products and your customers will count on their conformance to quality. □

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