

# Understanding Herb Quality

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- **Species Substitution:** Herbs look a lot like weeds, but they contain special compounds known as Phytonutrients. Because many herbs look alike the correct species is critical. Consider this:
  - **St. John's Wort:** sales exploded in 1995 resulting in a 28% increase in sales for a single year. The practice of species substitution among many suppliers became a mathematical certainty because there was not enough St. John's Wort to meet demand. "Cutting" herbs has led to higher profits at the expense of therapeutic results.
  - **Skullcap:** Even within a single species there may be several varieties of sub-species that look alike. Like *Scutellaria lateriflora* (skull cap) for other *Scutellaria* varieties.
- **Correct plant part:** Another way quality gets compromised is when the wrong plant part is used. A common practice among Echinacea suppliers is to use both the aerial parts (leaves) and root. The problem is that only the root contains the active ingredient. Even among different species the roots can vary in alkyl amide content such as with *E. angustifolia* and *E. purpurea*.
- **Time of harvest:** Like vine ripened fruit vs. fruit picked green and shipped 2000 miles – time of harvest can create a vast difference in quality.
- **Assay of active ingredients:** Without doing an analysis of the plants prior to tableting and before the product gets placed in a bottle the consumer has no way of knowing the quality of the product purchased. Medi-Herb is one of the very few companies that has invested in High Pressure Liquid Chromatography equipment to assay pre and post tableting and to determine if batches of herbs from year to year are up to quality standards.
- **Tableting:** 95% of all herbs sold are capsules, namely ground up herb. The problem with this method is that heat is formed during the grinding process and degrades the activity of the herb. Another complication is that gel caps collapse in the stomach and studies have confirmed a 17% loss of herb. Medi-Herb uses a cold percolation extraction process utilizing distilled water and pharmaceutical grade ethanol. These compounds are well tolerated by the body in small amounts and they allow both the water and alcohol soluble phytochemicals to be extracted from the plant. The result is a finished tablet that maintains the original constituents in the plant. Medi-Herb tablets also comply with US Pharmacopeia dissolution standards – the tablet will dissolve completely at room temperature in 15-25 minutes.
- **Microbial infestation:** a challenge of dry encapsulation is that raw plant materials contain fungi, insects, and other microbes. Dry grinding and gelatin encapsulation of herbs does not allow for any disinfection. The ethanol in the cold percolation process takes care of disinfection.
- **Toxic extraction residues:** some companies use harsh chemicals during the extraction process such as hexane and acetone; these solvents leave behind residues that can pose a toxicity problem. While these solvents do remove more of certain plant compound they have a narrow extraction window and can leave other important plant compounds behind.