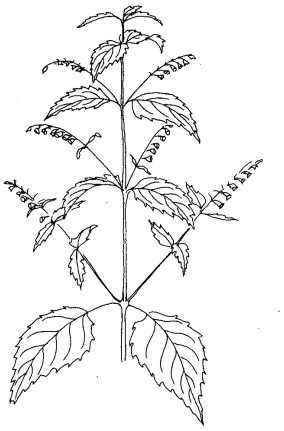

Medicinal Herb Production Guide

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*Skullcap (*Scutellaria lateriflora *L.)*

Introduction

Botanical Information

Scutellaria lateriflora L. is native to North America and can be found east of the Rocky Mountains in the temperate zones. A member of the Lamiaceae family, skullcap is widely distributed in woods, moist thickets, marshes, and on the banks of streams. It is an herbaceous perennial that grows to a mature height of twenty-four to thirty inches. Leaves are ovate to ovate-lanceolate with serrated margins. The blue flowers bloom from July to September with blossoms only on one side of the flower stalk. The plant spreads through slender stolons and can fill in an area rather quickly. It is the aerial part of the plant that is harvested and used for medicinal purposes.

Bioactive Components

The main bioactive components of skullcap are scutellarein, its glycoside, scutellarin, and the flavonoid baicalein, and its glycoside, baicalin. The medicinal properties of these components are listed as antispasmodic, diuretic, and sedative.

Uses and Treatments

The Cherokee Indians used skullcap as part of a concoction given to women to promote menstruation. It was also used for diarrhea and breast pain. In the early 18th century in America, skullcap was used in the treatment of rabies and was given the nickname "Mad Dog", though it is unclear as to its success for treating rabies. Today, it is used for digestive problems as well as a nervine and mild sedative for the treatment of anxiety, depression, and insomnia. Table 1 summarizes skullcap's uses.

Table 1. Modern and traditional uses of skullcap.

Modern Uses	***Traditional/Folk Uses***
- *Nervous disorders*	- *Rabies*
- *Insomnia*	- *Epilepsy*
- *Digestive problems*	- *Diarrhea*

Cultivation Practices

Site Selection

Site selection for growing skullcap is difficult. Skullcap does best in areas of constant moisture, such as moist thickets or marshlands. It prefers a fertile soil, is hardy to zone four, and grows well in full sun or partial shade. When growing in an open field, irrigation must be provided. In hot dry areas, it will grow best under shade. Once harvesting begins, fertilize with a high nitrogen compost.

Planting

Skullcap can be grown through direct seeding, transplanting, or dividing the roots. Johnny's Selected Seed Co., Winslow, Maine, recommends the following guidelines for starting seeds. The preferred method is to start seeds indoors. Skullcap seed requires a cold stratification period and light to germinate. Sow seeds shallowly in flats filled with a prepared soil mix. Moisten and refrigerate at 40-50^{0}F for seven days. Flats can also be placed outside in early spring where the seeds will be exposed to nighttime cold temperatures. After the required stratification period, put flats in the greenhouse for germination. Seeds should be started six to eight weeks before setting out in the field. In late spring, transplant outside in well-prepared soil. Space plants eight to twelve inches apart in rows one and one-half to three feet apart or in three-foot wide beds. Once established, plants will spread quickly to fill the bed. It is very important to keep the beds and rows weeded.

Direct seeding can also be done outside in spring. In a well-prepared planting bed, shallowly sow one to two seeds per inch using the recommended row spacing. When plants have several sets of true leaves, thin eight to twelve inches apart. Do not allow the seeds to dry out and keep the planting beds free from weeds. Once plants are established, root divisions can be made in spring or late fall. This is the preferred method by Tim Blakley, *Medicinal Herbs in the Garden, Field, and Marketplace*. Transplant divisions immediately at the recommended spacing and keep moist.

Insects and Diseases

Diseases for skullcap, listed in Index of Plant Diseases in the United States, include the leaf spots, Cercospora scutellariae, Phyllosticta decidua, and Septoria scutellariae; stem rot, Botrytis cinerea; powdery mildews, Erysiphe rots, Phymatotrichum omnivorum and Rhizoctonia solani. galeopsidis, and Microsphaera sp.; and root

Harvesting, Cleaning, and Drying

Once flowering begins the plant is cut with shears or a mower. A light cutting the first year is possible, followed by two cuttings each consecutive year. When harvesting skullcap, keep the freshly cut herb in the shade until harvesting is complete or take immediately to the drying area. Do not allow the plant material to heat up. One note: many buyers require that the material be harvested at a certain time of year or during a particular stage of bloom. Check with your buyer first before harvesting.

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Blakley reports that skullcap can dry in three to five days but should be turned often. The fresh herb is approximately eighty percent water. A warm location with adequate airflow is needed for drying. If a drying unit is not available, a large dehydrator, converted greenhouse, or converted rooms in a barn are areas that can be used for drying. Dry at a 95-100^{0}F, turning the herb often to allow for aeration and to prevent mold from developing. Good airflow is essential. For a quality product, full color of the herb must be retained after drying. In a more humid climate, the temperature may need to be increased. Package the dried herb in woven poly bags that are light proof or in corrugated boxes, and store in a cool, dry, dark location. Potential yield of 2000 pounds per acre of dried material is possible.

Marketing and Economics

Annual Consumption and Dollar Value

In 2001, approximately 35,000 pounds of skullcap was harvested and sold on world markets, over 2 1/2 times the 1997 harvest and an increase of about 23% over 2000 harvest levels. The dollar value of the 2001 harvest was between $185,000 and $195,000. This amount is more than 3 1/2 times greater than the harvest value in 1997 and about 23% higher than 2000.

Supply and Demand

In 2001, supply and demand pressures were reported as being in balance. Wild harvested and cultivated materials have been adequate to handle the increased demand. A slight oversupply of this botanical in the fall of 2001 worked its way through the system without any major pricing adjustments. Skullcap has recently been advocated by herbalists as a sedative treatment alternative to kava. This news has resulted in a sharp increase in demand for this material during the last quarter of 2002.

Pricing

Small supply disruptions, attributable to lower-than-expected wild harvest material coming to market, have led to some modest upward price pressure over the past five years. During 2001, prices of this material ranged from $4-$6 per pound. Over the last three-to-six months of 2002, prices have spiked upwards, and this botanical currently trades at the high end of its historic $4-$8 per pound price band.

Distribution Channels

In 2001, 70% of the harvested pounds of this product came from small growers outside of North America. 85% of the entire 2001 harvest came from cultivated sources. Some buyers will deal directly with growers and harvesters, but most have specific harvest protocols.

Commercial Visibility

Of the top nutraceutical/botanical companies in North America and Europe, 22% offer this material as a stand-alone product, and 33% offer it has as stand-alone product or as part of a multi-constituent supplement.

Conclusion

The market may exhibit moderate-to-strong increases in demand if more countries in Europe ban or place severe restrictions on the use of kava. Suppliers are small and geographically widespread. If momentum does build against kava in the mature herbal markets of Europe, skullcap could be poised for demand growth in the range of 20% to 30% annually, over the next three-to-five years. Upward price pressure in this market strongly suggests that current supplies will be unable to satisfy the future demand for this material without significant upward price adjustments.

This Medicinal Herb Production Guide includes excerpts from, Analysis of the economic viability of cultivating selected botanicals in North Carolina. Strategic Reports. 2002.

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