

## ***Chapter 7: Medicinal and Herbal NTFPs***

Medicinal and herbal NTFPs were chosen for study in this research because they are commonly traded in southwest Virginia and generate income for many local people. Hundreds of medicinal and herbal NTFPs grow in southwest Virginia's biodiverse forests and have been used for generations in homemade medicines. Some are marketable and provide valuable sources of income for local people. This chapter presents results and discussions on medicinal and herbal NTFPs and their marketing systems. Results are obtained from literature review and field research interviews conducted between January and September 1997.

### ***7.1 Importance of Medicinal and Herbal NTFPs***

The use of medicinal and herbal NTFPs in the Appalachian region is an ancient practice. Native Americans had extensive knowledge of the medicinal properties of plants because these plants were their only sources of medical treatment (Vance 1995). Europeans who colonized the Appalachian region quickly discovered natural remedies because the region's remoteness and isolation did not allow easy access to doctors and modern medicine (Moore 1988). Their knowledge of homemade medicine was acquired from European ancestors with influences from the ancient cultures of Egypt and Native American (Irving 1997).

Locally-made natural medicine, known as folk medicine, has historically been a common medical treatment in southwest Virginia. Folk medicine uses leaves, stems, roots, bark, seeds, fruits, flowers, and buds to make teas, tonics, powder, snuff, poultices, and smoke

inhalers. A tonic is an ambiguous term referring to a substance thought to have an overall positive medicinal effect of an unspecified nature, often to reduce stress. Poultice is a moist, warm mass of plant material applied to the skin for medicinal treatment (Foster and Duke 1990). Folk medicine was the only medical system in Appalachia until the turn of the century and in isolated areas, the practice stayed predominant through the 1930s (Cavender 1995).

Folk medicine is also called “polyfoxing”, a term brought to Appalachia by the Scots and English in the late 1800s (Cavender 1995). During springtime after plants had budded, polyfoxers prepared a tonic which was believed to be beneficial for everyone. The polyfoxer spent two to three weeks gathering materials from the forest, washing and drying them, and extracting and mixing the juices. Most formulas contained something for every common ailment: yellowroot (*Xanthorhiza simplicissima*) is a tonic and strength builder; ginseng (*Panax quinquefolius*) has been used to treat kidney problems and colic; sarsaparilla root (*Aralia nudicaulis*) is a tonic and rejuvenator; pennyroyal (*Hedeoma pulegioides*) treats stomach problems; and the barks of dogwood (*Cornus florida*), poplar (*Populus* spp.), slippery elm (*Ulmus rubra*), and shagbark hickory were considered therapeutic for a variety of ailments (Daugneaux 1981).

Natural medicine manufacturers eventually began patenting their product and selling them in local communities. This type of medicine, called patent or proprietary medicine, gradually took the place of homemade remedies. Patent medicine was essentially equal to folk medicine because it used the same natural ingredients and alcohol content as what mountain people had always used (Irving 1997). However, manufacturers of patent medicine held claim over their own treatments often bottling, naming, and labeling it for sale to the public. Conversely, folk medicine is made and used only within the household with no attempt at commercial sales.

The sale of patent medicine was eventually outlawed by government regulation. This medicine was popular in the United States from the Civil War to 1906 when its use was

regulated by Pure Food and Drug Act. Labels were required for patent medicine which stated the presence and amount of certain dangerous drugs such as alcohol, opiates, and chloral hydrate. The act also prohibited misleading information from faulty labels. Patent medicine was outlawed in 1938 with the passage of the Pure Food and Cosmetic Act (Center for Appalachian Studies and Services 1989). Natural healing also fell out of common use as synthetic medicines and professional health care became more available in southwest Virginia (Vance 1995).

The use of medicinal and herbal NTFPs has not stopped since patent medicine was outlawed. Knowledge of medicinal NTFPs is passed down through generations and many households continue to collect for personal use. Some even continue to sell homemade remedies without labels to avoid hassle with postal and governmental authorities (Daugneaux 1981). Although drug stores throughout southwest Virginia sell a variety of drugs, some people prefer to collect natural remedies to save money. Money can also be earned from the sale of medicinal or herbal raw materials. The most common economic opportunity for these NTFPs is collection of raw material for sale to pharmaceutical, cosmetic, and health food/supplement manufacturers.

Valuable medicinal and herbal NTFPs are highly demanded by these manufacturers. For example, over 40 % of prescription drugs constituting \$15.5 billion in sales per year, contain at least one natural active ingredient (Vance 1995 and Foster 1990). Herbs and medicinal plants, many of forest origin, are a very important part of modern medicine and are treatments for such diseases as cancer, leukemia, heart disease, pain relief for major trauma. Some believe that safer natural compounds could replace synthetic compounds that occur in 75% of prescription drugs. However, the cost of proving a new drug safe and efficacious is approximately \$125 million in the United States, a serious detriment to medicinal NTFP research (Foster and Duke 1990).

## ***7.2 Common Medicinal and Herbal Products***

The following NTFPs were found to be commonly traded in southwest Virginia, which indicates their relatively high market demand. Prices were obtained from local dealers in spring and summer of 1997.

Goldenseal (*Hydrastis canadensis*) – Goldenseal root is traditionally used in tea or tincture to treat inflamed mucous membranes of the mouth, throat, digestive system, and uterus. It is also used for jaundice, bronchitis, pharyngitis, and gonorrhea, eye infections, lowering blood pressure (experimentally), and acts as a mild sedative and anticonvulsant. Some believe goldenseal is being overharvested in Appalachian forests (Duke 1985). Goldenseal was bought from collectors by dealers in southwest Virginia for \$25 to \$30 per pound in 1997.

American ginseng (*Panax Quinquefolius*) – The root is considered a demulcent, tonic and an “adaptogenic”, meaning it has a normalizing effect on the body. Research suggests it may increase mental efficiency and physical performance, and aid in adapting to high or low temperatures and stress (Foster and Duke 1990). Ginseng was bought from collectors by dealers in southwest Virginia for \$250 to \$300 per pound in 1997.

Slippery elm (*Ulmus rubra*) – Three tablespoons of inner bark in a cup of hot water makes a thick mucilaginous tea, traditionally used for sore throats, upset stomach, indigestion, digestive irritation, stomach ulcers, coughs, diarrhea, dysentery, and pleurisy. The tea made from powdered inner bark can be applied to fresh wounds, ulcers, burns, and scalds. Science has confirmed that the tea is soothing to mucous membranes and softens hardened tissue. The inner bark is also edible and can be used as a nutritious broth for children and convalescing patients (Schauenberg 1977). Slippery elm bark was bought from collectors by dealers in southwest Virginia for \$1.50 per pound in 1997.

Blue cohosh (*Caulophyllum thalictroides*) – The root was used extensively by Native American to treat profuse menstruation, abdominal cramps, urinary tract infections, lung ailments, and fever. It has been prescribed by physicians for chronic uterine diseases and is said to cause abortion by stimulating uterine contractions. An alkaloid in the root has effects similar to nicotine and raises blood pressure, stimulates the small intestine, and causes hyperglycemia (Morton 1977). Blue cohosh root was bought from collectors by dealers in southwest Virginia for \$1.00 per pound in 1997.

Marijuana (*Cannabis sativa*) – Leaves are smoked as an illegal intoxicant. Its legitimate uses are to treat glaucoma and nausea following chemotherapy in addition to many folk uses. It is a fiber and oilseed plant in many other countries and is potentially a very useful medicinal plant (Foster and Duke 1990).

Bloodroot (*Sanguinaria canadensis*) – The red root was used in tiny doses as an appetite stimulant and in larger doses as an arterial sedative. Native Americans used the root tea for rheumatism, asthma, bronchitis, lung ailments, laryngitis, and fevers. The root juice can be applied to warts or used as a dye and decorative skin stain. Bloodroot is used commercially as a plaque-inhibiting agent in toothpaste and mouthwashes (Morton 1977). Bloodroot was bought from collectors by dealers in southwest Virginia for \$7.00 per pound in 1997.

A growing trade in unprocessed medicinal and herbal NTFPs exists in the Appalachian region since the Pure Food and Cosmetic Act prohibited patent medicine. The region supplies medicinal and herbal products in raw material form to cosmetic, pharmaceutical, and other industries around the United States and world. The resulting trade in these products provides income to many people in the region.

Local collectors have harvested medicinal and herbal NTFPs for centuries in southwest Virginia. Collection is not decreasing due to a lack of interest in younger generations, unlike certain NTFP crafts. Children, adults, and elderly people collect these NTFPs either for home use or sale. The income supplements retirees' social security payments, helps households raise children, or could be a source of income for children who wouldn't otherwise have a job opportunity. Often, collectors are not willing to reveal amount of income earned from NTFPs for fear of increased income tax or lowering of social security payments.

People are attracted to medicinal and herbal NTFP collection by the immediate cash payments and prices which may be very good depending on demand. Many collectors are low income earners who depend on collection to supplement their income. Furthermore, collection is an activity popular with those who live in the mountains. Mountain people are typically independent people who enjoy recreating in the forest. Some would prefer the security of urban office employment but due to lack of education, skills, or opportunity are relegated to mountain life and collect NTFPs for income. Collection is hard physical labor, however, the income it provides is often enough to motivate people. In addition, income from NTFP collection is easily unreported and not included in annual income tax. Ultimately, processed medicinal and herbal products are sold to consumers in southwest Virginia and around the world in the form of drugs, health and dietary supplements, cosmetics, and food.

### ***7.3 Value Addition and Market Outlets***

Collectors sell NTFPs to several dealers throughout the area. These dealers act as the first intermediary in the market chain from the products' source in the forest to the final consumer. Dealers often buy medicinal and herbal NTFPs and scrap metal. Possible reasons for this association may be that many of the people who collect NTFPs also collect scrap metal. The two products are related in that both involve outdoor collection of a wild or salvaged material. People may collect scrap metal when medicinal and herbal

NTFPs are not yet mature, such as during winter months. Some of the poorest collectors lead a scavenger lifestyle and will collect anything that has value. Dealers give immediate cash payments for clean, dry NTFPs collected in their appropriate season. Dealers then sell NTFPs to larger dealers or producers outside of southwest Virginia and out of the country.

Some products return to southwest Virginia in processed form as pills, capsules, food, teas, tinctures and are sold in health food and drug stores throughout the area. Many of the products are sold to buyers in the European health food and nutritional supplement market and ginseng collected in southwest Virginia is almost exclusively sold to buyers from east Asia. Some NTFPs, such as slippery elm bark, are processed into cosmetics by large companies such as Maybelline and return to southwest Virginia for sale in drug and cosmetic stores. Products sold in retail stores of southwest Virginia are usually competitively priced and many residents can afford to buy them.

Value addition at the collector's level is limited due to lack of resources and market knowledge. The extent of collectors' value addition is cleaning, drying, and sorting of NTFPs, which are usually required by dealers. Some dealers dry NTFPs and sort them into larger bales and sacks. Even at the dealer level, value addition is limited by the Food and Drug Administration and industrial buyers' quality standards. One large dealer located outside of southwest Virginia is planning an innovative value addition activity. Since industrial buyers often grind NTFPs to a fine powder after purchasing from a dealer, he plans to powderize as the last step in his value addition. This particular dealer is very large and has resources needed to perform this step in value addition.

Local collectors and dealers cannot prepare NTFPs themselves in such ways as encapsulating and making teas because industrial buyers have strict quality control standards. These buyers often conduct chemical analyses in laboratories in order to meet

their own standards and those of the Food and Drug Administration. Often buyers will test each bale or barrel of raw material. If the product fails to meet standards, the whole quantity can be returned to the dealer. Local fabrication of medicinal and herbal products violates the Pure Food and Cosmetic Act (Center For Appalachian Studies and Services 1989).

#### ***7.4 Pricing***

Dealers have indicated in interviews that prices for medicinal and herbal NTFPs vary by dealer and demand. For example, one dealer bought bloodroot at \$3.50 per pound in 1996 and another dealer bought at \$4.00 per pound. Collectors are at liberty to sell to the dealer which gives the highest price. However, most collectors will sell to a local dealer for a lower price instead of travel a distance to another dealer offering a higher price. Prices also vary with market demand. High demand correlates with a high price paid to collectors. As a result, many collectors will bring the NTFP to a dealer and demand will be flooded. In the next season for this product, prices will be low because demand is low. Therefore, collectors will collect a different NTFP which has higher demand.

Producers outside of southwest Virginia set prices at which they will buy medicinal and herbal NTFPs. Dealers within the region are notified of these prices and can adjust the price at which they buy products from collectors to allow their margin of profit. Some believe that local people should have more control in setting prices. However, others believe that relations between dealers and buyers are cordial and price negotiations are already free to take place. Producers appear to have control over the NTFP trade since they regulate prices. This indicates a similarity between the medicinal and herbal NTFP trade and historic industries in southwest Virginia. The removal of medicinal and herbal raw material is essentially the same as the removal of natural resources such as coal, mineral, timber, and tobacco by outside market players who control prices. Local residents have typically had little control over a trade which removes a raw material from

the region. The trade in medicinal and herbal NTFPs may be situation which leads to the perpetuation of poverty in a similar way as the declining coal, mineral, timber, and tobacco industries. When production is controlled by intermediaries outside the region, collectors tend to remain poor regardless of the amount of wealth they generate (Fearnside 1989 and Browder 1992).

### ***7.5 Promotion***

Promotion is mainly performed by processors outside of southwest Virginia. Great competition does not exist in the supply of medicinal and herbal raw materials to processors. Therefore, levels of the marketing chain below producers need not advertise their products. However, competition among final producers is keen worldwide. Producers often print brochures and store displays to promote their products. Promotion is a vital business practice for market players in the final levels of the marketing chain for medicinal and herbal NTFPs.

### ***7.7 Distribution and Marketing Chains***

Based on the field research in 1997, the distribution and marketing chain for medicinal and herbal NTFPs can be described and diagrammed in Figure 7.1. The first level of the marketing chain is forest collection. Collectors then sell NTFPs to local dealers as cleaned, dried, and mold-free raw material. These dealers interact with three potential buyers: larger regional dealers, industrial buyers, and foreign buyers. Large regional dealers exist outside of southwest Virginia. In comparison with dealers in southwest Virginia, larger dealers have greater capital investment in storage facilities and baling and transport machinery. These dealers are capable to handle a much greater volume than that which passes through small dealers in southwest Virginia. All dealers located within southwest Virginia can be considered small based on the NTFP volumes they buy and sell

as compared with large regional dealers. Dealers sometimes sell directly to industrial producers which place orders from outside of the region. These producers process NTFPs into their final form. Some dealers ship most of their products to Europe where the health food and supplement industry has typically been larger than in the United States. Other foreign buyers are from southeast Asia, particularly China.

The next level in the marketing chain consists of medicinal and herbal NTFP producers. These producers include pharmaceutical, cosmetic, and health food/dietary supplement industries. Examples are Nature's Way and Frontier Herbs, manufacturers of health foods and over-the-counter dietary supplements; Maybelline, a cosmetics manufacturer; and other pharmaceutical companies which use natural products as ingredients in synthesized prescription medicines. NTFPs are processed into their final form (capsule, pills, cosmetics, tea, lotions, etc.) by these industries and are mainly distributed throughout North America, Europe, Australia, and Asia. Products are sold in retail or wholesale sales centers including over-the-counter drug stores, prescription drug pharmacies, cosmetic stores, health food stores, and catalog sales. Products are then sold to the final level in the marketing chain, the consumer.

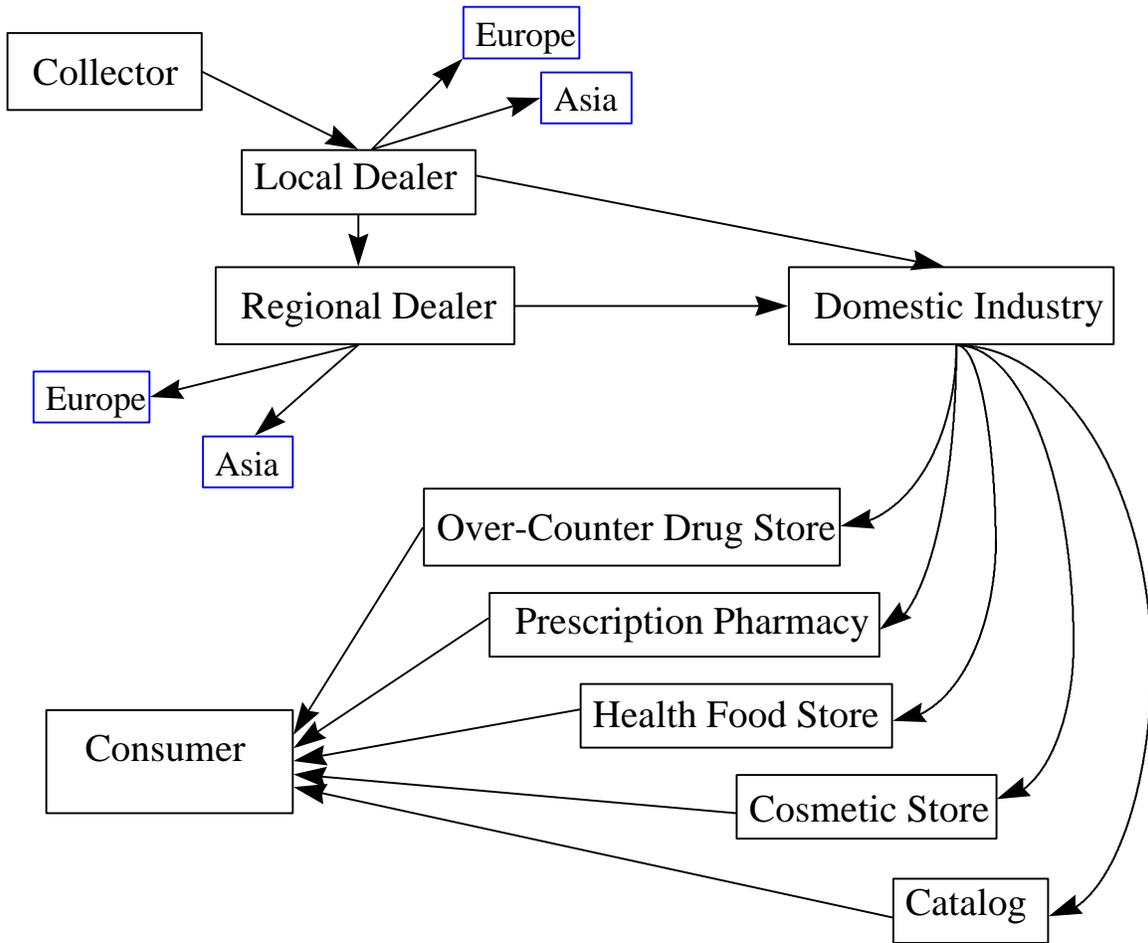


Figure 7.1 Marketing chain for medicinal and herbal NTFPs from southwest Virginia