Fenugreek
Not Just For Curry

by Tamara Schryver, M.S., R.D.

Fenugreek leaves

The American Diabetes Association estimates that about 17 million Americans have diabetes, with several conventional-based treatments available. While many of the conventional treatments work when used appropriately, some people with diabetes prefer to augment their therapies with elements from the alternative medicine world like dietary supplements and/or herbs. Others are simply looking for a way to avoid the use of oral hypoglycemic medications, most of which have undesirable side effects. Many of the herb-based supplements have a rich history of use that—despite the young science supporting it—deserves a warranted try. One such herb is that of fenugreek or Trigonella foenum-graecum L., meaning “Greek hay,” a traditional Indian curry spice.

History
Most likely you have smelled fenugreek but just were not aware of it. It has a distinct, characteristic aroma that reminds many Westerners of Indian food. In Western curry spice blends it is one of the main components. It also flavors imitation maple syrup and is an ingredient in baked goods and chutneys. While originally grown in China, the Mediterranean and Indian regions, it has recently made its way to Saskatchewan, Canada, where it is being heavily researched as a potential new crop for Canadian farmers.

Fenugreek is a green, herbaceous plant that looks similar to alfalfa and is cultivated somewhat like wheat.

Indicated Uses
Fenugreek is first recorded use dates back to the time of the Egyptians where it was used to induce childbirth, as incense or with other ingredients for embalming. Traditional internal use includes fenugreek for the treatment of decreased appetites (common in people with disease), an upset stomach, gastritis, calming ulcers, high blood sugar and cholesterol levels and generalized weakness. Topically, fenugreek seeds have been ground with water to make a poultice for the management of staph skin infections, muscle pain, inflammation of the lymph nodes, gout, wounds and leg ulcers. More recent evidence supports the use of fenugreek for lowering blood sugar levels in people with diabetes, and to a lesser extent, for lowering blood cholesterol. Additionally, the soluble fiber content of fenugreek may play a role in aiding weight control.

Fenugreek Plant Basics
While the green, leafy part of the fenugreek plant is still eaten in India and supplies a good source of beta carotene, the seed is the part that is used for alternative medicine practices. Unlike many plant proteins, the seed has an unusually high proportion of protein (approximately 20–30 percent) as well as an interesting amino acid called 4-hydroxyisoleucine, which has potential insulin-stimulating activity. The fatty acid composition registers between 5–10 percent, which is predominately linoleic acid, linolenic, oleic and lastly, palmitic acid. Most unusual is its carbohydrate proportion—of the remaining 45–65 percent carbohydrate, approximately 15 percent of that is galactomannan, a soluble fiber. Along with these macronutrients, fenugreek seed also contains flavonoids, coumarins, sapponins (1.3 percent) and more calcium, phosphorous, iron, zinc and manganese than most legumes.

Diabetes Basics
Most people are aware that there are two main types of diabetes: type 1 and type II. Blood sugar levels are controlled by a hormone known as insulin that escorts sugar from the blood stream into target cells. The presence of insulin in the body determines whether or not a person is type 1 or 2. Type 1 diabetes is a disease where the body does not produce any insulin at all, allowing blood sugar levels to elevate. It usually occurs in children. Only about 5–10 percent of all people with diabetes are type 1 but that small percentage must take insulin injections daily. On the other hand, what was once referred to as “adult onset diabetes” but is increasingly being seen in children, is termed type II diabetes. In this disease the body is making insulin but it may not be enough or it may not be recognized by the target cells, which results again in high levels of circulating blood sugar.

Although it is quite possible to live a normal life with either type 1 or type II diabetes, concerns about regulating blood sugar levels exist due to the complications that uncontrolled diabetes can lead to such as gum disease, foot disease, skin disorders, poor eyesight or blindness, kidney disease, cardiovascular
disease, neuropathy, and in extreme cases, organ transplantation.

Prediabetes is the warm up to type II diabetes and it is a very real phenomenon. Recently renamed prediabetes, this problem used to be referred to as having a high/impaired fasting plasma glucose test (IFG) result or high/impaired oral glucose tolerance test (OGTT) result. Recent research from the Diabetes Prevention Program showed that about 11 percent of people with prediabetes developed type II diabetes each year of the three years of the follow up portion of the study, with other research indicating that most people with prediabetes evolve into full-blown type II diabetics within 10 years. While this sounds discouraging, the good news is that if you catch someone in a prediabetic state, it is quite possible to prevent or delay the onset of type II diabetes. In fact, a position statement from the American Diabetes Association is encouraging for all alternative consumers in that it does not recommend the use of medications but instead, recommends lifestyle intervention. “The greater benefit of weight loss and physical activity strongly suggests that lifestyle modification should be the first choice to prevent or delay diabetes.” What this means is that modest weight reduction (5–10 percent of body weight) and a total of 150 minutes of moderate exercise per week is more effective in preventing or delaying type II diabetes than medications like metformin, acarbose and troglitazone. However, if you are currently on these medications, do not discontinue use without consulting your physician.

Fenugreek for Diabetes

Even more promising is that fenugreek seeds, which are high in soluble dietary fiber, have a track record of helping to control blood sugar levels. While fenugreek is used to treat type II diabetes, some have suggested that it may play an integral role in persons in the prediabetes state. In either case, the research is promising.

A typical fenugreek research study includes people with type II diabetes on a standard diet with divided doses of fenugreek seed or extract with meals. The patients may have varying levels of complications and are generally on oral medication. For example, 60 patients with type II diabetes were placed on 25 grams of fenugreek seed powder divided into two doses, delivered at lunch and dinner. Results revealed that postprandial blood glucose (or glucose levels measured after a meal) and urine sugar significantly decreased compared to the start of the study.

In another study, 25 newly-diagnosed persons with type II diabetes were randomly divided into one of two groups: 1) 1 gram of fenugreek extract group or 2) placebo group. At the end of the two-month testing period, group one had decreased insulin resistance and a decreased area under curve (AUC) of blood glucose. This means that group one’s blood sugar levels were elevated for a shorter period of time than group two. Similar lowering of blood glucose levels were found in healthy subjects fed 25 gm/day fenugreek and type II diabetics fed 15 gm/day.

Finally, while this article is too short to evaluate all the literature, Natural Medicines Comprehensive Database gives fenugreek a “possibly effective” rating for its ability to lower blood sugar.

Fenugreek in Weight Control

In addition to controlling diabetes, the soluble fiber portion of fenugreek is thought to promote weight loss mainly by producing a feeling of fullness or satiety. Viscous fibers, such as fenugreek galactomannan, form a thick gel in the gastrointestinal tract. This slows the rate that food and nutrients (including glucose for blood sugar control) leave the stomach and enter the intestine. Delayed gastric emptying allows individuals to feel full because the stomach is full for longer periods of time. Delayed nutrient absorption, particularly of glucose, can reduce the glycemic index of food consumed. Low glycemic index meals have been associated with feelings of satiety in several studies.

Further, diets rich in fiber are generally low in energy density. Fiber does not contribute calories but is bulky. Therefore individuals can reduce the caloric value of a given volume of food by displacing other nutrients with fibers from fenugreek. They will still be eating the same amount of food but less calories, while at the same time producing a greater feeling of fullness.

Practical Points

Fenugreek is currently available in seed form—either ground or whole for its medicinal properties—or as a dietary supplement, predominantly as fenugreek fiber. While the

Herbal Medicines Monograph recommends 6 grams a day of crushed or cut seed, typical dosages found in clinical research range between 15–100 grams, with the most commonly used amount of 25 grams (equal to 3.75 grams of soluble galactomannan fiber). For those who don’t normally consume fenugreek seeds, 25 grams seems like a lot—and it is. Fenugreek extracts, which concentrate the galactomannan portion, make it possible to reduce the total intake to 3–5 grams a day, or 1–2 grams three times daily (approximately equal to 3–4.8 grams of soluble galactomannan fiber from a 60–85 percent extract). Additionally, some manufacturers of fenugreek supplements have been able to deodorize the product, making it much more acceptable to consumers in the U.S. Fenugreek is generally recognized as safe (GRAS) for use both as a spice and as a fiber.

Fenugreek fiber is most effective in lowering postprandial blood glucose when consumed with a meal. Those wishing to use it should be safe in doing so, provided they consume it with a meal and monitor their blood glucose levels. As well, it’s important to inform your physician or diettian about this new dietary change so that they too can help you monitor your blood sugar. Because of fenugreek’s coumarin content, it could potentially interact with herbs, supplements and other medications with anticoagulant activity. It could potentiate MAO inhibitors, inhibit corticosteroids and possibly interfere with hormone therapy.

Tamara Schryver, M.S., R.D., has worked with clients and patients in both the hospital and public health setting. She is an active member of the American Dietetics Association. Currently she is a freelance nutrition writer pursuing her doctorate in nutrition at the University of Minnesota. She can be reached at 952-898-2577; RTSchryver@aol.com

Visit our Web site: totalhealthmagazine.com

Fenugreek seeds