



## Lebanese Viagra – *Ferula*, *Pleurotus*, and Geopolitics

by Elinoar Shavit

IN THE SPRING OF 1998, the U.S. Food and Drug Administration approved the use of Viagra for men with erectile dysfunction. In the summer of 1998, CNN ran a piece in its Health section about a natural alternative to this drug. The piece was titled “Lebanon has its own natural version of Viagra.”<sup>2</sup> The “natural version” was “a wild root called Shirsh Zallouh,” which “pharmacists and villagers claim is a potent and effective brew, with no side effects and only one slight problem: ‘The taste is a little rough.’”<sup>2</sup> Shirsh Zallouh, meaning “hairy root” in Arabic, has been used for generations in Lebanon, Syria, and other Middle Eastern countries to enhance sexual desire and performance in both sexes.<sup>14</sup> Nicknamed “Lebanese Viagra,” it became the newest craze in herbal medicine.

Shirsh Zallouh is the common name for *Ferula hermonis* Boiss., a plant in the family Umbelliferae (Apiaceae), which also includes fennel, parsley, wild carrot, Chinese angelica, and the poisonous hemlock made famous by Socrates. *Ferula hermonis* grows on Mt.

Hermon, hence its name. Mount Hermon is located in the northern part of Israel where the borders of Israel, Syria, and Lebanon meet. At 9,232 feet (2,814 meters) above sea level, it is the highest mountain in Israel and Syria. Zallouh grows and is collected only on the mountain slopes located in Syria and Lebanon, but not on the southern slope, which is in Israel. According to shepherds on Mt. Hermon, the libido enhancing potency of *F. hermonis* was discovered by goat herders on the mountain who noticed the strong sexual effects that grazing on *F. hermonis* had on their herds during mating season.<sup>14</sup>

There are poisonous, non-poisonous, and edible plants in the genus *Ferula*. *Ferula hermonis* is not a poisonous plant. Over 100 species of *Ferula* are widely distributed throughout the Mediterranean region and parts of Asia, including the Middle East, and this genus is not a newcomer to the world of traditional medicine. Traditionally, plant extracts are prepared from the roots and seeds of *F. hermonis*. The roots are picked in summer, after they have had a chance to mature and before the winter snow storms begin. The extract is made from the resin that oozes out of the cut

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Above: A stand of *Ferula communis* on Mt. Gilboa, Israel.

roots. An extract made from the seeds of *F. hermonis* is also popular, and honey made from the pollen of its flowers is reported to have a mild aphrodisiac effect. The resin collected from the roots can be dissolved in high proof alcohol. Since ancient times, resins extracted from other species of the Umbelliferae have been used in aroma therapy and medications, as a spice, and to stabilize perfumes. Galbanum, a resin from the roots of *F. gummosa* (=galbaniflua), is mentioned in the Bible (*Exodus* 30:34) in the context of making incense for the tabernacle.<sup>3; 14</sup> Despite this resin's bitter taste and musky odor, it is still included in many perfumes and can be found on the label of a number of popular scents, like *Chanel No19* and Givenchy's *Ysatis*. Galbanum contains umbelliferone, a compound found in other members of the Umbelliferae, which is used in sunscreen lotions.<sup>4; 12</sup>

The Druze, who live on Mt. Hermon and its vicinity, have used Zallouh (*F. hermonis*) for generations. They claim that both men and women can benefit from its aphrodisiac and stimulating properties, and that elderly people find it particularly energizing and revitalizing.<sup>3; 4; 14</sup> Roots of *F. hermonis* contain vitamins A, B1, B2, B6, C, D and E. The minerals magnesium, selenium, zinc and iron have been identified in the roots, as well as a number of sesquiterpenes like ferutinine, teferdin, and ferutinol. Ferutinine and tenuferidine have demonstrated estrogenic activity.<sup>3; 14; 15</sup> According to the 1998 CNN piece, Zallouh has been well received among followers of natural remedies. It is offered to the public on the Internet and in Middle Eastern spice and herb shops as an effective, side effect-free, alternative to Viagra.

*Ferula hermonis* is not the only member of the genus *Ferula* that is attributed with aphrodisiac properties. In the spring, villagers in the area of Mt. Gilboa in Israel collect the immature flower buds of the Giant Fennel (*F. communis*), a close relative of Zallouh, which is abundant in the area. It should be noted that

the Giant Fennel is *F. communis*, not *Foeniculum vulgare*, which is the edible fennel that is known for its licorice odor and flavor.



Left to right: Young *Ferula communis* plant, flower-bud "pods" of *F. communis*, and flower buds ready for cooking.

Both Giant Fennel and the edible fennel are members of the Umbelliferae. The embryonic flower buds of *F. communis* are collected in early spring, when they are still enveloped by their pod-like protective sheath. These pods, which look like small ears of corn, contain a multitude of individual, broccoli like, bright green florets. An elderly couple from a local village, who instructed us on the safe collection and use of the flower buds of *F. communis*, told us that the cooked buds were known for their libido enhancing property and for providing renewed energy. The flower buds we collected were exceptionally tasty when cooked with lamb. However, a strict warning is required here: while the immature flower buds of *F. communis* are edible, the rest of the plant is poisonous! It is responsible for numerous cases of sickness and death among herds, especially among sheep that accidentally graze on its leaves in spring. Consuming *F. communis* may result in severe internal bleeding. Prenylated coumarin ferulenol was extracted from this plant. Coumarin is a precursor for some anticoagulants, such as warfarin.<sup>9; 11</sup>

The Giant Fennel is a common plant in the temperate Mediterranean region and parts of Asia. Its particularly tall flower stem is inadvertently responsible for the scientific name of the genus *Ferula*: in ancient times these stems were dried and used as strong, hollow rods, called "ferula" in Latin.<sup>10; 13</sup> These rods were popular as walking canes, splints to help set broken bones, and as the cane of choice for administering corporal punishment. In Greek mythology, the Titan Prometheus hid burning coals in the hollow rod of *F. communis* to smuggle the gift of fire to mankind.

Another gift to mankind, courtesy of the Giant Fennel, is the excellent edible mushroom *Pleurotus ferulae* (formerly *Pleurotus eryngii* var. *ferulae*) that grows in spring from its roots and branches.<sup>13</sup> This mushroom grows in particular abundance in the area of Mt. Gilboa and is coveted by the local villagers. The area is famous for *P. ferulae*, which even gave its name to the mountain: Mt Gilboa is called "Mount of the Mushroom" (Jabal Faqu'a) in the Arabic dialect spoken in the area, and a nearby Palestinian village is called "Mushroom" (Faqu'a), both after the coveted *Pleurotus ferulae*.<sup>10</sup>

*Ferula communis* buds and *Pleurotus ferulae* mushrooms are col-



*Pleurotus ferulae* on Mt. Gilboa, Israel. Photo by D. Lewinsohn.

lected from the same plants, in the same area, and during the same season. As a result, they are often consumed in the same meal. We were told that like the flower buds, the mushrooms are known for enhancing sexual energy, and that the effect is further augmented when the buds and the mushrooms are eaten in the same meal. Unfortunately, we were unable to determine if any reputable studies have confirmed these observations, or whether *P. ferulae* grows with Zallouh on Mt. Hermon.

Although considerable information about the bioactive compounds isolated from *P. eryngii* var. *ferulae* and *P. eryngii* var. *eryngii* is available, it may not be entirely clear if the mushrooms used in these studies were indeed *P. ferulae*. The reason is that *P. eryngii* and *P. ferulae* are often lumped together as “Pleurotus of the Umbellifers.” However, *P. eryngii* and *P. ferulae* recently have been classified as separate species.<sup>13</sup> Even though both species colonize the roots and stems of plants in the Umbelliferae, *P. eryngii* grows almost exclusively on the roots of *Eryngium campestre*, which is not attributed with aphrodisiac properties, whereas *P. ferulae* prefers the

roots of *Ferula communis*. The fruitbodies of *P. eryngii* and *P. ferulae* look very similar when young, although they have a slightly different color and shape when mature. Both are weakly parasitic, but there is evidence that *P. eryngii* is mostly saprophytic, whereas *P. ferulae* is mostly pathogenic.<sup>13</sup> *Pleurotus ferulae* and *P. eryngii* are cultivated and sold commercially around the world under a variety of names, such as “King Oyster” and “French Horn.”

Since its sudden exposure in the media following the 1998 CNN piece, the popularity of Zallouh has been growing rapidly and the threat of over-collection has increased. The Lebanese government forbids commercial collection of its roots in Lebanese territory, but Lebanese villagers residing on Mt. Hermon have a long tradition of collecting and using Zallouh, and they organize its collection and sale on their own.<sup>1; 8</sup> Things are different on the Syrian side, where the Syrian government placed the army in charge of the collection, production, and sale of Zallouh, under the command of an army colonel. According to a popular overview of Zallouh, titled “Zallouh – Syrian Sex Plant,” which was published on the Ameri-

can Wellness Network in 2009, the Syrian army ensures that areas of *F. hermonis* are harvested according to a schedule that supports regeneration of the plant.<sup>8</sup>

The CNN article and others in its style are problematic. They make powerful claims about the efficacy as well as the safety of Zallouh and offer an open invitation for anyone to use it. They are based on the opinions of so-called Zallouh experts who may not have the authority to dispense such medical advice to the public. In this article, the authority of the expert, a Beirut pharmacist who prepares and sells Zallouh extract and stands to gain from its growing popularity, is validated in part by the fact that he was interviewed by CNN. This pharmacist is presented as an accomplished scientist and the leading authority on Zallouh and its products, health benefits, and safety. The author describes himself as: “a pharmacist for over 50 years, a specialist in phytotherapy, pharmacology, and toxicology . . . more than

- “Lebanese Viagra” refers to extracts made from the roots and seeds of Zallouh (*Ferula hermonis*), which are known to produce Viagra-like effects.
- Experiments with rats have confirmed that 1) the efficacy of Zallouh extract as a sexual stimulant for the treatment of erectile dysfunction and sexual asthenia (but only when it is used occasionally), and 2) habitual exposure to Ferula extracts can lead to fertility disturbances and a reduction in the weight of testes and other sex accessory organs.
- The fact that a compound has been used for thousands of years in traditional medicine does not establish its efficacy or safety.
- The local Arabic name for Mt. Gilboa is “Mt. Mushroom” (Jabel Faqqu’a), so called after a favorite edible mushroom, *Pleurotus ferulae*, which grows with the roots of the Giant Fennel (*Ferula communis*) on its slopes.



A villager collecting flower buds of *Ferula communis*.

any other person in the Middle East he has championed the health benefits of Zallouh.<sup>16</sup> This gives the appearance of legitimacy to any information about Zallouh that is provided by this pharmacist, who is then quoted as saying that Zallouh is “a supreme elixir of life and vitality... more than a sex plant... helps to retard the aging process . . . if you take Zallouh every day, it will help you keep strong and youthful... once somebody tries Zallouh extract for sexual vigor they come back for more, because it is very, very effective... I have given it to many, many people who have been satisfied.”<sup>15</sup> The author of this article concludes his discussion of Zallouh by stating that: “for the most part, Zallouh root and its various preparations appear safe and effective for a majority of users.”<sup>15</sup>

The claim that habitual use of Zallouh makes a good thing even better, is not only dangerous, but it may not be supported by recent research. A number of promising studies on the efficacy, safety, and mode of operation of Zallouh have demonstrated that there could be serious ramifications to the long-term use of Zallouh. In 2003, the *International Journal of Impotence Research* (IJIR) published the results of a study in male rats, which compared their sexual performance after the administration of an acute dose of Zallouh extract to their sexual performance following a period of continued administrations of Zallouh extract. The

authors concluded that the acute administrations of Zallouh extract to potent male rats significantly enhanced their sexual appetite and behavior.<sup>16</sup> In line with this finding, a similar one time administration of Zallouh extract to sexually sluggish or impotent rats improved and partially restored their copulation performance. The authors concluded that this could be ascribed to the significant increase in testosterone serum levels. In that respect, “these findings provide experimental support to the traditional use of *F. hermonis* as a sexual stimulant for the treatment of erectile dysfunction and sexual asthenia.”<sup>16</sup>

On the other hand, when the rats were given a regular daily dose of Zallouh extract, the results were very different. Even if we keep in mind that these are only preliminary studies done on rats with different dosages of *Ferula* extract, the results are sobering. After 10 days of repeated administrations of Zallouh extract, even with very low dosages, the rats’ copulatory pattern worsened dramatically, and reduced testosterone levels were observed in them. The authors of the IJIR study pointed out that other studies have demonstrated that prolonged exposure to *Ferula* extracts lead to fertility disturbances, a reduction in body weight, and in the weight of testes and other sex accessory organs.<sup>17</sup> They concluded that the findings suggest an antiandrogenic action of the plant’s extract. Moreover, an anti-fertility effect of *F. hermonis* extract administered repeatedly for a period of six weeks to both male and female mice was recently confirmed.<sup>17</sup>

The authors of the IJIR study conclude that while the positive effects of the acute administration of Zallouh extract on sexual behavior is impressive, a warning about the potential negative effects following repeated administrations of Zallouh extract is warranted.<sup>16</sup> A subsequent study in female rats concluded that both acute and repeated ingestion of *F. hermonis* specifically impaired the receptive and proceptive components of female sexual behavior. The authors of that study hypothesized that this effect could be the consequence of an antiestrogenic action in the hormone-primed female rats.<sup>17</sup>

While Zallouh extract is available on its own and in some herbal combinations, it is also an ingredient in supplements targeting men, such as Zallnex Male Formula, made by Nutranex. While there is evidence that Zallouh is effective as an acute libido enhancer, the misconception that it is a perfectly safe, recreational, natural and organic compound to be used regularly could have serious consequences, as discussed above. As with Viagra, there is also a risk to the cardiovascular and neurological systems in some people due to the vasodilatory effects of Zallouh.<sup>16; 17</sup> The fact that a compound has been used for thousands of years in traditional medicine does not establish its efficacy or safety.

Perhaps because the subject matter of these studies involved hormones, some of the authors must have had a Freudian slip when they misspelled *Ferula hermonis*, Zallouh’s scientific name, as “*Ferula hormonis*.”<sup>25; 7</sup> A little humor goes a long way when deal-

ing with human performance. This is also true in the tumultuous part of the world where Zallouh grows. It is no wonder that an article titled “Israeli bees go after ‘Lebanese Viagra’ in Syria,” written by an Israeli reporter, was also published in the Lebanese newspaper *YaLibnan*.

It tells the story of an Israeli beekeeper who strives to produce the purest honey possible. The “teaser” of the story is: “Mount Hermon —From a dry riverbed on this frontier mountain, under a fortified outpost where Israeli troops peer out at their Syrian enemies, Efraim Ezov sends his Israeli honeybees on daily sorties into Syrian airspace.” This beekeeper wanted to place his hives in a pristine place where no pesticides had been sprayed. He chose the slope of Mt. Hermon, fortifications and guns notwithstanding: “In summer, Ezov’s 1.5 million bees buzz over the Syrian border and gather Zallouh pollen . . . ‘Many people believe Zallouh increases sexual abilities,’ said 60 year-old Hussein Aghmia, an Israeli Arab customer of Ezov’s honey, who prides himself on being a maven of local vegetation and its healing properties. ‘Since ancient times, Hermon honey has been known as the best there is, and this honey is A-league!’ ”<sup>6</sup> Whatever other powers Zallouh may have, it certainly seems to have the power to cross cultures and borders.

### Works Cited

1. <http://biodiversity.moe.gov.lb/NR/rdonlyres/C8B3D5A9-6AC7-49E1-A8A9-CA3B8B66A34D/0/NBSAP.pdf> (accessed on June 18, 2009).
2. CNN. <http://edition.cnn.com/HEALTH/9808/12/natural.viagra> (accessed on June 18, 2009).
3. FitzSimmons, S. *Ferula hermonis*: The Lebanese Viagra. October 24, 2007, on Care2 News – [www.care2.com/news/member/930284705/519726](http://www.care2.com/news/member/930284705/519726) (accessed on June 18, 2009).
4. Fulder, S. 2005. Zallouh: The Ginseng of the Middle East. *Kol Hazmahim* 3: 8–10; *Journal of Pharmacology and Toxicology*, 1990, 4: 37–38 (published by Academic Journals, ISSN:1816-496X).
5. Homady, M. 2002. Reproductive toxicity and infertility effect of *Ferula hermonis* extracts in mice. *Theriogenology* 57(9): 2247–56.
6. Israeli bees go after “Lebanese Viagra” in Syria. *yalibnan.com*. Publ. Monday, October 1, 2007, Beirut. [http://yalibnan.com/site/archives/2007/10/israeli\\_bees\\_go.php](http://yalibnan.com/site/archives/2007/10/israeli_bees_go.php) (accessed on June 18, 2009).
7. Khleifat, K., M. H. Homady, K. Tarawneh, and J. Shakhanbeh. 2001. Effects of *Ferula hermonis* extract on social aggression, fertility and some physiological parameters in prepubertal male mice. *Endocrine Journal* 48(4): 473–82.
8. Kilham, C. *Zallouh*: Syrian Sex Plant. [www.americanwellnessnetwork.com](http://www.americanwellnessnetwork.com) (accessed on June 18, 2009).
9. Monti, M., M. Pinotti, G. Appendino, F. Dallochio, T. Bellini, F. Antognoni, F. Poli, and F. Bernardi. 2007. Characterization of anti-coagulant properties of prenylated coumarin ferulenol. *Biophysica Acta (BBA) (general subjects)* 1770(10): 1437–40.
10. Rozenson, I. Harei Bagilboa’ – Mount Gilboa in the Miqra – *Da’at*. [www.daat.ac.il/DAAT/kitveyet/taleley/harey-2.htm](http://www.daat.ac.il/DAAT/kitveyet/taleley/harey-2.htm).
11. Rubiolo, P., M. Matteodo, G. Riccio, M. Ballero, P. Christen, S. Fleury-Souverain, J. L. Veuthey, and C. Bicchi. 2006. Analytical discrimination of poisonous and nonpoisonous chemotypes of giant fennel (*Ferula communis* L.) through their biologically active and volatile fractions. *Journal of Agriculture and Food Chemistry* 54(20): 7556–63.
12. Stoddart, D. M. 1990. *The Scented Ape: The Biology and Culture of Human Odour*, Cambridge University Press, New York, (ISBN 052139561-5), pp:172–95.
13. Urbanelli, S., V. Della Rosa, C. Fanelli, A. A. Fabbri, and M. Reverberi. 2003. Genetic diversity and population structure of the Italian fungi belonging to the taxa *Pleurotus eryngii* (DC.:Fr.) Quèl and *P. ferulae* (DC.:Fr.) Quèl. *Heredity* 90: 253–59.
14. U.S. Patent No. 6623768: Herbal compositions and methods for diabetes and weight loss management. 2004. Inventor: Naguib, Y.M.A.
15. White, G. Edited version: [www.gcwhite.co.uk/Ferula.htm](http://www.gcwhite.co.uk/Ferula.htm) (accessed on June 18, 2009).
16. Zanolì, P., A. Bennelli, M. Rivasi, C. Baraldi, F. Vezzalini, and M. Baraldi. 2003. Opposite effect of acute and subchronic treatment with *Ferula hermonis* on copulatory behavior of male rats. *International Journal of Impotence Research* 15: 450–55.
17. Zanolì, P., M. Zavatti, M. Rivasi, and M. Baraldi. 2005. *Ferula hermonis* impairs sexual behavior in hormone-primed female rats. *Physiology and Behavior* 86(1–2): 69–74.