32. *ANETHUM GRAVEOLENS* L. (APIACEAE) — Dill, Dill Seed, Garden Dill

Dill is used primarily as a condiment. Dried fruits (seeds) are used in pickles, soups, spiced beets, fish, and fish sauces, with eggs and in potato salads. Fresh leaves are used in salads, with cottage cheese, cream cheese, steaks, crops, avocado, cauliflower, green beans, squash, tomatoes and tomato soup, zucchini, and shrimp. Dried leaves, known as dill weed, are also used to season various foods. Oil from the seed is used chiefly as a scent in soaps and perfumes, and in the pickle industry. Weed oil, from the above-ground parts of the plant, is used in the food industry because of its characteristic dill herb smell and flavor. The essential oil showed inhibitory effects on *Bacillus anthracis, B. mycoides, B. pumilus, Escherichia coli, Pseudomonas mangiferae, Salmonella typhi, Sarcina lutea, Staphylococcus albus, S. aureus,* and *Xanthomonas campestris* but did not inhibit *Shigella* sp.

The seed, prepared in various manners, is a folk remedy for abdominal tumors, condylomata, indurations, and tumors (abdomen, anus, liver, mouth, stomach, throat). The flower, cooked in oil, is said to help tumors around the anus. A cataplasm of the leaf is said to cure grains and indolent tumors.[4] Dill oil is used for apostemes of the breast. Dill is considered balsamic, detersive, digestive, diuretic, lactagogue, laxative, narcotic, psychedelic, resolvent, seductive, stimulant, and stomachic.[32] Dillwater is used for children's ailments, as flatulence and indigestion. The plant figures also into folk remedies for bruises, colic, cough, dropsy, hemorrhoids, insomnia, jaundice, sclerosis, scurvy, sores, and stomachache.[32,33]

Dill is said to contain or yield camphene, carvone, dihydrocarvone, dillapiole, dipentene, isomyristicin, limonene, monoterpene, myristicin, and phellandrine. Embong et al.[85] compared the chemical composition of various dill seed oils grown in Alberta (Canada). They found that the oils examined contained D(+)-carvone (43.3 to 48.9%), D(+)-limonene (33.1 to 40.8%), D-alpha-phellandrene (4.3 to 9.7%), trans-anethol (0.1 to 0.7%), p. cymene (2.8 to 4.9%), D(+)-dihydrocarvone (1.4 to 2.5%), myrcene (0.7 to 1.2%), beta-phellandrene (1.4 to 2.5%), and alpha-pinene (0.2 to 0.3%). The dried residue left after oil extraction of the seed contains 16.8% fat and 15.1% protein and can be used for cattle feed. Per 100 g, dill seed is reported to contain 305 calories, 7.7 g H_2O, 16.0 g protein, 14.5 g fat, 55.2 g total carbohydrate, 21.1 g fiber, 6.7 g ash, 1,516 mg Ca, 277 mg P, 16.3 mg Fe, 256 mg Mg, 20 mg Na, 1,186 mg K, 5.2 mg Zn, 53 IU vit. A equivalent, 0.42 mg thiamine, and 0.28 mg riboflavin.[21] Of the fatty acids, there are 0.73 g saturated, 9.4 g monounsaturated, and 1.0 g polyunsaturated, plus 124 mg phytosterol but 0 cholesterol. There are 575 mg threonine, 767 mg isoleucine, 925 mg leucine, 1,038 mg lysine, 143 methionine, 670 mg phenylalanine, 1,120 mg valine, 1,263 mg arginine, and 320 mg histidine. Per 100 g, dill weed is reported to contain 253 calories, 7.3 g H_2O, 20.0 g protein, 4.4 g fat, 55.8 g total carbohydrate, 11.9 g fiber, 12.6 g ash, 1,784 mg Ca, 543 mg P, 48.8 mg Fe, 451 mg Mg, 208 mg Na, 3,308 mg K, 3.3 mg Zn, 0.42 mg thiamine, 0.28 mg riboflavin, 2.8 mg niacin, and 1.5 mg vit B_6.

Toxicity — Insects (fruit flies) exposed to parathion alone showed only 8% mortality, but those exposed to the same level of parathion and d-carvone (or 3 other dill compounds) showed 99% mortality. Can natural products react with pesticides to produce synergistic responses, harmful to humans? Dill is said to contain the alleged "psychotroph" myristicin, like several other umbels, e.g., *Carum, Levisticum, Oenanthe, Pastinaca, Petroselinum,* and *Peucedanum.* Like *Ammi, Apium, Daucus, Foeniculum, Heracleum, Pastinaca,* and *Peucedanum,* dill may be a photosensitizer and/or cause dermatitis. As with oil of fennel, in vivo amination of dill oil can result in a series of three dangerous hallucinogenic amphetamines.[54]