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FILE: ▪Milk Thistle (*Silybum marianum*)
▪Milk Thistle – Veterinary Use

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RE: Milk Thistle: Review for Veterinary Medicine

Wynn SG. VBMA Report: *Silybum marianum* (Milk Thistle). *Journal of the American Holistic Veterinary Medical Association* July 2002;21(2):53-57.

Wynn, Executive Director of the Veterinary Botanical Medicine Association (VBMA; see http://www.VBMA.org), has summarized the characteristics, traditional uses, clinical effects, and current research on milk thistle *(Silybum marianum),* emphasizing the herb's veterinary applications.

Milk thistle is found in South America, the eastern U.S., and California, but is native to southern and western Europe. It also grows in China, where it is called Shui Fei Ji. Its spiny leaves have white veins, and legend has it that these contain milk from the Virgin Mary; inspiring common names such as Our Lady's thistle, Mary thistle, Mariendistel (in Germany), and Chardon-Marie (in France). Also called wild artichoke, historically the plant's fruit was eaten like artichoke, and its de-spined leaves like spinach.

The seed is the part of the plant that is used medicinally. Dioscorides is thought to have known it, and Gerard (1596) refers to it as a remedy against "melancholy" (bile-liver) diseases. Early U.S. Eclectic physicians used it to treat liver disease, splenic congestion, varicose veins, uterine hemorrhage, and menstrual problems. Traditionally, milk thistle is thought to nourish the liver, stomach, intestines, and kidneys. Some herbalists use it to increase lactation.

Wynn lists selected constituents of the seed, fruit, and plant body, but does not indicate in what proportion they occur. For example, the seed contains quercetin, but whether in significant amounts is not stated. Its active constituent is believed to be silymarin, an isoflavonolignan complex consisting of silibinin, silidianin, and silicristin. Silibinin is thought to be the most active of these.

A literature review by the U.S. Department of Health and Human Services found that, in 16 prospective placebo-controlled trials, design was of variable quality and evaluation difficult. A majority of trials involving alcoholic liver disease, viral hepatitis, and alcoholic and nonalcoholic cirrhosis found milk thistle beneficial. In two trials involving dogs given hepatoxic chemicals, silymarin or silibinin decreased hepatoxicity and improved survival rates. When milk thistle was fed to post parturient cattle, milk production increased and ketonuria decreased.

Clinical trials suggest that milk thistle decreases aminotransferase activity. Silybin reduces oxidative damage to kidney cells in vitro, and prevented cisplatin-induced nephrotoxicity in rats, but not cyclosporine-induced glomerular damage except for lipid peroxidation. In vitro tests, animal studies, and human trials have found that silymarin may inhibit synthesis of cholesterol and reduce blood lipids. In a controlled trial, human diabetics receiving silymarin experienced decreased blood sugar. As an antioxidant, silymarin can protect the pancreas.

Silymarin is believed to protect against genomic injury by suppressing lipoxygenase, hydrogen peroxide, and superoxide; increase hepatocyte protein synthesis; suppress nuclear factor (NF)-κβ; chelate iron and decrease glutathione destruction in iron-overload conditions; stabilize mast cells; slow calcium metabolism; and decrease activity of tumor promoters.

No contraindications have been reported. Milk thistle is believed safe for pregnant and lactating animals. However, it reduces activity of CYP3A4 and UGT1A6/9 liver enzymes, and may impair metabolism of drugs which rely on their action. Milk thistle may reduce insulin requirements for diabetics. When used in homeopathic doses, it has been found safe for food-producing animals by the European Agency for Evaluation of Medicinal Products' Committee for Veterinary Medicinal Products. Rare allergic reactions (gastrointestinal disturbances and skin rashes) have been reported.

Milk thistle is usually supplied as a solid extract standardized to 70-80% silymarin. Legalon® (Madaus, Germany) and Thisilyn™ (Nature's Way, U.S.) are the most-researched milk thistle products. Since flavonolignans are not very water soluble, liquid extracts must be alcohol-based. Absorption is said to be increased if silymarin is given with phosphatidylcholine. Standard dosages are given. Wynn writes that milk thistle should be used for at least eight weeks before biochemical results are expected; however, this does not apply to animals given hepatotoxic chemicals.

The article includes references to selected web sites and brief reviews of seven journal articles. Accounts of dogs (as well as rabbits, rats, and mice) given extracts of the toxic fungus *Amanita phalloides,* with some then receiving silibinin or silymarin, may disturb some readers.

¾ *Mariann Garner-Wizard*

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