SPINACH SEED

Spinach seed is one of numerous vegetable crops grown for both fresh market and its seed and within Yuma County. Acreage varies within the region depending on demand. The seed is produced for commercial consumption and for seed companies which supply seed for urban gardeners throughout the nation.

Spinach has been a diet staple for centuries. Originating in Asia it was introduced into Europe in the 15th century. Americans, such as Thomas Jefferson, grew it as far back as the 19th century.

Spinach (Spinaciaoleracea) is a flowering plant with leaves that are alternate, simple, ovate to triangular-based, very variable in size from about 1 inch to over 12 inches long. The flowers are typically yellow-green, maturing into a small hard dry lumpy fruit cluster ¼ to ½ inch across containing several seeds.

In popular folklore, spinach is a rich source of iron. In reality, a 60 gram serving of boiled spinach contains around 1.9 mg of iron (slightly more when eaten raw). A good many green vegetables contain less than 1 mg of iron for an equivalent serving. Hence spinach does contain a relatively high level of iron for a vegetable, but its consumption does not have special health connotations as folklore might suggest. Spinach has an undeserved reputation for being high in iron. In 1870, Dr. E von Wolf measured the iron content of spinach, but placed the decimal point in the wrong position. This overstated the iron content of spinach ten-fold. The mistake was not discovered until 67 years later, by German chemists. The myth of the high iron content of spinach is still being wrongfully yet widely circulated today.

Spinach is best eaten fresh. It loses nutritional properties with each passing day. Although refrigeration slows the deterioration, half of the major nutrients are lost by the eighth day after harvest. (For long term storage, freeze while fresh.). When fresh, it has crisp leaves. As they deteriorate, the leaves turn limp.

Vegetables consist of many species and cultivars, and can be classified in many ways such as botanical family and species, cultivar group, the edible part, climatic region, user ethnic origin, lifecycle and nutrition. In seed production the trend of producing hybrid seed usage in vegetable crops is increasing globally in term of species, cultivars and volume of seed used. The popularity of hybrid cultivars is due to their vigor, uniformity, disease resistance, stress tolerance and good horticultural traits including long shelf-life expressed and therefore giving consistent stable high yield.

Spinach belongs to the same family as beets and chard. This broad, leafy vegetable is cooling and is jade green in color. It has the slight bitter taste of its sister, beet greens and the slightly salty flavor of chard.

In the 1930's U.S. spinach growers credited Popeye with a 33% increase in domestic spinach consumption - a welcome boost to an industry during the depression era. The spinach grow-
The town of Crystal City, Texas, erected a statue of Popeye in 1937. 'Birds Eye' was the first company to advertise frozen spinach. It did so in "Life" magazine in 1949.

Breeding work with spinach began in earnest in the early part of the 20th century when breeders started selecting and hybridizing varieties with more disease resistance and those that would be slower to bolt (go to seed) in hot weather. One of the best-known varieties came from that period: 'Bloomsdale Long Standing,' a slow-bolting, savoyed plant still grown today. It is a monoecious plant, which means that the flower contains both male and female parts. By self-pollinating the plant over a number of generations, each time saving the seeds of the best performers and self-pollinating them, the breeders eventually ended up with a pure, inbred line.

The search for varieties resistant to mildews and viruses, as well as to bolting, continued through the 20th century. Such varieties as 'Viking' in 1935 and 'America' in 1952 were successful enough to win All-America Selections awards, although they are seldom grown today.

In 1955, researchers at the United States Department of Agriculture introduced the first hybrid spinach resistant to downy mildew, called by the uncatchy name of 'EH7.' One of the most popular hybrids of the time, 'Melody,' won an AAS award in 1977; the savoy-leaf hybrid grows very fast, is slow to bolt in hot weather, and does well as both a spring and fall crop.

The botanical name for spinach is *Spinaciaoleracea*. Spinacia comes from the Latin word for spine and refers to the prickly seed coat. The species name, oleracea, refers to a plant that is edible.

Spinach has varying leaf shapes and textures. There are two major types of leaf textures. Smooth-leaf spinach produces light to dark green leaves with an oblong shape. The leaves of savoy spinach are thicker, rounder, usually darker green, and range from very crinkled to only somewhat (the latter known as semi-savoyed). Breeders have crossbred both types so you may find a crinkled, savoyed leaf with the shape of a smooth-leaf type. An advantage one has over the other is that smooth-leaf types are easier to clean.

Spinach originates from the Middle East, most likely Persia or modern-day Iran. It was brought to Spain via the Moors somewhere between 800 AD and 1200 AD. Cultivation of spinach began in the USA around 1806.

Spinach is filled with iron, Vitamin A, Vitamin C and calcium and is excellent for cleansing, purifying and restoring balance to the intestines. Also, spinach contains oxalic acid which prevents the body from absorbing the iron and calcium in spinach. To increase the chances of your body's absorption of iron, spinach should be consumed with a Vitamin C-filled item, such as orange juice or tomatoes.

Yuma producers bring the vegetable to the culinary forefront by creating and supplying a fresh market product including baby spinach leaves and blends with other salad vegetables.

At harvest, the spinach seed crop is cut and dried in the field for 10 to 14 days. After the seed is threshed it is sent to a conditioning plant where it is cleaned to 99% purity. Seed companies
control the location of seed crop fields in order to prevent cross-pollination of different spinach lines. Isolation distances can range from one-quarter mile to 3 miles or more depending on the type of spinach (e.g., smooth leaf vs. savoy leaf types).

Eating and preparing spinach is simple and easy, since it tastes good raw or cooked. Spinach can be found fresh, frozen, or canned; it can be easily incorporated into many dishes. Its versatility makes it easy to serve raw in salads or sandwiches or as a complement to soups, meat, fish, or other vegetable dishes.

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