The History of the Flower Bulb Industry in Washington State

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Washington State has been the major producer of iris, narcissus, and tulip bulbs in the United States for many years and ranks only behind the Netherlands and Great Britain in the acreage of these bulbs in the world. Why has this state been so successful?

Several factors have contributed to this success. They include good soil, intelligent and creative farmers, scientific research assistance, and especially a very favorable climate. The cool, moist winters in western Washington encourage root growth which produces larger, better quality bulbs than those grown elsewhere in the United States while the warm, dry summers facilitate digging and proper curing. The cooler spring and summer weather in this area also helps to control certain diseases which cause severe losses in warmer climates.

The question is often asked as to how Washington bulbs can compete with the cheaper and more plentiful bulbs from overseas. The answer is quality. Washington bulbs produce flowers that are larger, have a deeper color, and are more uniform in blooming. They also bloom about 2 weeks earlier than do those produced in Holland and, therefore, command a premium price in the bulb and flower markets. The successful mechanization of many operations by Washington growers has helped to keep the cost of production reasonably competitive.

Bulbs for private gardens in Washington State were brought in by some of the earliest settlers, but the oldest available record of commercial bulb production refers to a planting in 1892 by George Gibbs on Orcas Island. Gibbs later moved to Bellingham in 1899 and his success with bulbs there apparently stimulated others in the vicinity to get into the business so that Whatcom was probably the leading bulb county in the state until about 1920.

In 1906 and 1907, the United States Department of Agriculture (USDA) sent a team of scientists around the country to look for suitable areas for research on bulb

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[1] The text of this article consists of the Summary chapter taken from Dr. Charles J. Gould's new book on bulb growing in Washington. Dr. Gould is a Plant Pathologist Emeritus, who spent his entire career (1941-1977) at Washington State University's Research and Extension Center in Puyallup, Washington. His research specialization was the cause and control of diseases of bulbs, turfgrass and other ornamental crops. In 1993, Dr. Gould's book entitled *History of Bulb Growing in Washington* was published. This 309 page book covers bulb growing during the last 100 years, the 900+ growers, the markets, the financial value, the places and dates, the horticultural practices, the equipment, the problems, the associations and companies, the state- and federal-supported research, and the spring flower bulb festivals. This book is available from Washington Watershed Publishing Company, 9792 Edmonds Way, Suite 178, Edmonds, WA 98020.

[2] Talk presented by Dr. Gary Chastagner, Research Plant Pathologist, Washington State University Research and Extension Center, Puyallup, WA.

growing. Gibbs and others had previously sent letters and samples of their bulbs to the Department and had cooperated with them in experiments so it was not surprising that the scientists chose Bellingham as a major test site in 1908, and established a Bulb Station there. The USDA had two major goals: to determine whether bulbs could be produced commercially in the United States and to raise bulbs for members of Congress to give away to their constituents, a political custom at the time.

Experiments began at the Station in 1908 and continued until 1935. Dr. David Griffiths became supervisor of the Bulb Station at Bellingham about 1917 and deserves much of the credit for its success. He was an excellent promoter for the fledgling bulb industry and much of the information in his bulletins is still valid today. If we consider Gibbs to be the "Commercial Father" of the Washington bulb industry, then Dr. Griffiths certainly rates the title of the "Scientific Father."

Washington's bulb industry grew slowly at first. Sales of cut flowers were probably the main source of income, with bulb sales being secondary. Among the earliest growers were Mrs. Mary Stewart on Samish Island (Skagit County) and Edwin Wines on Fox Island (Pierce County), both starting about 1908. George Lawler began raising narcissus at Fife (Pierce County) in 1910, initially for cut flower production, and, by 1920, was probably the largest bulb grower in the state. By that time, there were also several others growing bulbs in smaller plantings in several counties.

The greatest stimulus to American bulb production was the USDA announcement of a quarantine against the importation of narcissus and certain other bulbs, imposed in an effort to protect domestic bulbs from invasion by insect and nematode pests carried on imported bulbs. It was announced in 1922, but did not go into effect until 1926. During the interval, many American farmers in several states imported bulbs for planting and several Dutch firms sent representatives and bulbs in order to establish their own bulb farms in the United States.

The federal quarantine was modified in 1936 and revoked in 1938 but, by that time, the Washington State bulb industry was well-established. Some contraction occurred during the Depression years from 1932 to 1935 when many small growers went out of business. Markets were good during World War II but manpower shortages and higher costs affected production and profits.

The wartime shortage of labor and rising costs accelerated the trend toward mechanization in digging, cleaning, planting, and other operations. Mechanization proved to be very cost-effective. By hand, 40 man-days were required to dig an acre of iris. With machines, it took just one man-day. Mechanical planting of Iris went even faster, requiring only 0.2 of a man-day by machine as compared with 20 man-days per acre when done by hand. Because the demand for such mechanical equipment was small, however, none of the commercial farm equipment manufacturers were interested in producing it. Growers had to invent, build, and maintain their own machines.

After World War II, a heavy influx of Dutch bulbs at lower prices caused many Washington growers to reduce their acreages or to quit raising bulbs entirely. Iris growers, for example, plowed under 25% of their crop in the spring of 1953 because of surpluses and poor prices. Ironically, this was followed by a large increase in demand for them by Dutch bulb dealers in 1954 after an extremely severe freeze during the winter of 1953/54 damaged the iris crop in Holland. Overseas orders for

Washington Iris increased annually after that, reaching a peak of over 30 million bulbs in the late 1960s. Between 1966 and 1972, 199 million Washington iris were exported to England, Europe, and Canada. The demand tapered off, subsequently, for a number of reasons.

In general, the largest bulb acreage in Washington has usually been in narcissus, followed by bulbous iris, tulips, lily, gladiolus, and a few acres in hyacinth, crocus and other minor crops. Most of the gladiolus are now grown in eastern Washington while the other bulb types are raised in a 180-mile strip between Woodland and Mount Vernon in western Washington. Most of the lilies grown now are of the Oriental and Asiatic types but Washington once had a small and thriving Croft Easter lily industry. The center for Easter lily production is now located in the coastal areas of northwestern California and southwestern Oregon.

The total acreage of iris, narcissus, and tulip (INT) bulbs in Washington is estimated to have been about 5 acres in 1900 and perhaps 100 in 1920. It then climbed rapidly to 1796 acres in 1942. Since 1942, it has fluctuated between 1285 and 2355 acres. In 1989, for both bulb and flower production, there were 517 acres of iris, 1097 of narcissus, 608 of tulip, 77 of lily, 50 of gladiolus, and 6 of miscellaneous bulbs. This 2355 acres included the farm of the Washington Bulb Company in Skagit County which grew bulbs on 1310 acres and is the largest producer of iris, tulip and narcissus in the United States. The present bulb acreage in Washington State is one of the largest on record.

More than 900 Washington farmers have grown bulbs since 1892. The list includes 520 INT growers, 357 lily growers, and 134 gladiolus growers. Undoubtedly, there are many more growers of whom no record has been found so far. The total number of growers has declined since the 1920s. Although there are no data on the number of iris and tulip growers in 1929, there were 162 narcissus growers that year but only 15 in 1989. There were 80 INT growers in 1947, but only 17 in 1991. Three others grew bulbs in 1991 but only for cut flowers.

As the number of growers became smaller, average farm size became larger. In 1929, the average planting was 3 acres for narcissus, the bulb type which accounted for 86% of the total bulb acreage that year. In 1947, the average for all three major bulb types was 22 acres per farm. This grew to 69 acres in 1970 and to 117 acres in 1990.

The number of INT bulbs sold rose from 14.1 million in 1930 to 80.5 million in 1988. The latter figure includes 33.4 million iris bulbs, 24.6 million narcissus bulbs, and 22.5 million tulip bulbs. In addition, there were probably another 10 million INT bulbs used solely for flower production. That number, plus an estimated 12 million of the gladiolus, lily, and miscellaneous bulbs and corms produced, would have brought the grand total of all bulbs sold in Washington to 100 million in 1988.

The largest market for Washington narcissus originally was for greenhouse forcing in the eastern United States. Now, most narcissus bulbs are used by local growers for field-cut flower production and for their own forcing, although a few are sold to the dry sale trade. Bulbous iris are still in heavy demand for greenhouse forcing elsewhere in the United States and for sale to California producers for field-cut flower production. Most Washington tulip bulbs are now used for local forcing or field-cut flower production with only a few going into dry sales.

The bulb varieties upon which the industry was founded are not often seen now in the festivals and display gardens. The excellent 'King Alfred' narcissus reigned for over 40 years, but has been replaced by larger new yellow trumpet cultivars, such as 'Dutch Master' and 'Unsurpassable'. 'Wedgwood' was the most popular blue Iris from 1930 to about 1970, but has yielded its throne to one of its sports, 'Ideal'.

The sale of field-cut flowers has become big business. Official data is not available but the total number of flowers sold in 1989 was estimated to have been about 70 million. This included 50 million narcissus, 5-million iris and 15-million tulip bulbs.

Sales of forced and field-cut flowers have become so important that they now represent 70% to 90% of the total gross income of many growers, a situation almost completely the reverse of that in 1940 when income from bulb sales was far more important. Estimated gross income for INT growers was over $5 million for bulbs and over $6 million for field-cut flowers in 1989. This $11 million total does not include the income received from flowers forced in the growers' own greenhouses.

Bulb growers, just like other farmers, have problems, some natural and some man-made. Natural problems include drought, freezing, flooding, insects, and diseases while man-made problems include warehouse fires, bulb surpluses, labor shortages and the urbanization.

Natural problems, such as periodic severe freezes, caused bulb growing to die out in Whatcom County over 40 years ago. The most destructive freeze of all occurred during the winter of 1978/79 and affected all bulb types in all areas of western Washington.

Another natural problem, flooding, by the Columbia and Lewis Rivers, destroyed over 265 acres of bulbs at Woodland in 1948. This figure, however, has been dwarfed by the losses from a combination of flooding, waterlogging and freezing weather in the winter of 1990/91 when many tulip, iris, and some narcissus crops were destroyed in both Pierce and Skagit Counties.

Man-made problems include fires which put two growers out of the bulb business and caused serious losses at three other farms. Bulb surpluses have been an intermittent problem but were especially severe in the late 1940s and early 1950s when large imports from overseas coincided with good crops in Washington State. This surplus situation occurred at a time of changing markets and the combination was largely responsible for the decline of INT acreage from 1800 acres in 1949 to a low of 1285 acres in 1959, before it began to climb again. The latest man-made problem is the increasing shortage of suitable land, resulting from uncontrolled industrial and residential development. It has already crowded out most of the bulb industry in Pierce County and threatens to do the same in Skagit County where 70% of the state's bulb acreage was located in 1989.

Several bulb cooperatives have been organized in Washington and two are still active. Growers in the Puyallup Valley organized the Puget Sound Bulb Exchange in 1926 to sell, pack and ship its members' bulbs. The other organization is the Puyallup Valley Flower Cooperative which was established in 1956 to sell and ship field-cut flowers.

In order to facilitate the exchange of cultural information, bulb growers organized the Northwest Bulb Growers Association in 1924. Later, they developed the Washington State Bulb Commission in 1956 to provide additional funds for

research and advertising. Both of these groups have cooperated, since 1948, with scientists from Washington State University at Puyallup and Mount Vernon in sponsoring annual Bulb Grower Conferences which keep growers up to date on new developments.

Bulb production has been aided by the research of many state and federal government scientists. The first research got under way in 1908 at the USDA Bulb Station at Bellingham where the major emphasis was on cultural techniques. Later, other USDA and WSU scientists at various locations worked on the control of diseases, insects, nematodes, and weeds, as well as on improved methods for handling and forcing bulbs.

When beauty came by the acre, it was only natural for bulb festivals to spring up. The first large one was an annual Tulip Festival held at Bellingham from 1920 to 1930, followed by the beginning of the Puyallup Valley Daffodil Festival in 1926. The LaConner Civic Garden Club in Skagit County put on a Tulip Show from 1946 until about 1971. In 1970, Oak Harbor on Whidbey Island started its Holland Happenings which originally included a Tulip Show. Next to develop was the Skagit Valley Tulip Festival which was organized by the Mount Vernon Chamber of Commerce in 1984. The most recent one is a Tulip Festival held in Mossyrock during the month of April every year.

But times change. Bulbs were once the major source of income for growers; now flowers are. The center of bulb production shifted from Whatcom County south to Pierce County and now has moved back north to Skagit County. As mentioned before, the most critical issue facing bulb growers today is not climate but land. There may not be enough bulbs left by the year 2000 to supply flowers for even the local festivals unless some method is found to preserve it. Meanwhile, the 2000 acres of blooms which are still available in western Washington should be fully appreciated and enjoyed now.