

# Flower Growing & Marketing



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Israel and Its Floral Industry (Part I)

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## Introduction

This report is based on a 3-month tour of Israel, 12 February to 10 May, 1979, the first portion of a 6-month sabbatical study leave. Many horticulturists have visited Israel in the past two years, a reversal from the numerous Israelis visiting the U.S. over the past 15 years. The "shoe is now on the other foot"?

The Israelis have utilized our information very well (perhaps better than we ourselves) and in many respects are now moving ahead of us in floricultural technology. The Israelis are producing excellent quality cut flowers and cut foliage for export to meet the standards of European markets.

Each visitor to Israel has different experiences. What one person sees and hears is not always representative of the total situation. Statistics quoted by individuals don't always agree and we all interpret socio-political and business situations in different ways. I lived on 4 kibbutzim and 1 moshav in a concentrated flower production area. I harvested, graded, bunched and packed cut roses and spray carnations for export. I also spent long hours with 30 to 40 extension agents and researchers visiting growing operations and packing houses.

Herewith is my assessment of Israel and its floral industry as of the year 1978-1979.

## Israel, the Country and Its People

Israel is a small country containing so many historic sites, such varying topography and interesting agriculture that a visitor is amazed and overcome with the "vastness." Israel's 8000 square mile area is just over twice the size of San Diego County, California. During the 1967 War, Israel expanded its boundaries to include about 32,000 square miles. Much of this occupied area has been or will be returned to Egypt during the next 3 years. Some kind of agreements are intended for governing the Gaza strip, the West Bank, and the Golan Heights.

In the late 1800's the Zionist Movement motivated many Jews, who were scattered (the diaspora) throughout the world for 2000 years, to return to the native land of their ancestors. The population of Israel is now about 3.4 million of which 0.5 million are Arab residents.

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Israel has few natural resources except for favorable winter climate. There is essentially no oil, coal, timber or valuable minerals. Much of the land in the hill areas of Judea and Galilee is rough and rocky, barely suitable for sheep or goat grazing. Valley soils are suitable for cotton, grain, fruit trees, and forage crops. The great Yisrael Valley was a malaria swamp until drained and made productive by modern Israel. The Sharon Valley, a coastal plain in central Israel, is the primary citrus area. Water is a limited resource, most if it originating in the far north at Mt. Hermon and distributed in a national system from the Kinneret (Lake Galilee). Ninety-five percent of all available water is utilized including reuse of drainage water in coastal areas. Normal annual rainfall in the Western Galilee is about 800 mm ranging to virtually none in southern deserts. Jerusalem is near the center of Israel at 800 m elevation and a latitude of 32°, which is the same as San Diego.

Israel's main export crop is citrus (Jaffa oranges). Bananas are produced for local consumption and are located along the northern coast, near Lake Galilee and in the Jordan Valley. Plantings of avocados are being expanded for an export crop. Apples and other deciduous fruits and nuts are produced in the hill areas. Cotton is also an export crop.

Many of the rough stony areas have been reforested since 1948 with pines and other conifers. The "green line" of natural or cultivated plant growth is very obvious at all the country's borders when compared to overgrazed and undeveloped land in Lebanon, Jordan, Syria and the Sinai.

#### Political-Economic Objectives

One cannot understand modern Israel without a concept of its precarious situation and the long history of Jewish culture. The Jews maintain it is their "promised land" going back to God's promise to the patriarch, Abraham.

Modern Israelis are energetic people, determined that Israel will survive and thrive. The people have considerable technological ability, plus they seek out, and utilize technology from throughout the world. The Israeli government, a type of democracy, strongly influences daily life. Accommodating immigrants, maintaining national security (surrounded by arch enemies), and developing self-sufficiency with few resources, are a few of the enormous challenges. The inflation rate for the last few years has been 40 to 50 percent and will run 80 to 100 percent during 1979.

Bureaucracy is most evident, plus strong labor unions. There are constant labor strikes with disruption in services. With this unrest plus so many citizens serving in the military, productivity is a problem. The most efficient sectors of the economy are very likely to be the kibbutzim and the moshavim, which make up a large part of the agricultural sector, as well as much manufacturing and processing of foods.

There are about 260 kibbutzim in Israel, representing about 3 percent of the population. The kibbutzim are communal cooperatives providing all life needs for their members. The older kibbutzim were established 30 to 40 years ago (the oldest is 70 years) by groups of Jews, mostly professionals escaping persecution in other countries. For non-farmers, establishing new settlements in a barren land was

difficult. Huge rocks had to be moved to grow crops on shallow soils. Water was limited and there was continuous threat of attacks from terrorists. Nevertheless, today many of the kibbutzim are relatively wealthy, deriving half of their income from agriculture and half from specialty manufacturing.

There are at least 500 moshavim in Israel. These settlements differ from kibbutzim in that each member has a small parcel of land for a home and enterprise, plus an interest in enterprises of the entire community. Cooperation exists in planning, marketing and purchase of supplies. There are also communal moshavim which have characteristics of both moshavim and kibbutzim.

Groups of kibbutzim, and also moshavim, often work together in larger organizations to finance and operate packing houses, processing plants or other general enterprises.

There are also "new city" settlements in Israel, established by government planners to settle new immigrants or relocate people. Industries are also planned to support these new settlements.

The government makes decisions to establish new settlements in order to (1) occupy an area to prevent takeover by squatters, (2) to accommodate more people, or (3) to increase security and productivity. The new areas for settlements often pose very difficult problems, particularly in the barren rocky hills of central and upper Galilee or in the southern deserts. Small livestock operations (particularly poultry) or fruit and nut trees have been about the only enterprises to provide income in many of the settlements. Poultry has been so heavily subsidized that it is over-produced. Now, greenhouse flowers and potted plants are being "pushed" for these difficult areas because of a higher potential income per unit. From a private investment standpoint, most of these greenhouse enterprises don't make sense. Soil or volcanic scoria ("tuff") has to be imported; steel and fiberglass is needed for structures to withstand wind and hail, and fuel is required to heat roses and tropical stock plants. These enterprises could more logically be put in warmer areas with sandy soils. The establishment of settlements "at any cost" is difficult to understand for we who are accustomed to free enterprise.

(Detailed discussion of the Israeli floriculture industry will follow in Part II in the February issue of Flower and Nursery Report. Additional reports will continue to include Europe.)

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Effect of Soil Temperature, Photoperiod on Vegetative and Reproductive Growth of *Alstroemeria* 'Regina'

In a University of Minnesota experiment, *Alstroemeria* 'Regina' plants produced more vegetative shoots when the soil temperature alternated between 15°C for 40 days and 21°C for 20 days than those grown at a constant soil temperature of 15°C. However, a higher percentage of the shoots flowered from plants grown at the constant 15°C temperature.

Short days (8 hours light) inhibited flowering irrespective of soil temperature. Plants given a long-day treatment by exposing them to a night break with incandescent light flowered 6 weeks earlier than plants grown under normal day photoperiods during winter and spring and produced 30 percent more flower stems.

Treatment favoring flower development produced shorter flowering stems with fewer leaves. Maximum flower production resulted from plants grown at a constant 15°C soil temperature and irradiated with incandescent lights as a night interruption.