

ISRAEL'S HIGH TECHNOLOGY FARMING

BY ABRAHAM AAMIDOR

When an ancient pharaoh and his Hebrew advisor, Joseph, prepared for the biblically-recorded seven lean years in Egypt, perhaps they buried their wheat and barley deep under the desert sand. Good temperature control, very dry air, and relatively few pests -- it could have been done.

A similar technique was successfully tried more recently by scientists from Israel's Volcani Agricultural Research Organization in Bet Dagan. A bumper crop of imported American grain was buried underground in plastic sheeting. When it was dug up two years later, the grain was well preserved.

That is a representative picture of Israel's agricultural development -- original and unconventional ideas, strong cooperation between scientists and growers, and a clear national commitment to success. Much of this success is due to the work of the Jewish National Fund, whose massive land reclamation and soil preparation programs have transformed formerly barren stretches into arable terrain.

Due to enormous technological strides, Israel's agriculture is recognized throughout the world as one of the most advanced. The country is not only 90% self-sufficient, but is a major food exporter as well.

The record shows that Israel may well lead the way toward the alleviation of world hunger. Local dairy herds yield an average of 7300 liters of milk per cow annually, the highest reported in the world; combined agricultural yield has grown over 5% per annum since the founding of the state; and agricultural exports topped \$800 million in 1981.

WATER: TOO MUCH AND TOO LITTLE.

The successes are even more extraordinary in view of the formidable problems which confronted Israel's pioneers during the early part of this century. In a country plagued by a minuscule rainfall -- there is virtually no rain between April and November -- and few natural water sources, one of the most challenging problems during those early days was, oddly enough, an overabundance of water. In the valleys and coastal areas of the north, malarial swamps and fetid marshes prevented any serious agricultural undertaking. The ambitious drainage programs of the Jewish National Fund during the '30s and '40s transformed these stagnant wastes into fertile farmland.

Later, in the 1950s, it was the Jewish National Fund which again created soil for agriculture through the use of scientific technology. The Huleh Lake, north of the Sea of Galilee, was a stagnating body of water. JNF workers freed the southern outlet of the lake from the hardened lava which had been blocking the natural flow of water. The resultant drainage turned the region into 15,000 acres of excellent cropland.

Moreover, large quantities of water were made available for irrigation in other parts of the country, thus providing one early solution to

Israel's overriding agricultural headache -- lack of water.

Advances in modern irrigation methods continued through the years. One simple but ingenious solution for more efficient utilization of the country's limited water supply was the development of the drip irrigation system, which in a few years quadrupled yields. In this system, plastic hoses are run alongside the crops, and, via holes spaced along the hoses, measured amounts of water are dripped directly onto the root systems, with little or no water loss.

If water has been in short supply, so has land. There are about 400,000 hectares of cultivated land in Israel (each hectare equals ten dunams or 2.5 acres), about half of which is irrigated. One new land-saving technique is "meadow-orchard" peach farming, which looks like a marriage of Japanese bonsai miniature gardening and assembly line production methods, and which enables farmers to plant as many as one thousand peach trees on a dunam of land instead of the usual 40 or 50.

Of course, one doesn't seem to need land at all to do some farming these days. At one experimental station near the Dead Sea, tomatoes are grown by a "hydroponic" system that uses no soil at all. The plants are suspended in a jet stream of water, which contains all necessary nutrients.

What next? How about "low plastic tunnel" agriculture? Plastic sheeting is stretched on top of shallow furrows in the ground, holes are punched in the plastic, and groups of seeds are injected through the holes. The plastic cover protects the sprouts and increases the temperature, stimulating growth. This way, the crops can be brought to market in Europe three weeks earlier than usual, and can get the best prices.

Agriculture, no less than war, requires a basic strategy. In Israel, the strategy is to maximize water and land utilization, minimize labor, and protect crops from pests, disease, and decay. Israel's advances in the war on outdated farming methods, in conjunction with the Jewish National Fund's reclamation activities -- which "create" arable soil from desert sand and rock-strewn fields -- have created a climate in which agricultural progress is thriving. And as long as creative problem-solving, close cooperation between scientist and farmer, and plain old-fashioned hard work prevail, local agriculture will continue its leading role in Israel's economy.

CAMP DAVID ACCORDS

JERUSALEM (WNS) -- Cabinet Secretary Dan Meridor announced here that Israel will launch a new peace offensive for the "establishment of a comprehensive peace in the Middle East in accordance with Camp David."



They forced the Jews to live behind walls, apart from their old friends and neighbors, and closed the gates so that the Jews could not go in or out.

Art work from PROMISE OF A NEW SPRING: *The Holocaust and Renewal*, by Gerda Weissmann Klein, illustrated by Vincent Tartaro, Rossel Books, P.O. Box 87, Chappaqua, N.Y. 10514

WASHINGTON (WNS) -- Former President Jimmy Carter is seeking to involve himself in the Middle East peace process.

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