



Commercial Agriculture - Israel



Israeli Agrotechnologies

- ✓ Greenhouses
- ✓ Dairy farming
- ✓ Poultry farming
- ✓ Aquaculture
- ✓ Water and irrigation
- ✓ Seeds
- ✓ Mechanization
- ✓ Fertilizers and pesticides
- ✓ Turnkey projects, consultancy and know-how



Introduction

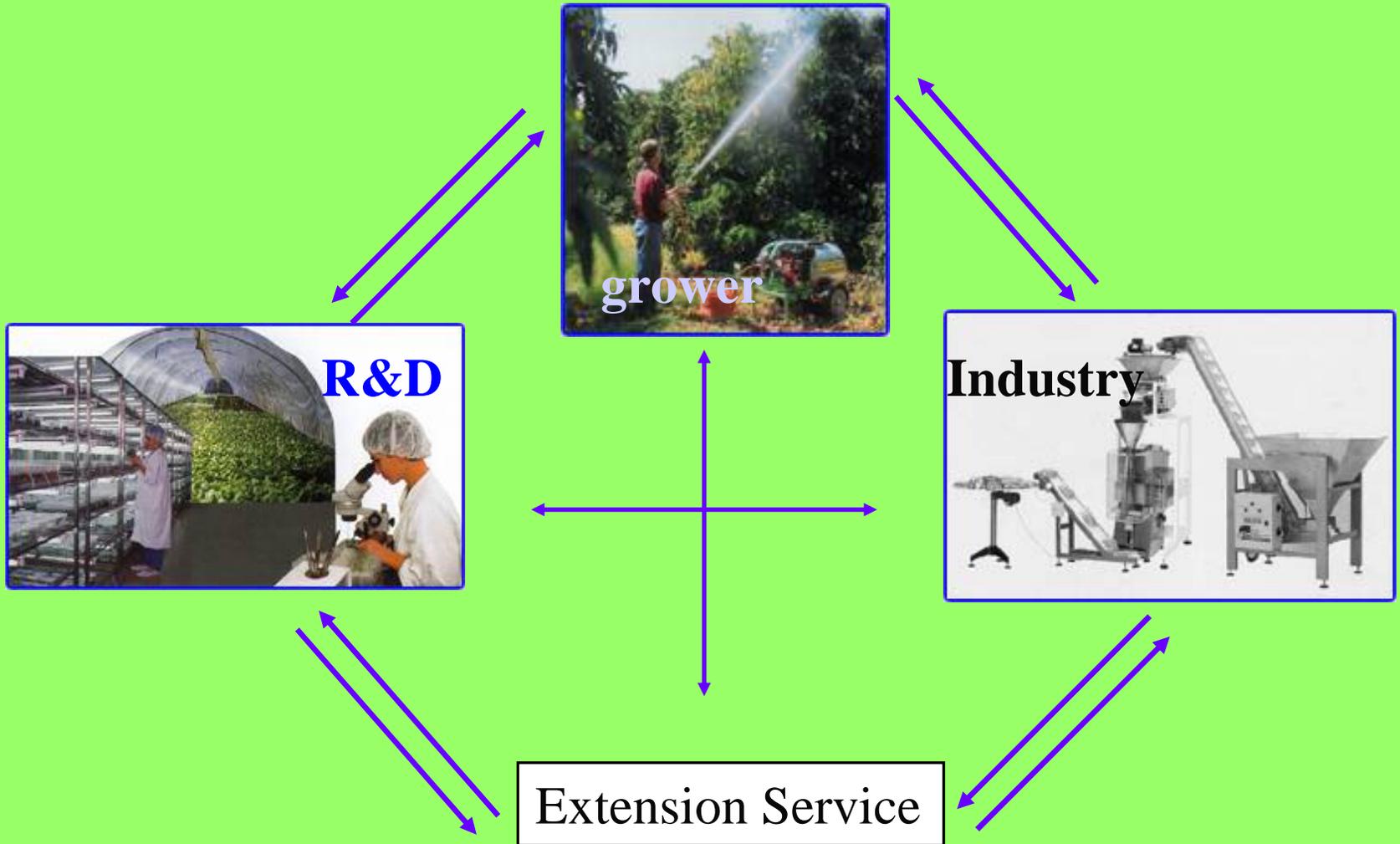
Israel's agricultural sector is characterized by an intensive system of production stemming from the need to overcome water scarcity. Sustained growth in agricultural production is due to the close cooperation between researchers, extensionists, farmers and agro-industries. The result is modern agriculture in a country in which more than half of the area is desert.



ISRAELI AGRICULTURE (2003)

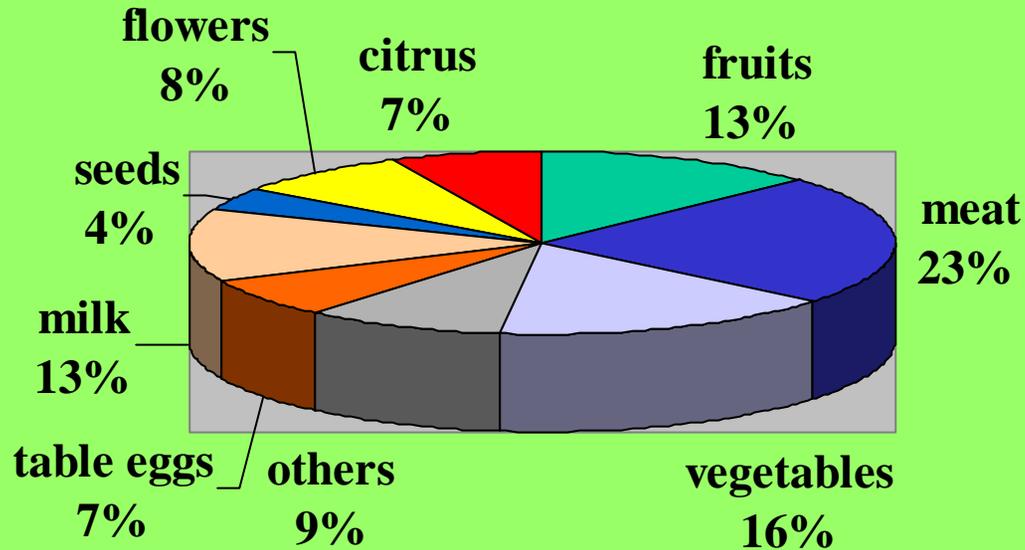
- FARMERS 20,000
- ARABLE LAND 420,000 Ha
- UNDER IRRIGATION 220,000 Ha
- TOTAL WATER 1.9 million cu.m
- FOR AGRIC. .8 million cu.m
- AGR GDP \$ 3 billion
- AGRI. EXPORT \$1.2 billion
- EMPLOYMENT 60,000
- POPULATION DENSITY 280/ KM2
- TOTAL GDP \$85 billion

Cooperation in Agriculture



AGRICULTURAL PRODUCTION

TOTAL \$3 billion (fresh & processed)



Export of Agricultural Inputs

The Israeli export of agricultural inputs in 2003

(\$ million)

Irrigation technology	89
Plasticulture	38
Veterinary products & feed additives	43
Livestock and poultry	13
Consultancy and know-how	12
Mechanization	56
Seeds	61
Fertilizers	649
Chemicals	353

Greenhouses

Lack of good soil and water led Israel to develop greenhouse technologies that are particularly useful for high value crops. Greenhouse systems, include specialized plastic films, heating, and ventilation systems. These enable Israeli farmers to grow more than three million roses per hectare per season, and an average of 300 tons of tomatoes per hectare per season, four times the yields in open fields.



Dairy

Israel's dairy industry employs advanced technologies that have revolutionized this industry. Average milk production has increased two and a half times since the 1950's – from 3900 liters/cow annually to an average close to 11,000 liters/cow.

Israel's dairy exports include frozen semen, embryos for transplant, advanced milking and computerized feeding systems, consultancy, and joint international project development.



Poultry farming

Israel has developed innovations that are contributing to improved production and greater efficiency.

Breeding- Breeds developed in Israel are disease resistant, adaptable to climate extremes, have rapid growth rate, high egg production and low-fat meat.

Equipment- automatic egg collector, poultry drinking systems and durable plastic flooring that contribute to hygienic conditions in poultry houses.

Control systems- in order to maintain optimal sophisticated climate control systems maintain desired levels of humidity, heat, lighting, ventilation and cooling 24 hours a day.



Aquaculture

The country's semi-arid climate and water scarcity required the development of an intensive form of aquaculture.

Fish farming is carried out in the open sea in floating cages, and in a man-made reservoirs and ponds.

Due to the lack of fresh water, fish farmers are using closed water systems for intensive farming.

A wide range of ornamental fish and marine plants are bred, including coldwater fish, tropical fish and water lilies. The products are exported overseas, especially to Europe.



Irrigation

Israel is the world's most advanced user of irrigation, with half of all agricultural land under irrigation.

- The irrigation industry in Israel has been a pioneer in developing innovative technologies and accessories like drip irrigation, automatic valves and controllers, media and automatic filtration, low discharge sprayers and mini-sprinklers, compensated drippers and sprinklers.
- The computer – controlled drip irrigation saves huge quantities of water and enables delivery of fertilizers with the irrigation (fertigation).
- The innovative irrigation industry has a worldwide reputation and more than 80% of its production is exported.



Seeds

Israeli seeds and seedlings are in high demand. Disease resistant varieties with good storage quality and suitable for a variety of climatic conditions are under development at Israel's research institute and at private companies.

Some 40% of the tomato greenhouses in Europe utilize seeds of a tomato hybrid with long shelf life developed and produced in Israel.

Other successful developments are: seedless watermelon, resistant squash, high-yield cucumbers, saucer-shaped yellow zucchini, and hybrid cotton varieties with longer and stronger fibers, high yield, water resistant and naturally colored.



Machinery

Israel manufactures and exports a variety of specialized agricultural equipment, including:

- A mobile celery packing house
- Machinery for digging silage and mixing the feed uniformly
- Poultry equipment like drinkers, automatic egg collectors, climate control systems and scales (weighing)
- An air- blast sprayer for use in citrus growing and vineyards which provides an efficient spray cover
- Flower bulb transplanters
- Machinery for packing houses



Fertilizers

Israel's southern region, and in particular the dead sea area, is rich in mines that provide: potassium, phosphorus and magnesium for the agricultural sector. Some of these resources are exported directly as raw materials, while others undergo local processing and compounding to enhance their utility, effectiveness and their environmental safety.

One of the remarkable developments is the **application of fertilizers through drip irrigation buried in the ground** in order to ensure that less mobile elements, such as phosphorous, will reach the roots directly.

Other innovation is the **controlled release fertilizers**. These are coated in polymers to ensure slow, prolonged release and delivery via diffusion.



Plant protection

- Israeli companies manufacture and export pesticides and herbicides for the control of insects, fungi and weeds.
- As part of the growing awareness regarding environmental protection, biological materials which are non-pathogenic to both plants and humans have been developed for treating diseases in plants. These biological agents are effective in treating diseases caused by pests, fungi and viruses in a wide range of crops.
- In addition, a defoliant for cotton and herbicides for early and specific treatment of weeds have been developed .
- Environmental concerns have also stimulated the development of methods to disinfect the soil, using formaline as a substitute for methyl bromide.



Turnkey projects, consultancy and know-how

Israeli agrotechnology companies are joining forces and supplying turnkey projects for both crop and livestock development programs.

The firms provide integrated solutions that embrace soil, water, additives, plant and livestock varieties, equipment and structures. The results are improved yields, lower costs, a win-win situation in a resource-stressed world.

