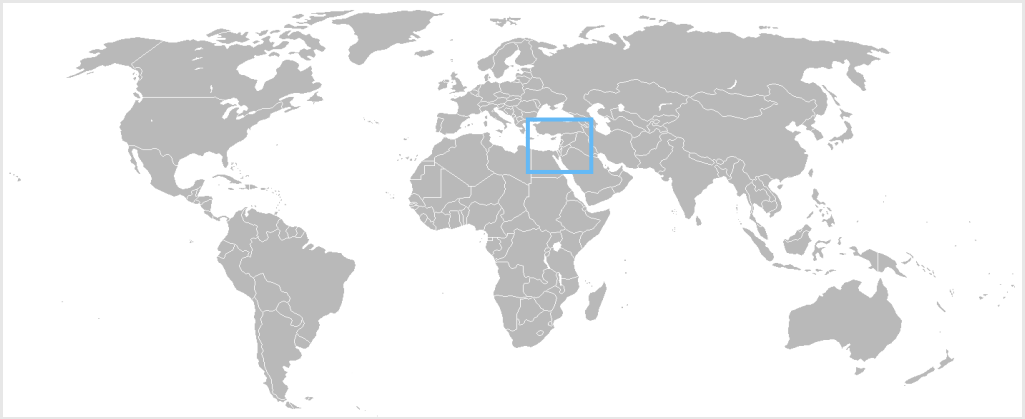
Israel - Country ID

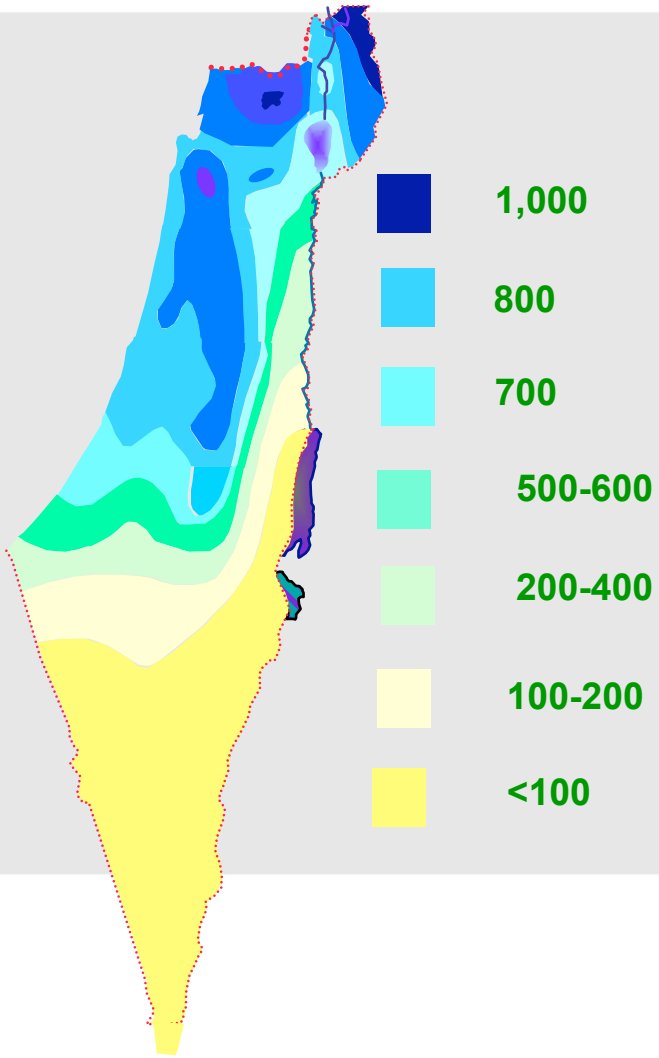


Annual Average (mm)

North: 720

Mountain: 550

South: 30

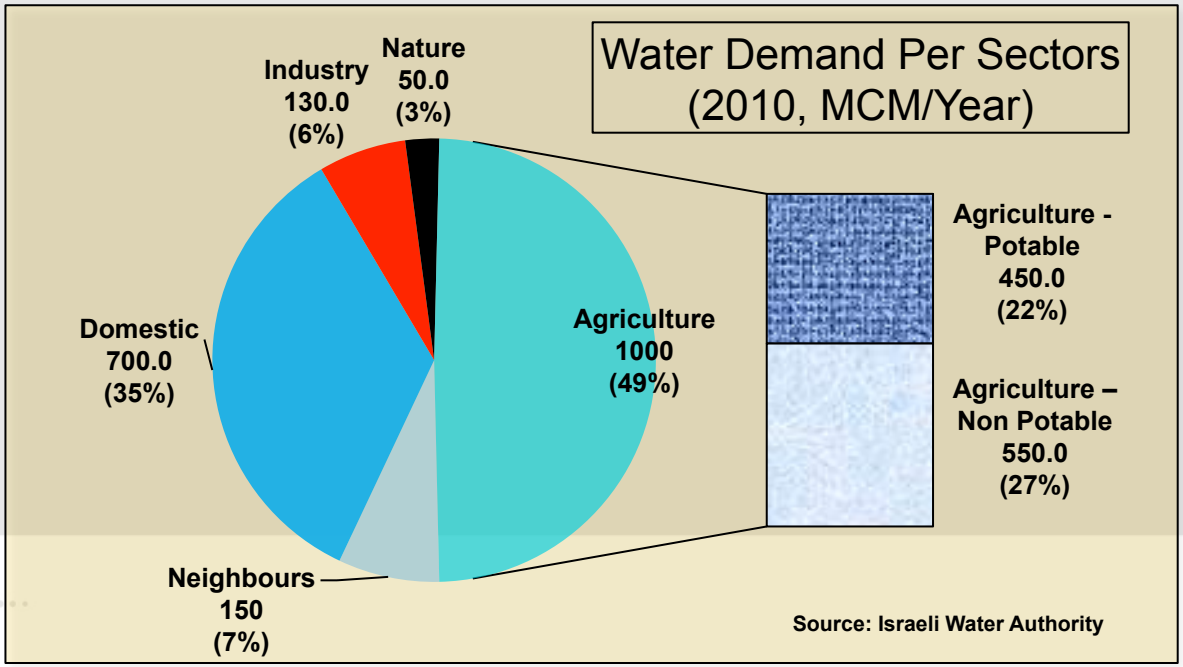


Israel's Water Shortage

- Natural water refill: 1170 MCM (per year)
- Water consumption: 2030 MCM (per year)

- Annual Shortage of over ~45%

- Daily Domestic Consumption Per Capita ~250 Liters



Waste Water Treatment and Reclamation

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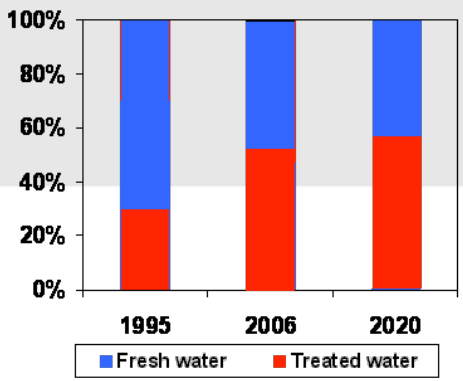
Annual sewage average:

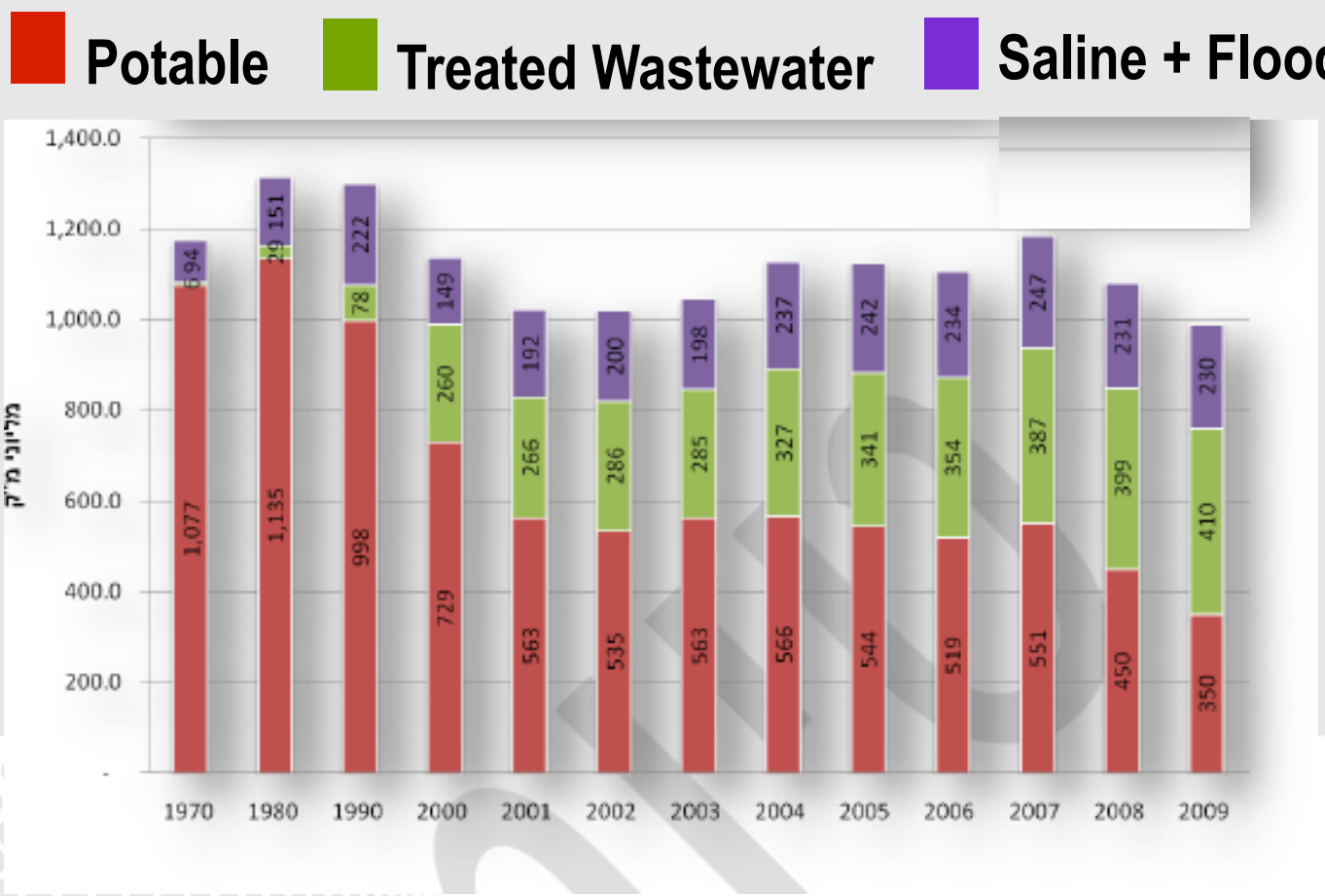
- 520 mcm per year
- 475 mcm is collected and treated (91%)
- 360 mcm is reclaimed for irrigation (75%)

The aim is to reach up to 500 mcm by 2015

Israel has devoted numerous resources to the development of waste water treatment and reclamation, applying innovative secondary and tertiary treatment



Agricultural Consumption Quality Basis



Treated Wastewater: A renewable irrigation water source

- Quality
  - Organics, Nutrients and Pathogens
  - The salts and heavy metals

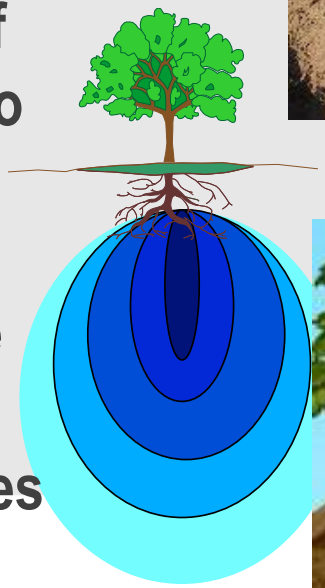
Technologies

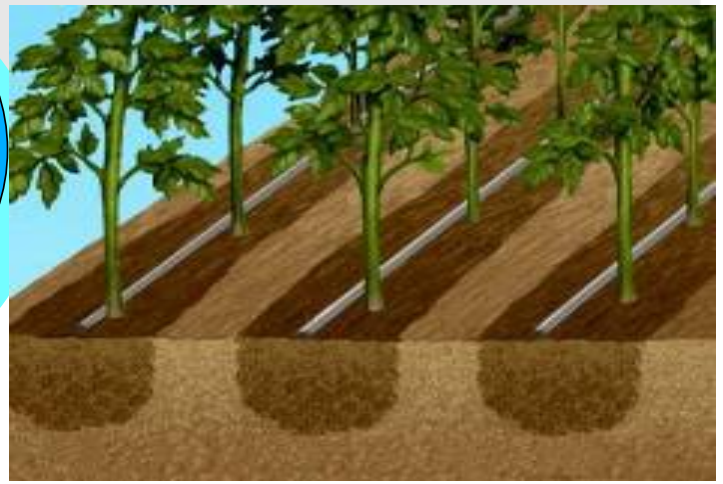
- Advanced drip irrigation systems
- Advanced filters
- Monitoring devices

Drip Irrigation

IRRIGATE THE PLANT, NOT THE SOIL

- Optimizes moisture and aeration conditions
- Ensures precise quantities of water and nutrients directly to root zone
- Reduces release of gases to atmosphere due to imprecise fertilizer usage
- Increases yields and enhances productivity per unit of soil and water





CRUCIAL INFLUENCE OF DRIP IRRIGATION ON BIO-FUEL PRODUCTION COSTS

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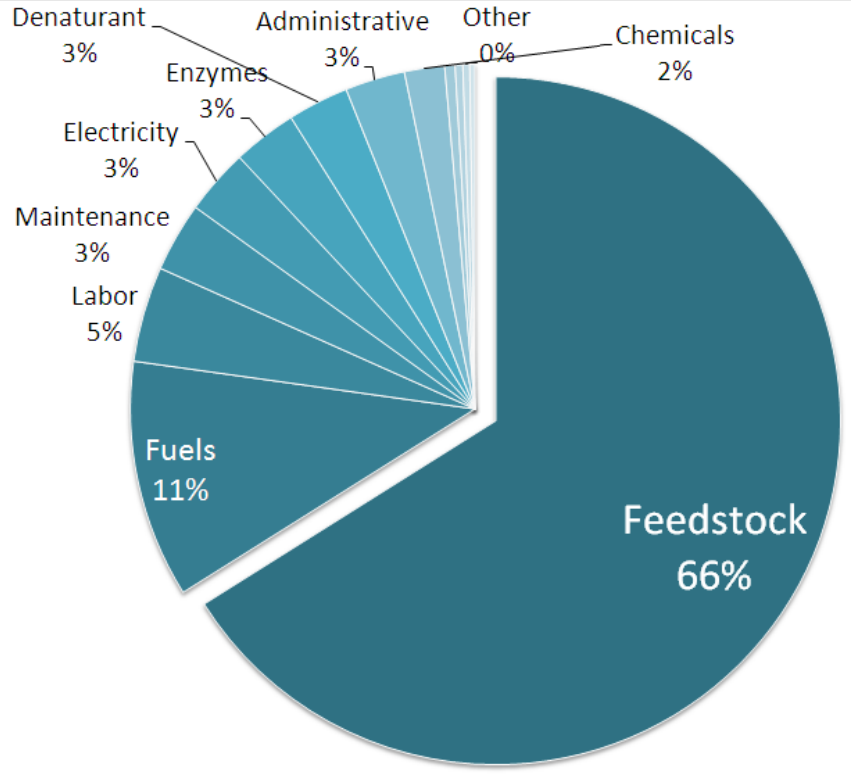
ETHANOL PRODUCTION COSTS



Irrigation Method	Feedstock Yield t/ha	Ethanol Outputs 000' kg/ha
Drip Irrigation	**160**	**126**
Center Pivot	**120**	**94**
Sprinklers	**70**	**56**
Furrow	**55**	**43**

Source: Ethanol production costs - USDA 2009

High yields increase revenues and reduce role of ethanol production costs.

Biofuels Crops in Israel

- Main crops: Castor Bean, Jatropha
- Israeli companies also active in projects of:

Sugar, Corn, Jojova, Camelina

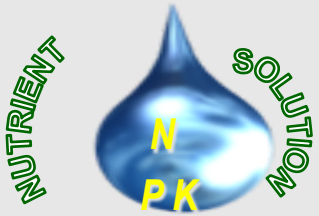
Fertigation

Fert ilization + Irr **igation**

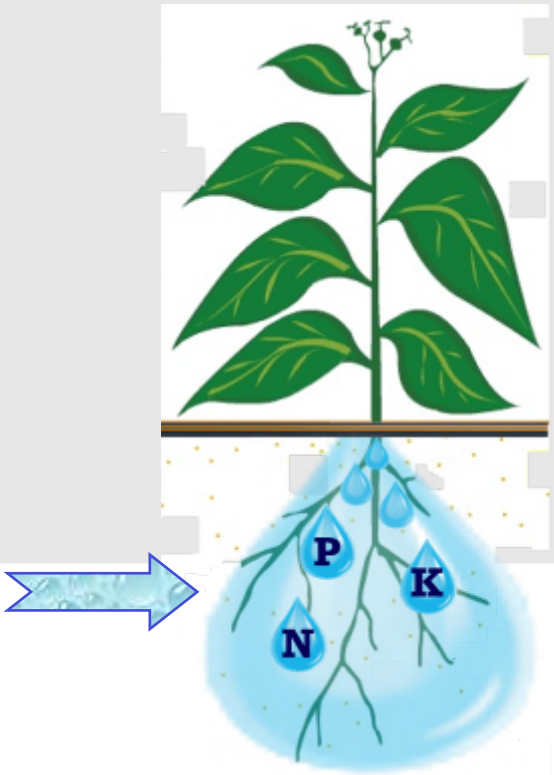
F e r t i g a t i o n

Fertigation Advantages

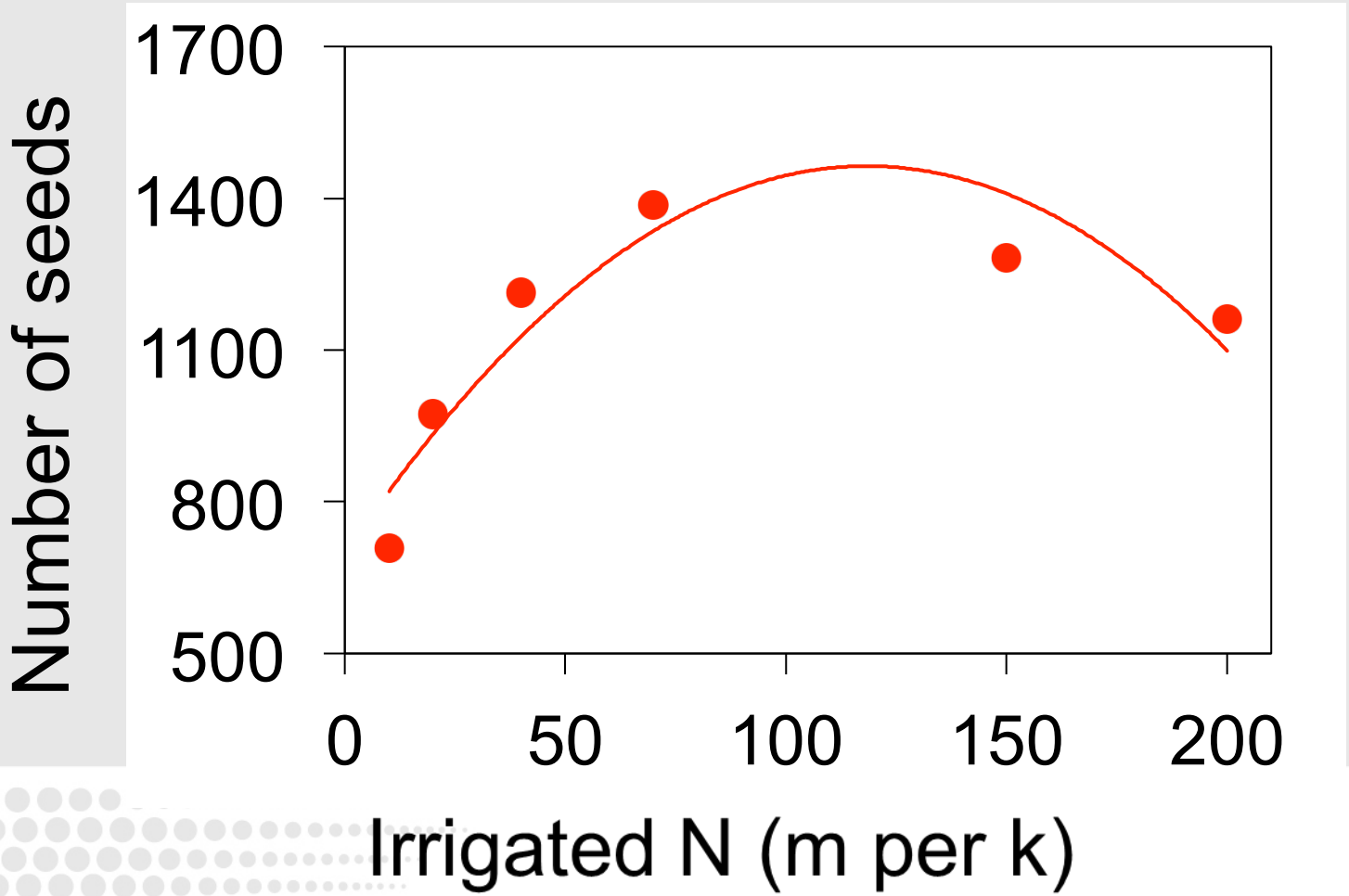
Fertigation is the application of plant nutrients through the irrigation system



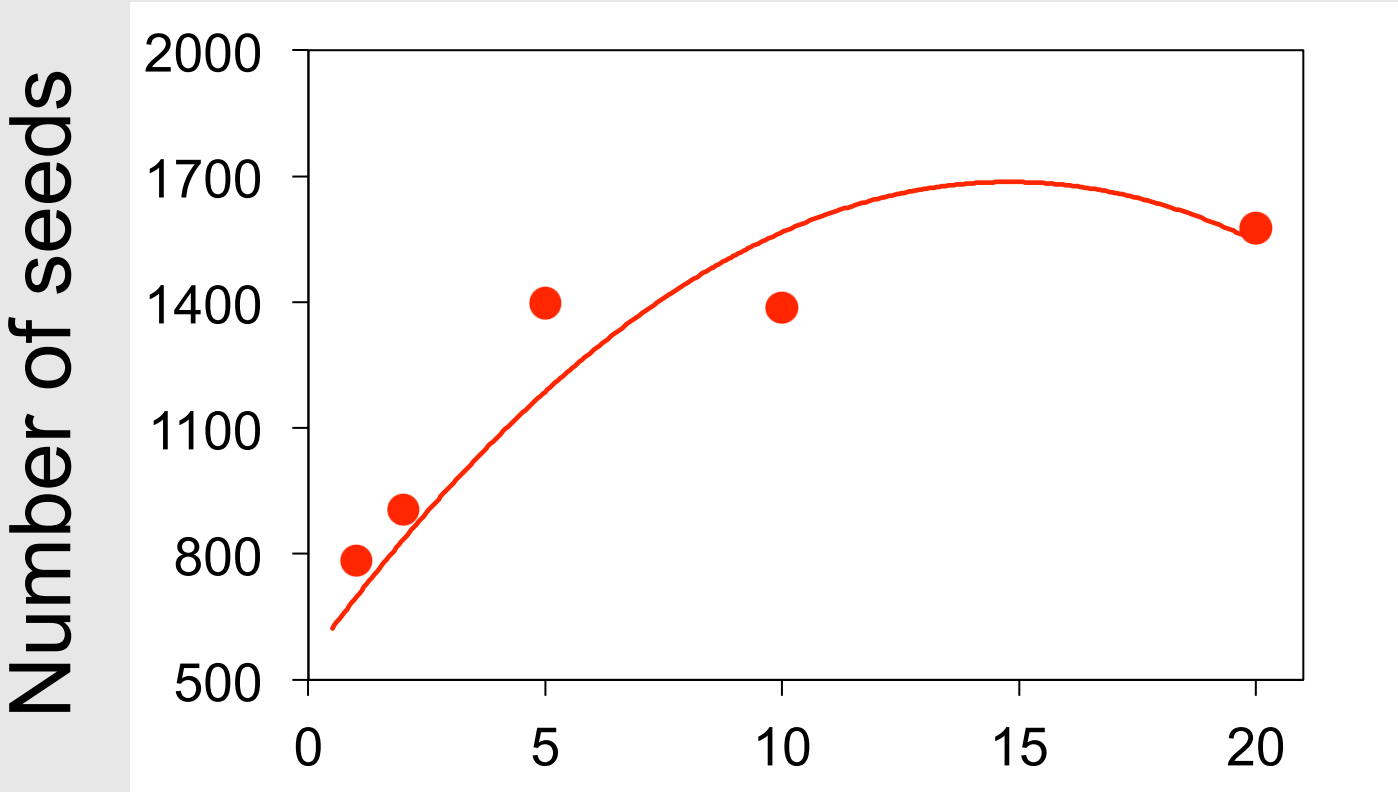
The plant roots receive
water + nutrients
at the same **time** and **location**



Fertigation in Castor Bean

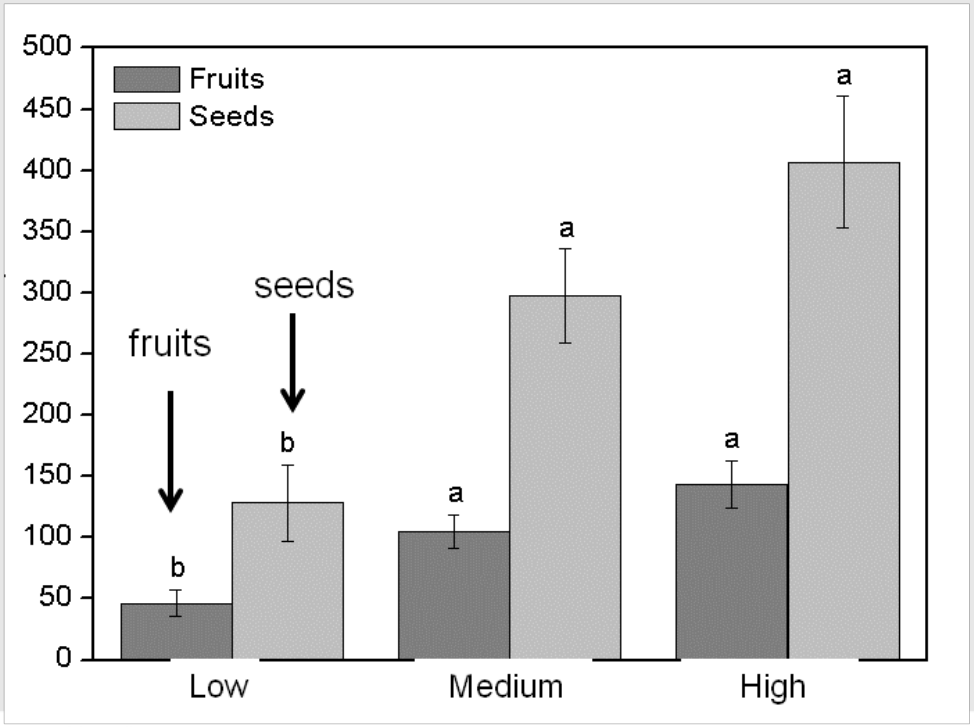


Fertigation in Castor Bean



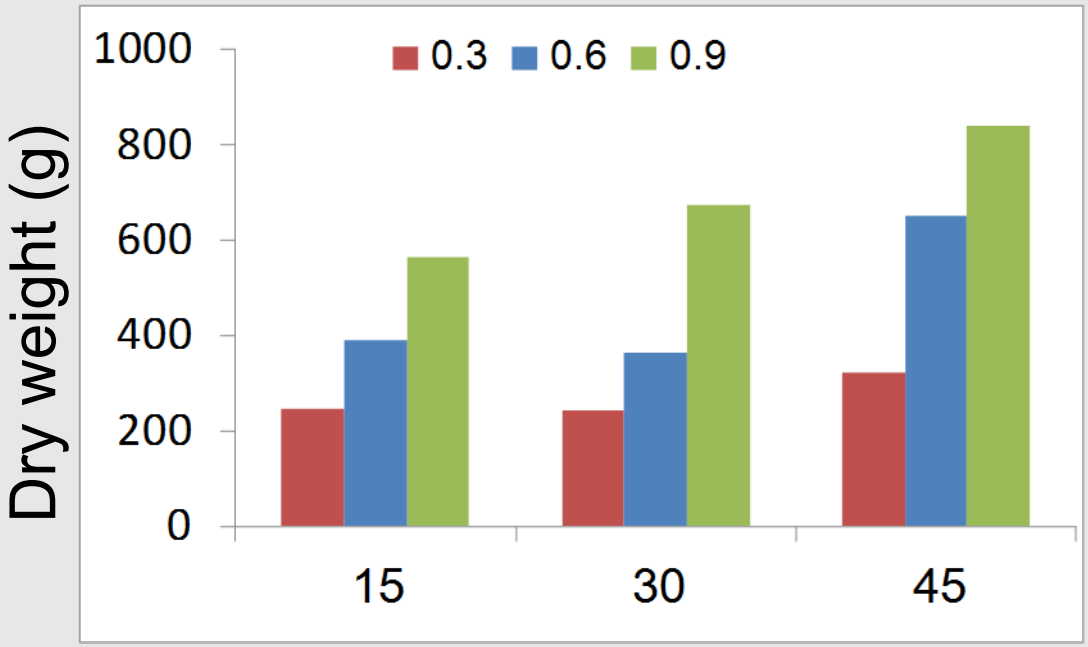
Jatropha – Field Irrigation Experiment

Early summer, 1st bloom cycle, Negev Desert



Jatropha – Field irrigation + fertilazation Experiment

Seeds per plant



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Thank you

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