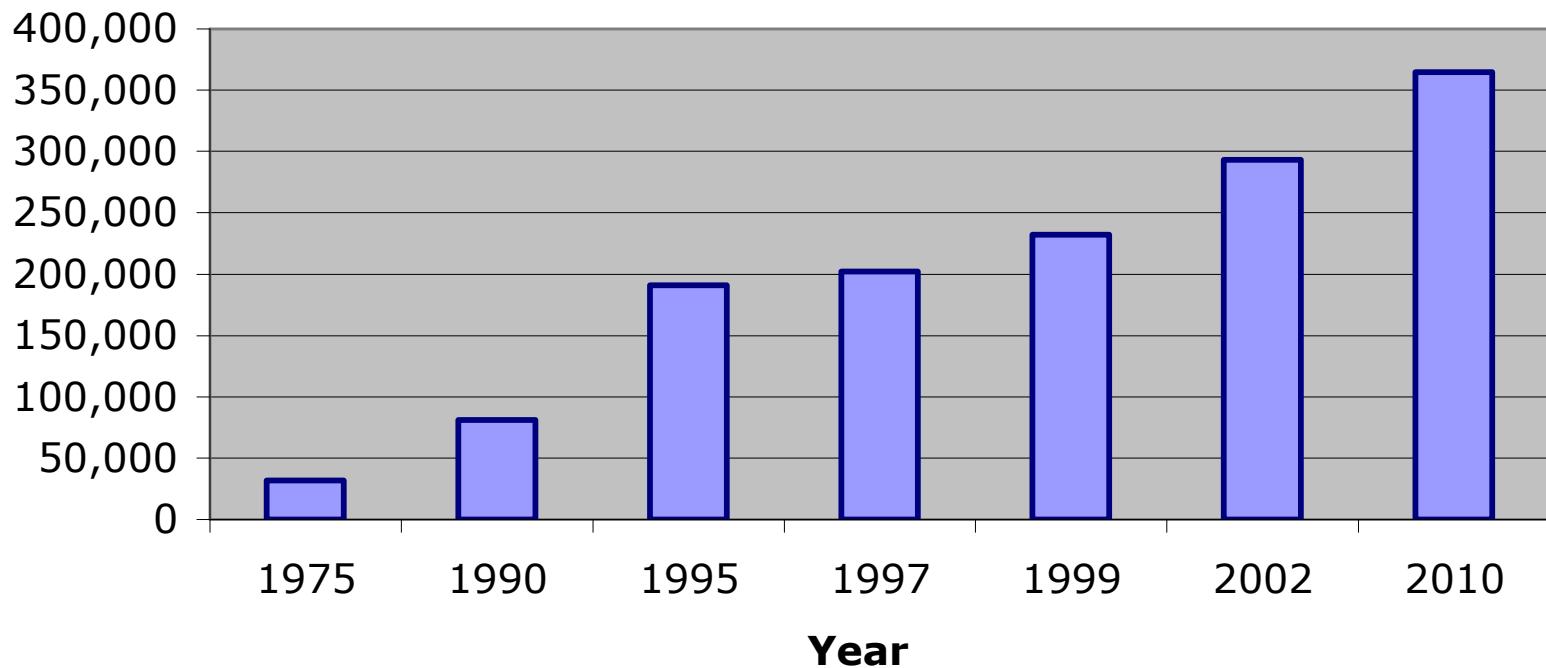


# Manure is a good thing



## Dairy Herd Growth in NM



Dona Ana County Dairy Complex

# Manure Generation from Dairy Operation

- 3600 tons/day dry weight basis
- 18000 ton of wet manure

# Potential Problems

- Odor
- Groundwater/Surface Water Contamination
- Green House gas (Methane), 21 times more potent than carbon dioxide
- Pathogen
- Salt

# Potential Benefit

- Pathogen-free compost
- High nitrogen compost
- No Odor
- Methane (captured/used)



# Value of Manure in New Mexico

- $4.3 \times 10^{18}$  BTU/year
- 24000 KW power generator
- 210 Million KWh/year
- \$21 Million/year



Feedlot



Solid Separator



Manure Pile

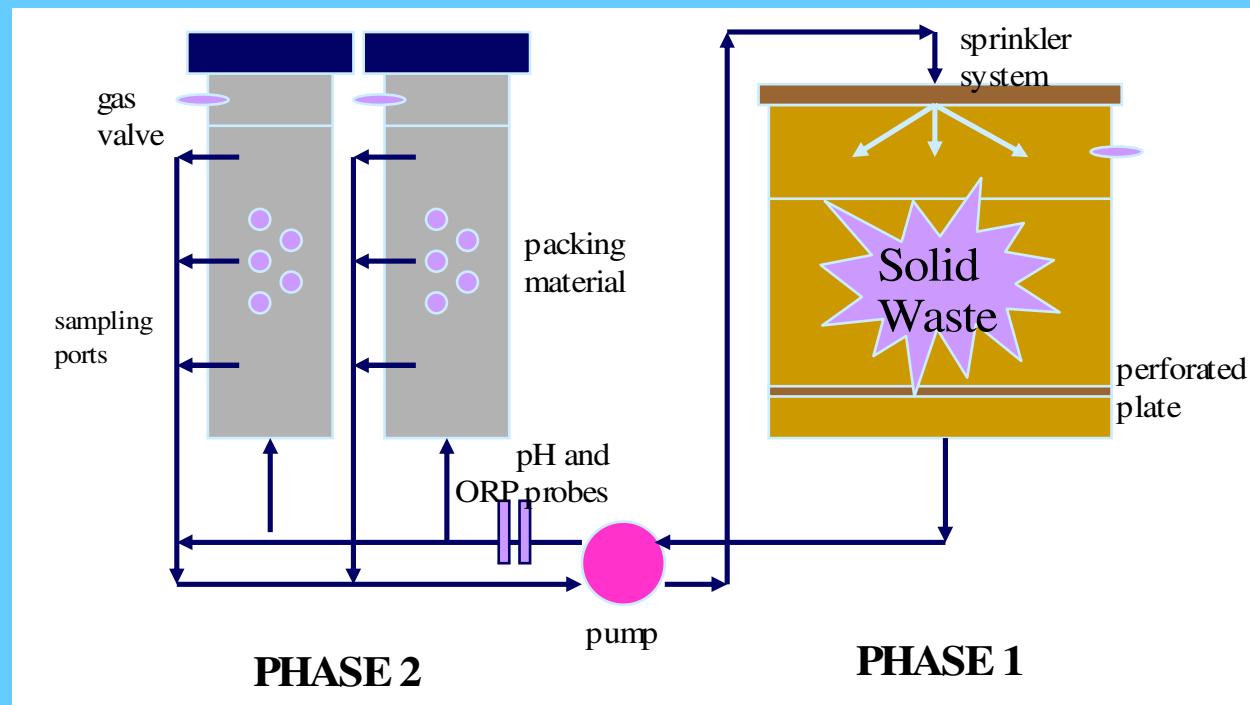


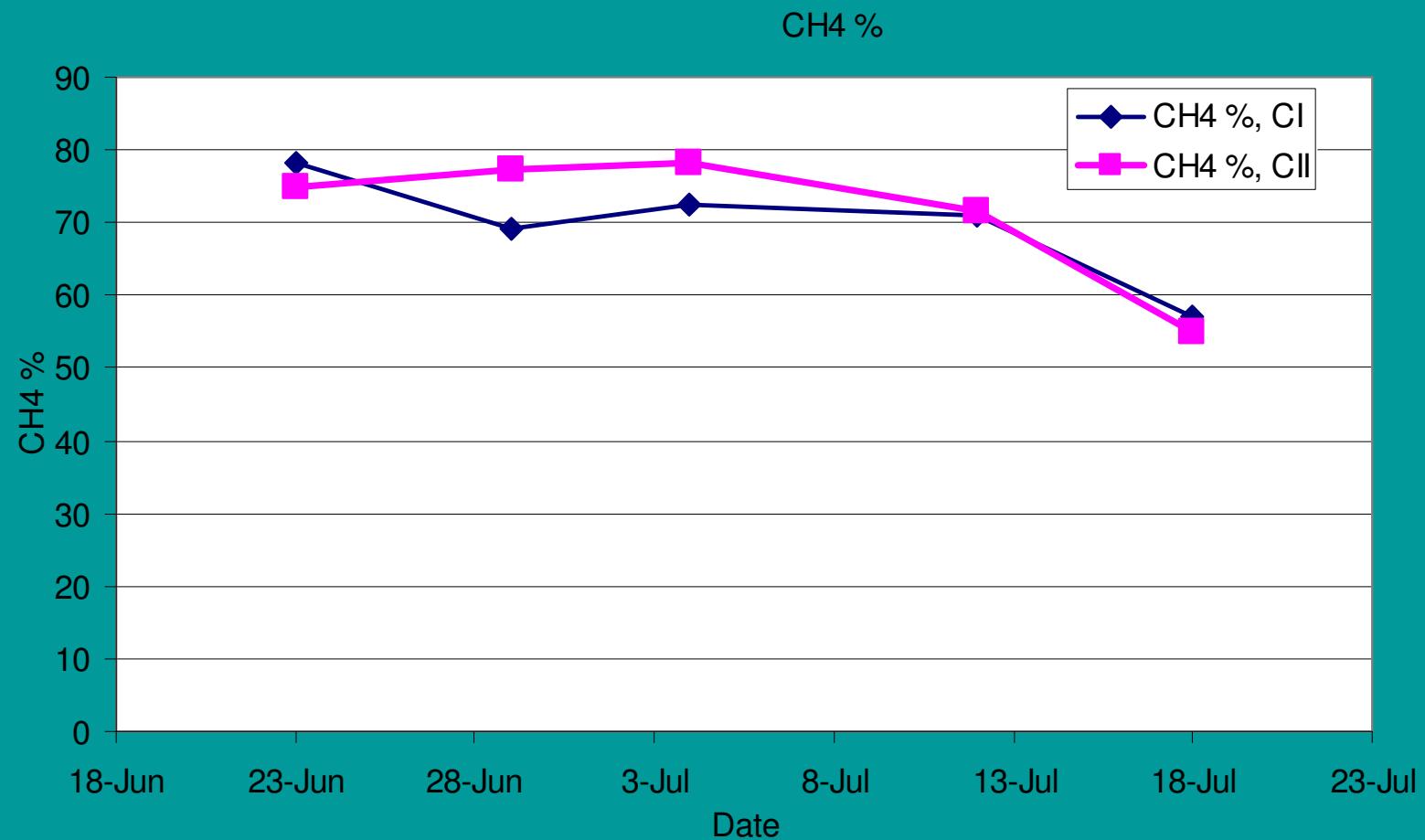
Separated Solids

Dona Ana County Dairy Complex

# Pilot Scale System











## Before and After

	Dry Weight, Kg	Volume, m <sup>3</sup>
Before Digestion	192	1.05
After Digestion	86	0.6
After Composting	83	0.26
% Reduction	57	75

Methane Production 96 m<sup>3</sup> /ton of waste

Parameters	Manure waste	Combined manure+ CGW	aerobically composted manure
Total N, %	2.32	2.56	0.9
Total P, %	0.15	0.43	0.2
Total K, %	0.42	2.2	2.70
Sodium, %	0.24	0.17	0.40





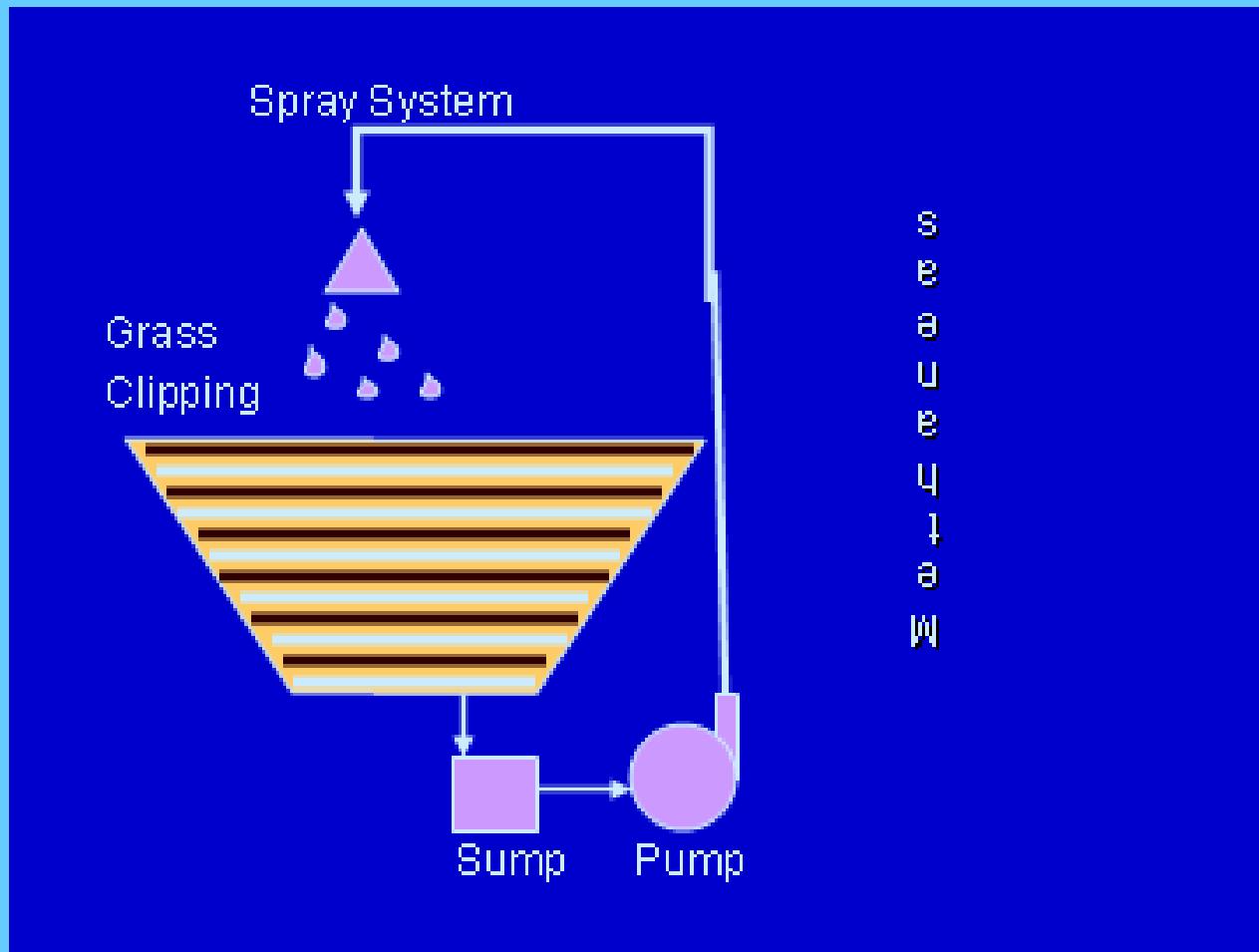
# **An Environmentally Safe Reuse Alternative for Animal Manure in the Manufacture of Nursery Plant Containers**



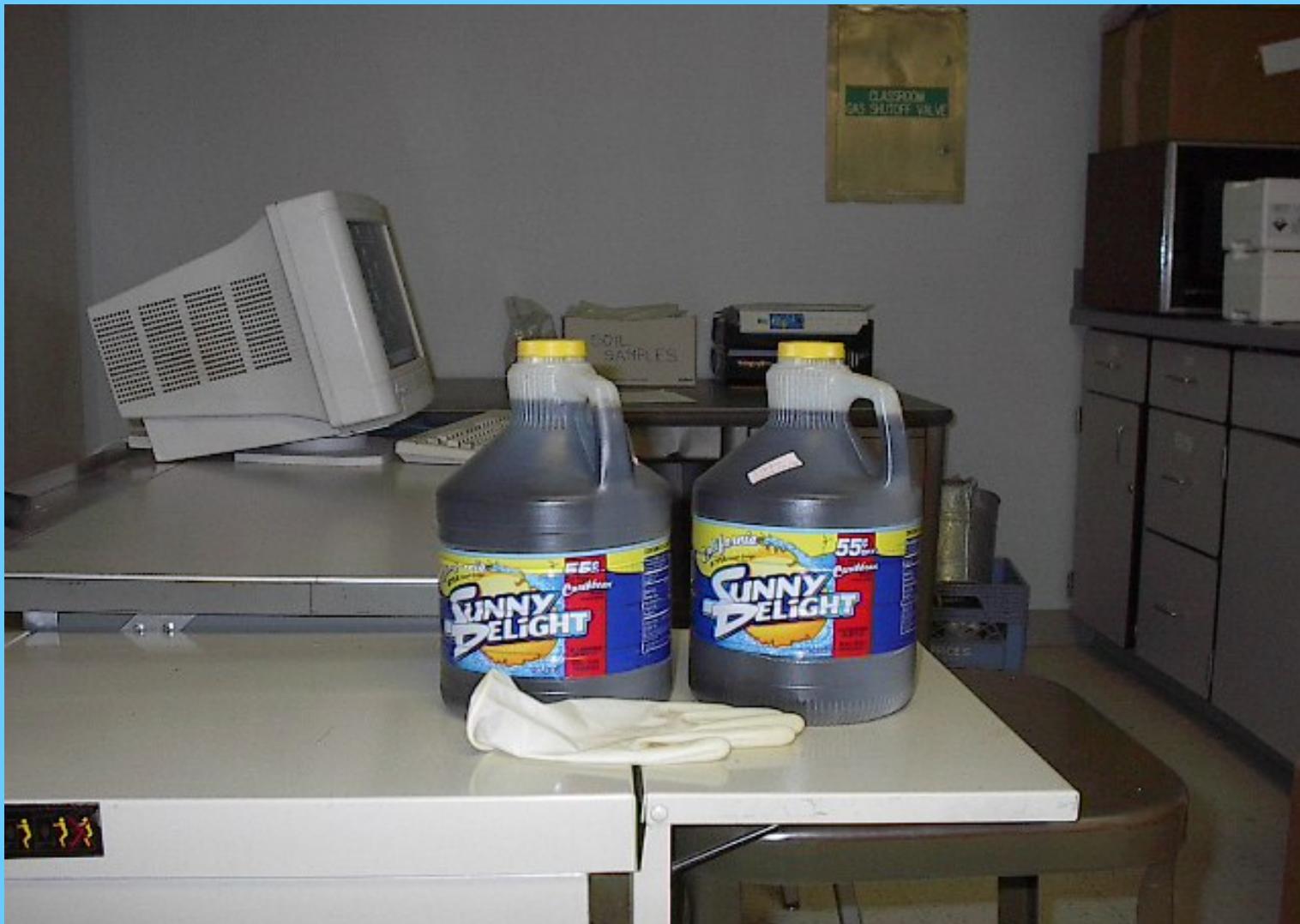
# Grass Clipping is Cool



# Conceptual Model



# Organic Liquid Fertilizer



# Phase 1 Bio-liquidification

Measured parameters	Amount, mg/L
Total organic content	27,800
Total N	7,100
Total P	950
Potassium, K	3300
Ca	1100
Mg	290
Fe	49
Mn	8
Zn	0.51

# Green-House Experiment

- The treatments are:

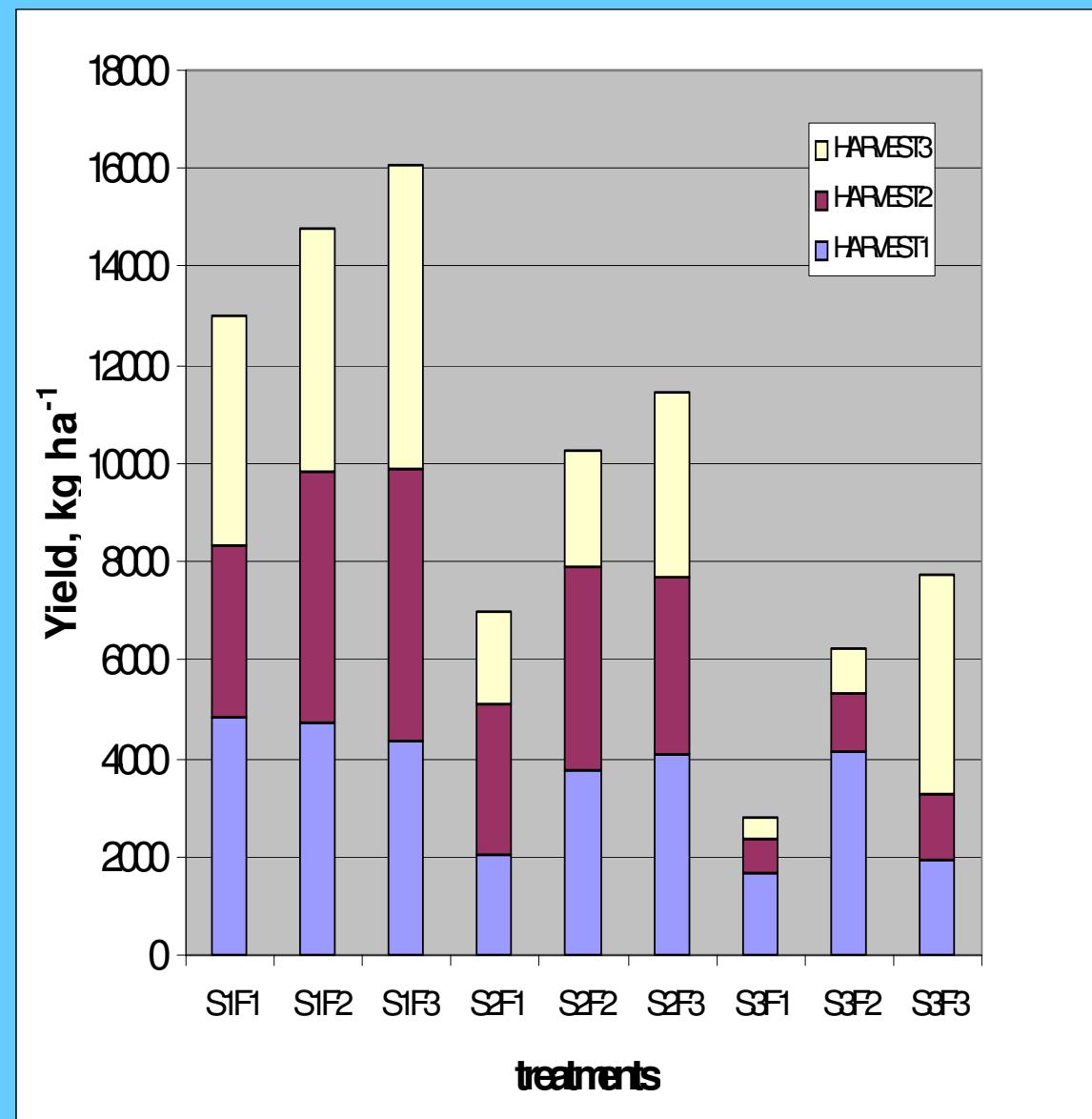
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- Salinity Levels

- S1: 1.5 ds/m
- S2: 4.5 ds/m
- S3: 6.5 ds/m

\*\*\*\*\*

- F1: 120 kg/ha  
(mineral Fertilizer)
- F2: 120 kg/ha O-F
- F3: 240 kg/ha O-F





S3F1

S3F2

S3F3



S1F1



S1F2



S1F3

# Water Consumption

