Jesse Arreguín
Councilmember, District 4

INFORMATION CALENDAR
March 25, 2014

To: Honorable Mayor and Members of the City Council

From: Councilmember Jesse Arreguín

Subject: Median Dry-Growth Garden Pilot Project Proposal

PROPOSAL:
Sacramento Street south of University Avenue contains large medians with lawns that use considerable water resources and require on-going maintenance. The attached proposal by local urban gardener Rene Zazueta, who works closely with UC Berkeley Professor Miguel Altieri on various agro-ecology projects, would turn under-utilized median space into a dry-growth garden that would save the City money, cut down on water usage, and help meet our Climate Action goals of local food production and security.

The City has expressed various concerns regarding the transformation of its medians, particularly as it relates to public safety and liability. However, the existence of those concerns do not necessarily mean that those concerns cannot be adequately resolved in order to allow a limited pilot project that can potentially provide value and benefit to the City and its residents.

For example, safety and liability could be addressed by limiting access to the medians to a limited number of people who have signed liability waivers, who could undertake strict safety precautions and limit their activity to certain confines of the median with an adequate buffer from the street.

Legitimate concerns exist, but they can be addressed and overcome. We should not reject such a promising project as impossible, but rather see if we can get to 'yes' by working together on solutions that could bring innovative and green uses to our underused spaces.

CONTACT PERSON:
Jesse Arreguin, Councilmember, District 4 981-7140

ATTACHMENTS:
1. Median Dry-Growth Garden Proposal

2180 Milvia Street, Berkeley, CA 94704 ● Tel: (510) 981-7140 ● TDD: (510) 981-6903 ● Fax: (510) 981-7144
E-Mail: jarreguin@CityofBerkeley.info

Sacramento Median Urban Garden Plan

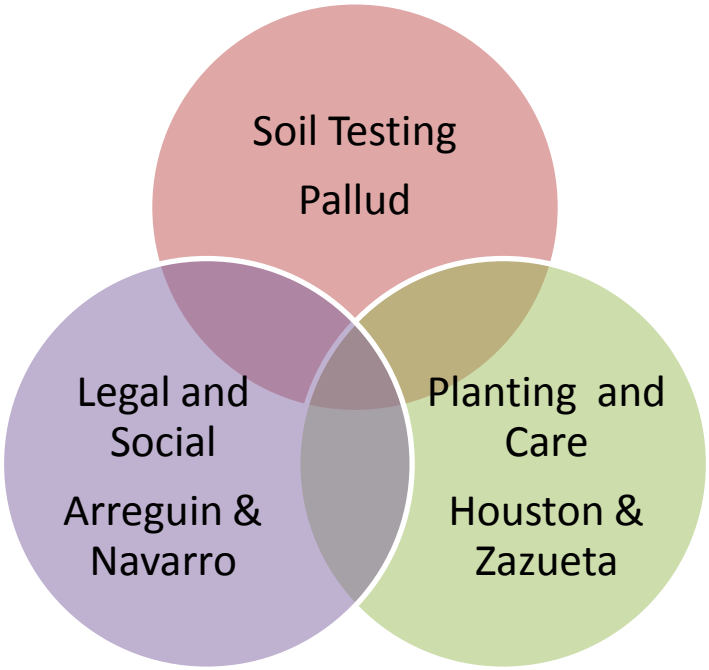
City (pic. 1)

Neighborhood (pic. 2)

Individual House (pic. 3)

Tomato growing in lawns (pic. 4)

Simple lawn recovery (pic. 5)



Graph 1

Soil Test

(For soil test only)

Introduction

Calendar

Protocol

Budget

(Celine Pallud)

Why (If contaminated)

Where (map of soil extraction)

When (before, during, after)

How (composite sampling, random, etc.)

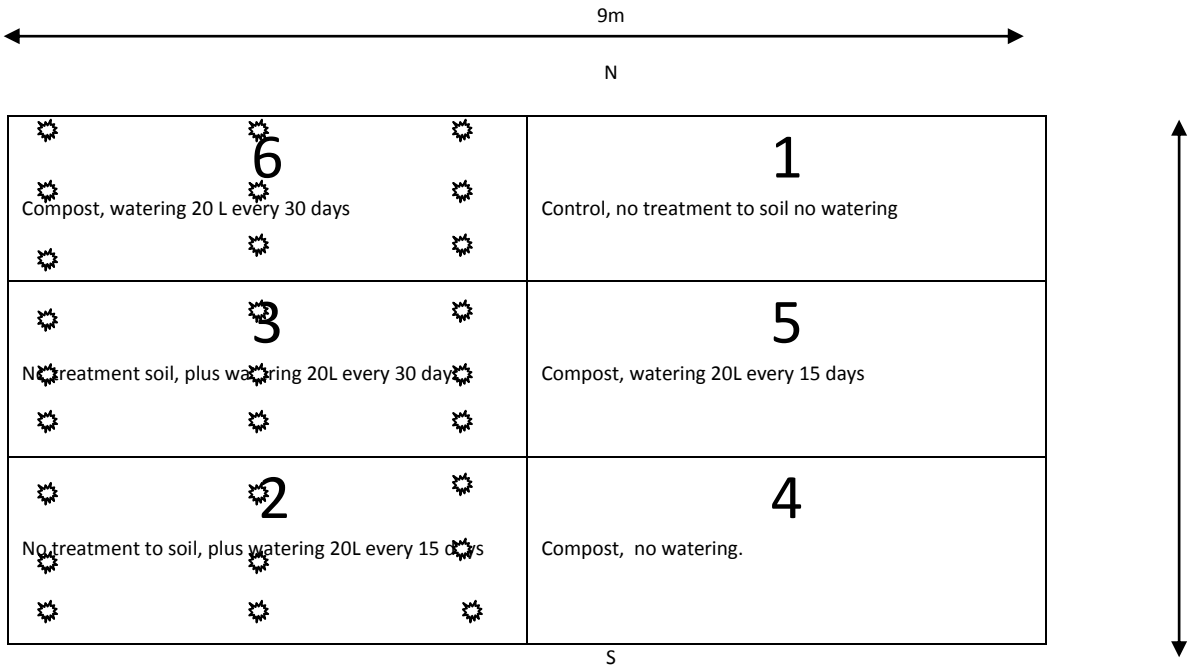


Table 1

(Map of soil simple extraction)

1. Introduction

The increase of food consumption has followed population growth. Human population is now concentrated in urban areas more than in rural areas. To boost production and ameliorate the carbon footprint, we must look at alternative methods that can mitigate and decuple the conventional agricultural model, which dependents on fossil fuels, other external inputs such as chemical products, genetically modified organisms and excessive use of water. Recycling the organic waste and the production of food in urban areas is crucial in mitigating the human carbon footprint. The application of appropriate methods can also help get rid of chemicals contaminants in public areas, the use heirloom varieties and reduction of the excessive use of water. The production of organic tomatoes with organic waste produced by civilians in public land can assist in accomplishing these goals. These solutions include: the construction of economical and viable methods of urban agriculture, the use of recycled materials in the construction containers, the application of a proper protocol for the production of dry farm tomatoes. The goal is to generate simple, appropriate methods and the experience where people can produce reasonable yields in urban areas. Ultimately, it may benefit urban farmers in poor neighborhoods, reduce externalities, and promote urban development. This study seeks to evaluate and promote the reduction of water use, an increase in healthy food, and the reduction of waste, furthermore, the participation of city employees, U.C.B. professors and Berkeley residents. This study using tomato plants and it will take place at Sacramento Street in between Dwight and Channing.

2. Method

Tomato seedlings

- On March 25, the tomato seeds will be planted at the Oxford Facility, on April 16 there will be transplanted into 4 inch pots, and on June 1st, the seedlings will be transplanted into Sacramento Street.

Prep holes for tomato plants

- On May 27 the hole will be dug with a diameter of 50 cm by 75cm deep. Then, it will be saturated with water.

- Treatments will continue throughout the lifespan of this study. November 2014 will be the last day of field work; ten tomato plants will be pulled out and weighted.

Soil preparation

- A mixture of 50% soil from site plus 50% compost from the city of Berkeley

Treatments (There are six treatments)

- Control, no treatment to soil, no watering
- No treatment to soil, plus watering 20L every 15 days
- No treatment to soil, plus watering 20L every 30 days
- Compost no watering
- Compost watering 20L every 15 days
- Compost watering 20 L every 30 days

Measurements (tomatoes ready for harvest)

- Yields tomatoes are weighed
- Measured, individual size and weight of tomatoes (Vernnier)
- Measured, sugar content (Refractometer)
- In between October 25 to November 25 the root and biomass analysis will be performed; six tomato plants will be selected from the treatment plot. The roots will be removed, washed and weighted. The rest of the plant will also be measured and weighted. Root weight will be added to the plant weight and the cumulative yields will be divided by the total plant (root + plant) weight.

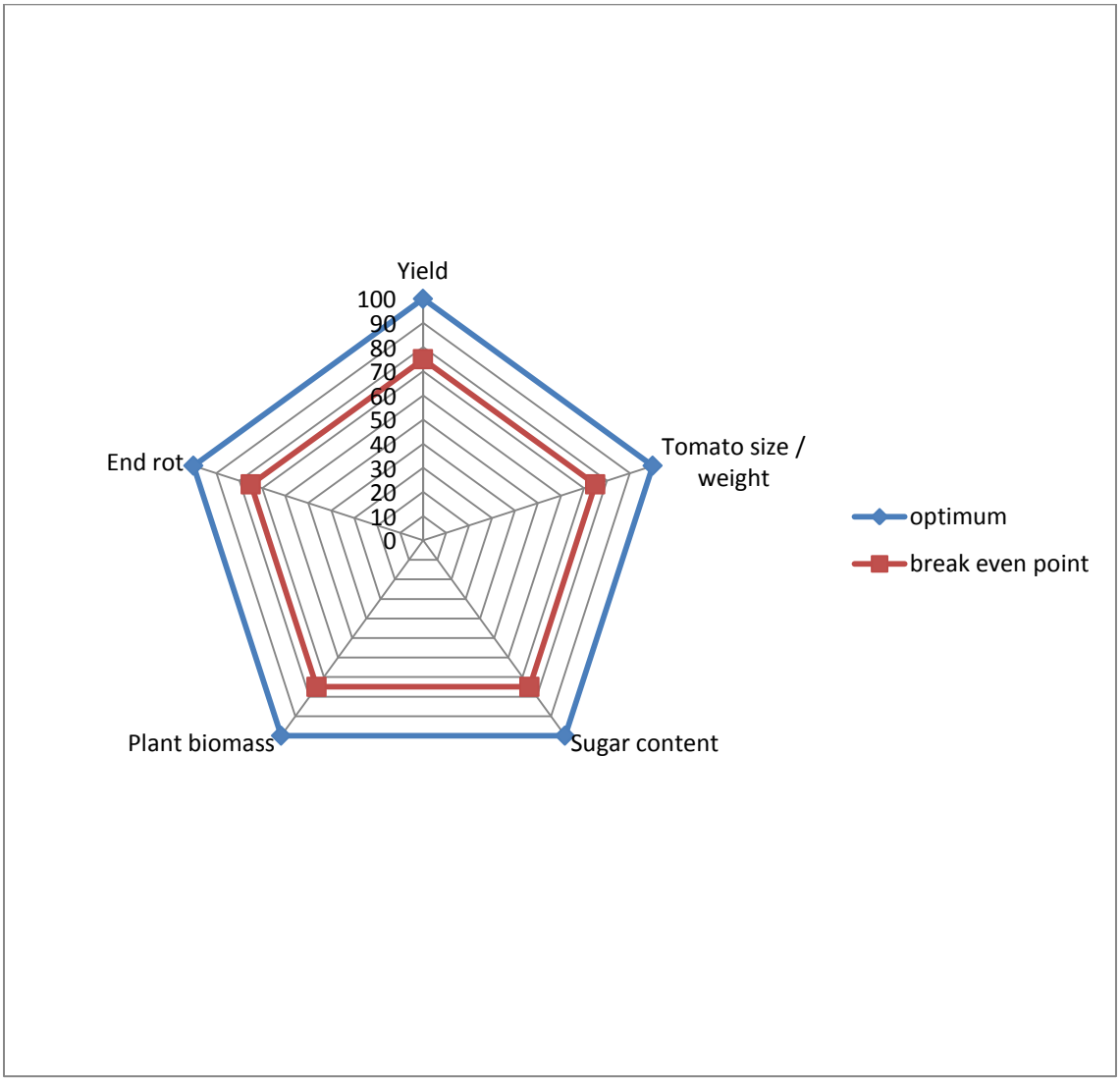
Calendar

Tasks	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
Soil sampling									
Seedling preparation (Oxford)									
Seedling transplant to 4 inch (Oxford)									
Soil prep. and holes									
Planting									
Application of soil treatments									
Application of water treatments (15 days)									
Application of water treatments (30 days)									
Physico-chemical characterization of soil									
Measurement of amount of fruit produced (yield)									
Measurement and weight of fruit size (Verrnier)									
Measurement of plant size (end of exp)									
Measurement of plant, root weight(end of exp)									
Data analysis									
Presentation of results									

Sacramento Median Urban Garden Budget

Item	Cost	True Cost	#of Items	Totals Costs	Total True Costs	Source	Notes

Amoeba



Graph #2

Normalization of Indicators

$\frac{4Kg}{3Kg} \times 100\% = 75\%$ Tomato yields 

$\frac{0.06Kg}{0.045Kg} \times 100\% = 75\%$ Tomato weight 

$\frac{5brix}{3.75brix} \times 100\% = 75\%$ Tomato sugar content brix scale 

$\frac{0.5Kg}{0.375Kg} \times 100\% = 75\%$ Plant biomass (wet and dry) 

$\frac{90\%}{67.5\%} \times 100\% = 75\%$ End rot 

$\frac{Tomato\ yield}{Tomato\ weigth} = Number\ of\ tomatoes$

Relations #1

Tomato yields vs weight

Tomato yields vs sugar

Tomato yields vs biomass

Tomato yields vs end rot

Relation #2

Tomato weight vs sugar

Tomato weight vs biomas

Tomato weight vs end rot

Relation #3

Tomato sugar vs biomass

Tomato sugar vs end rot

Relation #4

Tomato biomass vs end rot