2010 Report Farming Concrete



2010 Results

Introduction

Community gardens of all sizes grow fruits and vegetables of countless varieties for their families, friends, neighbors, themselves, and passersby, year after year. During the summer and fall of 2010, Farming Concrete counted how much.

Between hot temperatures, low rainfall, and extreme weather in the fall, this year stood out as an intense growing season for gardeners. Despite these obstacles, many participating gardeners recorded high yields from their intensively grown raised-bed garden plots. Each harvest logbook tells a story, and pooling them together brings us a greater narrative about food in the City's gardens. Data-based documentation of urban food production is of interest to many stakeholders. As one gardener told us, "The data that Farming Concrete accumulates will help ALL of the city's gardens make a strong, evidence-based case to decision makers about the value we create in our neighborhoods. Two green thumbs up from me!"

Farming Concrete's mission is to promote and support urban environmental sustainability in NYC through civic research and cartography.





Farming Concrete's mission is to promote and support urban environmental sustainability in NYC through civic research and cartography. Together with dozens of community gardens and our partners, GreenThumb (NYC Department of Parks), Just Food, and New York Restoration Project, we began to measure food production in community gardens during the 2010 growing season. This report outlines the results from the first year of this project.

According to GreenThumb, more than 80% of community gardens in NYC grow food. Community gardens are also important for public health, environmental education, and the urban ecology. Since many of these gardens are in areas with little access to fresh, healthy produce, the harvest from these gardens often contributes considerably to a family's access to high quality, culturally relevant fruits and vegetables. Data on how much food is grown may incentivize the creation of more gardens, and are integral to developing policy, funding streams, understanding, and infrastructure for preserving these community open spaces.



THANK YOU to all of the gardeners who weighed their produce, counted the crops growing in the garden, helped fellow garden members keep records, and made this project a success, and to all of the incredible volunteers who lent a few hours to a few months to be the backbone of implementing this citywide community based research project. We'll see you this spring!







Methodology Overview

In its first year, Farming Concrete used simple citizen science techniques of mapping, counting, and measuring to engage gardeners in quantifying their food production. There were three distinct parts of the project: outreach, weighing harvests, and crop inventory. Compost and rainwater bins were also counted and measured as an optional addition.

Outreach

To reach community gardeners about participating in this project, announcements were released through GreenThumb and Just Food, and a team of more than twenty research volunteers visited many of New York City's 500 community gardens. Outreach volunteers visited gardens by foot, subway, and bike. They spoke with members of each garden and trained interested members in Farming Concrete's citizen science methods for recording food production, providing free scales and logbooks.

At least one gardener in a community garden needed to commit to weighing their produce for us to bring a scale to the garden. Across the city, these garden volunteers added up to form a sample population of 110 gardeners (albeit self-selected, not randomly selected) who would weigh their produce throughout some or all of the growing season. Farming Concrete focused only on gardens that produced fruits or vegetables; herbs and fruit trees would require different methods to measure.

Data Collection

Harvest Logs

Gardeners recorded their yield in Harvest Logs by weighing their produce each time they took something from the garden. For each crop, gardeners would note the date, number of plants or area of crop coverage, and weight.

Twice during the growing season--at the end of the summer and end of the fall--harvest logs were sent to the Farming Concrete team. The data were then entered into a Survey Monkey online form.



The output from the Survey Monkey form was imported into a database for analysis. Not all harvest logs were completed consistently: some were missing dates, some plants, and some weight. Logs missing weight were not added to the database. Those missing dates were added, and those missing the number of plants were added, though they would be ignored during analysis, to be used when calculating such individual gardeners' final tallies.

Crop Inventories

Crop Inventories were taken by measuring each raised bed or planting area in a garden and counting the number of plants of each edible crop in a given bed. For particularly dense plantings or for those which were especially difficult to count individually (for example: strawberries), the crop's area of coverage was recorded. In many cases, a map of the garden was drawn, including each area under production.

As with the Harvest Logs, Crop Inventories were entered into a Survey Monkey online form. For those entries that included areas but excluded a number of plants, we found an approximate value for the number of plants by averaging the density--plants per square foot--for each crop using data from Megan Gregory, PhD student at Cornell University. While doing parallel research during the same growing season, Gregory recorded both number of plants and approximate square-foot coverage during crop inventory of fifteen community gardens, and generously shared the data with us for this project.

"There are the "thieves" in the East Village, which prevent us from actually weighing everything we grow. A good number of people walk through and just take what they want to eat. That used to bother me... but then I figured, at least they are eating something good!"

-Manhattan Gardener

Analysis

Harvest Logs

Using the harvest logs, we produced a per-crop estimate of the number of pounds that an individual plant yielded over the course of the 2010 growing season.

For each gardener who grew a given crop, we calculated the gardener's actual yield in pounds per plant by dividing the total number of pounds that the gardener reported for this variety by the maximum number of plants that the gardener provided.



We used the maximum number of plants for these calculations because gardeners may have recorded the number of plants for one particular Harvest Log entry, not all of the plants that they were growing. For example, a gardener with 5 tomato plants might weigh tomatoes from 3 of those plants on Wednesday and all 5 on Friday. Over the course of a season, it becomes difficult to deduce the number of plants for which gardener was measuring the yield by looking at Harvest Log entries.

To find a crop-wide estimate, we averaged all of the gardeners' yields per plant by summing each gardener's average yield for the crop and dividing by the total number of gardeners who recorded harvests of that variety.

There were a number of gardeners who weighed their produce during the summer months but did not weigh into the fall. Since each gardener's yield per plant is averaged together, the yield of those who did not weigh during the fall is essentially counted as 0 using this method. This leads to inaccurately low estimates. In order to address this, we split the season into summer and fall seasons. For each variety we found a summer and a fall estimate using the same method discussed above and added the two. This combined average takes into account the harvests of those gardeners who only took part for the summer without assuming that these gardeners' plants yielded

nothing in the fall.

Crop Inventories

Given an average yield per plant from the above analysis of Harvest Logs and the number of plants counted during Crop Inventory, we are able to extrapolate an estimated yield for inventoried gardens.

"Our garden unanimously agreed to participate because if there is official data to present to the government and the public, we hope that all will see the tremendous resource the community gardens provide to the public. That we are not only a viable alternative to storebought vegetables, but also a healthier activity in an urban environment than other choices given."

-Brooklyn Gardener







Number of gardens: 67 Gardens Total area: 1.7 acres (71,950 sq ft) Total plants: 39,518 Total pounds recorded: 87,690 lbs* Estimated dollar value of harvest recorded: **\$214,060**

Crop	# of Plants
Tomatoes	7,150
Beans	4,732
Peppers (sweet)	3,201
Calaloo	2,483
Collards	2,439
Okra	2,075
Lettuce	1,964
Peppers (hot)	1,416
Cucumbers	1,335
Chard	1,252
Squash (summer)	1,199
Cabbage	1,099
Eggplant	1,000
Beets	995
Corn	907
Kale	784
Carrots	667
Broccoli	505
Strawberry	483
Tomatillo	379
Onion	348
Scallions	286
Garlic	265
Turnip	251
Peas	235

Top 25 Crops City-Wide Per Plant







Top 25 Crops City Wide Per Pound

Crop	Estimated II	bs
Tomatoes	29,628 lbs	
Cucumbers	8,322 lbs	
Peppers (sweet)	7,843 lbs	
Chard	5,505 lbs	
Collards	5,002 lbs	30000
Squash (summer)	4.305 lbs	
Eggplant	3,838 lbs	25000
Squash (winter)	3,003 lbs	
Peppers (hot)	2,518 lbs	20000
Cabbage	2,319 lbs	×
Calaloo	2,276 lbs	j 15000
Lettuce	2,181 lbs	
Beans	2,178 lbs	10000
Kale	1,579 lbs	
Corn	1,000 lbs	5000
Okra	942 lbs	
Tomatillo	820 lbs	0 at the sty of a the set with a set and a set at a set of a set at a set a
Broccoli	567 lbs	Torration to sole the charming of wine and a sole and the second of the contract of the second of th
Melon	543 lbs	people south south the Tomatoe
Tomatoes (heirloom)	498 lbs	
Basil	496 lbs	
Onion	380 lbs	
Spinach	364 lbs	
Beets	283 lbs	
Carrots	212 lbs	

*These estimates are based on average yields recorded across four boroughs during the 2010 growing season. Participants included gardeners of a wide range of experience, growing strategies, and access to resources such as water and sunlight. These estimates are meant to reflect a realistic 2010 harvest in a small urban space, and only include what was recorded, which in many cases was not everything that was grown. As such, this is a very conservative estimate.



2010 Patiens

Gardens that tracked their harvests:

Bronx:

211th Street Block Association Garden Clay Avenue Community Garden Clinton Avenue Community Garden East 143rd Street Community Garden El Flamboyan Family Group Garden Fordham Bedford Lot-Busters Garden of Happiness Genesis Park - St. Augustine School of the Arts Glover Street Garden Mildred T. Rhodebeck Garden Tremont Community Garden Volky Flower Garden Wanaqua Garden **Brooklyn:** Brooklyn Bears Pacific Street Garden East End Community Garden East End Community Garden Floral Vineyard Gil Hodges Community Garden Greene Acres Community Garden Herbal Garden Hollenback Community Garden Jane Bailey Memorial Garden Prospect Heights Community Farm

Six Fifteen Green Community Garden Manhattan: El Jardin Del Paraiso M'Finda Kalunga Community Garden Our Little Green Acres (Garden Eight)West 104th Street Garden Queens: Curtis "50 Cent" Jackson Community Garden

Two Coves Garden

Mapped gardens:

Bronx:

211th Street Block Association Garden **Belmont Little Farmers** Bryant Hill Garden (9-8 Faile St.) Centro Cultural Rincon Criollo Clay Avenue Community Garden **Clinton Avenue Community Garden** East 143rd Street Community Garden Edith Community Garden (830 Elton Tennats. Association) El Girasol Garden of Eden (Alvarez Community Garden) Garden of Happiness Genesis Park - St. Augustine School of the Arts Glover Street Garden Hispanos Unidos (Daly Ave. Block Association) La Isla Mildred T. Rhodebeck Garden Padre Plaza/Success Garden Paradise on Earth Tremont Community Garden **Brooklyn:** 1100 Block Bergen Association 700 Decatur Street Block Association American Heart

Brooklyn Bears Carlton Ave. Garden Brooklyn Bears Pacific Street Garden Brooklyn Bears/Rockwell Place Garden Clara's Garden Clifton Place Memorial Park and Garden Crystal Street Block Association Community El Sol Brillante Jr. Garden East 4th Street Garden Association (Windsor Garden of Love Terrace Kensington Veterans Memorial) East New York Farms (UCC) Hands & Heart (New Lots Urban Farm) Hart to Hart Ingersoll Garden of Eden Lefferts Place Block Association Prospect Heights Community Farm Santos White Garden Senior Citizens Block Association of Mermaid Six Fifteen Green Community Garden Union Street Garden and Community Development Walt L. Shemal (Dean North Community Garden) Warren St. Marks Community Garden Manhattan:

110th Street Block Association Chenchitas' Group **Clayton Williams Garden Dias y Flores** El Gallo Social Club Inc. Frank White Memorial Garden La Casita La Cuevita Community Garden La Perla Garden Liberty Community Garden M'Finda Kalunga Community Garden Maggie's Garden Morris Jumel Community Garden New 123rd Street Block Association Our Little Green Acres (Garden Eight) Peach Tree Garden Pleasant Village Community Garden West 104th Street Garden William A. Harris Garden Queens: Curtis "50 Cent" Jackson Community Garden Two Coves Garden





Number of gardens: 20 Gardens Total area: 0.48 acres (21,110 sq ft) Total plants: **7,497** Total pounds recorded: 18,670 lbs*

Estimated dollar value of harvest recorded: \$42,200

Squash (winter

Crop	# of Plants	Estima Ibs	ted	Т	'0]	p 2	5]	Bro	nx	Cı	op	s F	Per	Pl	an
Tomatoes	1,334	5,528 lbs	5	_											
Peppers (sweet)	809	1,982 lbs	5												
Beans	749	345 lbs													
Collards	513	1,052 lbs	5	100											
Peppers (hot)	482	857 lbs		1500											
Cucumbers	437	2,724 lb:													
Lettuce	317	352 lbs		1200											
Tomatillo	316	684 lbs													
Calaloo	307	281 lbs	S	000											
Cabbage	286	603 lbs	lant	900		_									
Squash (summer)	265	951 lbs	of P												
Corn	259	285 lbs) #	600											
Eggplant	250	959 lbs													
Broccoli	182	204 lbs													
Okra	144	65 lbs		300											
Turnip	106	53 lbs													
Carrots	96	30 lbs		0	Ĺ		<u>×</u>		10 0			× 0			
Garlic	69	33 lbs		Tomat	toes	etti Beans	ers hoti,	perstuce Lettuce	Calaloo	gennen c	ggp Brocc	ON OKTO	nip carrots	nic toes on	Not Pease
Potatoes	65	31 lbs		peppe	,	Pepp			Squash						
Onion	63	69 lbs													
Peas	61	22 lbs		— — *The			h						. f h		alı uri a ar
Melon	46	284 lbs		the 2	ese e 2010	growing	s are b g seas	on. Partic	average cipants i	ncludec	ecorded I garden	ers of a	a wide r	ange of	experi-
Spinach	44	89 lbs		ence	e, gro	wing sti	rategie	s, and a	cess to	resourc	es such	as wate	er and s	unlight.	These
Kale	43	87 lbs		only	inclu	ide wha	at was	recorded	, which	in many	/ cases \	vas not	t everyth	ning tha	t was
Squash (winter)	28	849 lbs		grow	vn. A	s such, t	this is a	a very co	nservati	ve estin	nate.				

1x Crops Per Plant





Number of gardens: 24 Gardens Total area: 0.87 acres (37,920 sq ft) Total plants: 18,882 Total pounds recorded: 35,680 lbs*

Estimated dollar value of harvest recorded: **\$90,100**

Crop	# of Plants	Estimate Ibs	ed	
Beans	3,138	1,444 lbs		
Calaloo	2,147	1,968 lbs		
Tomatoes	1,912	7,923 lbs		
Okra	1,590	722 lbs		
Peppers (sweet)	1,475	3,614 lbs	_	3
Collards	1,254	2,572 lbs	_	
Chard	895	3,935 lbs	_	3
Lettuce	809	899 lbs	-	ر ک
Cabbage	553	1,167 lbs		Ζ
Peppers (hot)	544	967 lbs	ants	2
Cucumbers	537	3,347 lbs	of Pl	
Eggplant	459	1,761 lbs	#	1
Corn	391	431 lbs	_	1
Carrots	379	121 lbs	-	1
Kale	296	596 lbs		
Squash (summer)	294	1,056 lbs	-	
Scallions	286	27 lbs	-	
Onion	213	233 lbs	_	
Garlic	191	92 lbs	_	
Peas	174	63 lbs		
Broccoli	154	173 lbs		
Beets	134	38 lbs		1
Bok choy	111	148 lbs		(
Strawberry	95	24 lbs		(
Brussell sprouts	86		_	(

Top 25 Brooklyn Crops Per Plant



*These estimates are based on average yields recorded across four boroughs during the 2010 growing season. Participants included gardeners of a wide range of experience, growing strategies, and access to resources such as water and sunlight. These estimates are meant to reflect a realistic 2010 harvest in a small urban space, and only include what was recorded, which in many cases was not everything that was grown. As such, this is a very conservative estimate.





Number of gardens: 21 Gardens Total area: 0.27 acres (11,700 sq ft) Total plants: 9,865 Total pounds recorded: 24,450 lbs* Estimated dollar value of harvest recorded: **\$60,590**

Crop	# of	Estimate	ed				
	Plants	lbs	Т	on 25	Manhattan	Crons	Por Plant
Tomatoes	7,150	13,538 lb	S	op 23		crops	
Beets	4,732	239 lbs					
Bettuce	3,201	799 lbs					
Peppers (sweet)	2,483	1,504 lbs					
Squash (summer)	2,439	1,907 lbs		3500 i			
Collards	2,075	984 lbs					
Beans	1,964	174 lbs		3000			
Peppers (hot)	1,416	608 lbs		2500			
Okra	1,335	139 lbs		2500			
Strawberry	1,252	66 lbs	ants	2000			
Cabbage	1,199	470 lbs	of Pla				
Broccoli	1,099	189 lbs	#	1500			
Basil	1,000	368 lbs					
Eggplant	995	633 lbs		1000			
Corn	907	181 lbs		500			
Cucumbers	784	985 lbs		500			
Turnip	667	68 lbs		0	the share of the s	di si ant an er	the set of the set of the
Kale	505	260 lbs		Tomato Bet	Lettus vec mmc dan Bear, (nº October do Br	JCCC Bargaplan Countral Line	M. Karcha Radi Onicano hoor pinas prov
Chard	483	325 lbs		Per	School Fer		Tomatoes Brus
Radish	379						
Onion	348	76 lbs					
Carrots	286	21 lbs		*These est	timates are based on average viel	ds recorded across	four boroughs during
Tomatoes (heirloom)	265	204 lbs		the 2010 g ence, grow estimates	growing season. Participants inclu ving strategies, and access to reso are meant to reflect a realistic 20	ded gardeners of a urces such as wate 10 harvest in a sma	wide range of experi- er and sunlight. These
Spinach	251	129 lbs		only includ	le what was recorded, which in m	any cases was not	everything that was
Brussell sprouts	235			grown. As	such, this is a very conservative e	stimate.	





Number of gardens: 2 Gardens Total area: 0.028 acres (1,230 sq ft) Total plants: **3,292** Total pounds recorded: **8,890 lbs***

Estimated dollar value of harvest recorded: **\$21,160**

Сгор	# of Plants	Estimat Ibs	ted	Top 25 Queens Crops Per Plan																	
Tomatoes	637	2,640 lbs																			
Beans	466	214 lbs		—																	
Peppers (sweet)	316	742 lbs		—																	
Chard	303	1,152 lbs		- 900 .																	
Cucumbers	262	1,265 lbs	_	800																	
Collards	203	394 lbs	_	700																	
Eggplant	192	484 lbs	_	600																	
Carrots	126	40 lbs	_	600																	
Lettuce	125	131 lbs	lts	2 500																	
Squash (summer)	118	391 lbs	of plan	5 400																	
Strawberry	109	27 lbs	= #	300																	
Corn	108	102 lbs		_																	
Cherry tomatoes	93				_	_	_		_	_		_								_	_
Peppers (hot)	49	86 lbs	_																		
Cabbage	48	78 lbs	_																		
Okra	37	16 lbs	_	0 to estate the see had the state dent of the track of the the second the the second the																	
Brussell sprouts	35		_	torn there are a the second to the second performance of the second seco																	
Squash (winter)	33	455 lbs	_																		
Strawberry	15	27 lbs	_																		
Melon	5	31 lbs		—																	
Rhubarb	4			—																	
Parsnip	3			*These estimates are based on average yields recorded across four boroughs during																	
Onion	2	2		 ence, growing strategies, and access to resources such as water and sunlight. These 																	
Broccoli	1	1		estimates are meant to reflect a realistic 2010 harvest in a small urban space, and																	
Celery	1	1		grown. As such, this is a very conservative estimate.																	

