

A woman with long dark hair, wearing a dark long-sleeved shirt with red and blue stripes on the sleeves, is working in a greenhouse. She is focused on packing green leafy vegetables into a large cardboard box. The background shows rows of similar plants in the greenhouse. The title text is overlaid on a dark semi-transparent rectangle in the upper half of the image.

Challenges of Complying With INMP Reporting Requirements for Greenhouse Growers on the Central Coast

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UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

Asian Specialty Vegetable Production

County	No of Asian Farmers	Acres Harvested	Value of Asian Vegetable Production
Fresno*	1,499	950	\$15,975,000
Santa Clara*	277	503	\$6,981,000
San Bernardino	157	1716	\$16,471,184
Monterey	128	963	\$17,378,000
San Luis Obispo	118	267	\$2,161,000
Riverside	368	2627	\$19,866,000
Ventura	255	755	\$15,006,000
Total	2802	7781	\$93,838,184

* Limited-resource, small-scale, socially disadvantaged Chinese, Hmong, and other Asian immigrant farmers.

2023 Santa Clara County Crop Report: Value \$10,274,000 on 678 acres

Asian Farms Information

	Fresno	Santa Clara
Total no. of farms	1036	277
Median size of farms (acres)	8.8	4
No of farms <10 acres	141 (14%)	140 (68%)
No of farms <\$50,000 in sales	445 (43%)	137 (67%)

Farming Practices: Production Systems

Greenhouse Production



Open Field Production



Farming Practices: Irrigation Systems

Overhead Irrigation



Senninger Super Spray



Farming Practices: Nutrient Management



Farming Practices: Marketing

Direct Marketing



Wholesale Marketing



Challenges of Complying With INMP Reporting Requirements

1. Highly diverse crop systems
2. High variability within a crop type
3. Small scale operations
4. Language barriers
5. Gaps in research

UCCE outreach and technical assistance
UCCE INMP related research

1. Different Types of Cut Flowers

Chrysanthemum, statice, snapdragon, safflower, etc.



1. Different Types of Asian Vegetables



Daikon Radish



Gai Choy



Gailan



Ong Choy



Malabar Spinach



Yam Leaves

1. Different Types of Asian Vegetables



Methi



**Vietnamese
Coriander**



Saluyot



Purslane



Mint



Perilla

1. Different Types of Asian Vegetables



Tatsoi



Yu Choy Sum



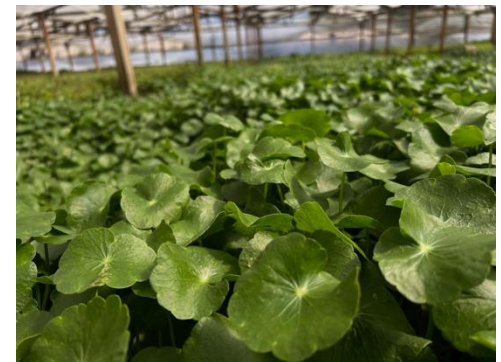
Pea Tips



Chayote Shoots



Garlic Greens



Asiatic Pennywort

1. Different Types of Asian Vegetables



Bitter Melon



Asian Cucumber



Asian Cauliflower



Winter Melon



Asian Basil



Hon Tsai Tai

1. Different Types of Asian Vegetables



Bok Choy



**Edible
Chrysanthemum**



Garlic Chives



A Choy



Amaranth



Chinese Celery

1. Variability in Length of Growing Season

45-60 days duration crops (1 harvest)
Bok choy
Baby bok choy
A choy (celtuce)
Gai choy
Yu choy
Gailan
2-4 months duration crops (1-2 harvest)
Amaranth
Daikon radish
Garlic
Chinese celery
Edible chrysanthemum
4-9 months duration crops (multiple harvests)
Malabar spinach
Yam leaves
Ong choy
Pea tips
3-4 year duration (multiple harvests)
Garlic chives

2. High Variability Within a Crop Type – Different Types of Bok Choy



Taiwan bok choy



Shanghai bok choy



Bok choy

2. High Variability Within a Crop Type – Different Types of Bok Choy



Tall Type
Big Choi



Medium Type
New Nabai



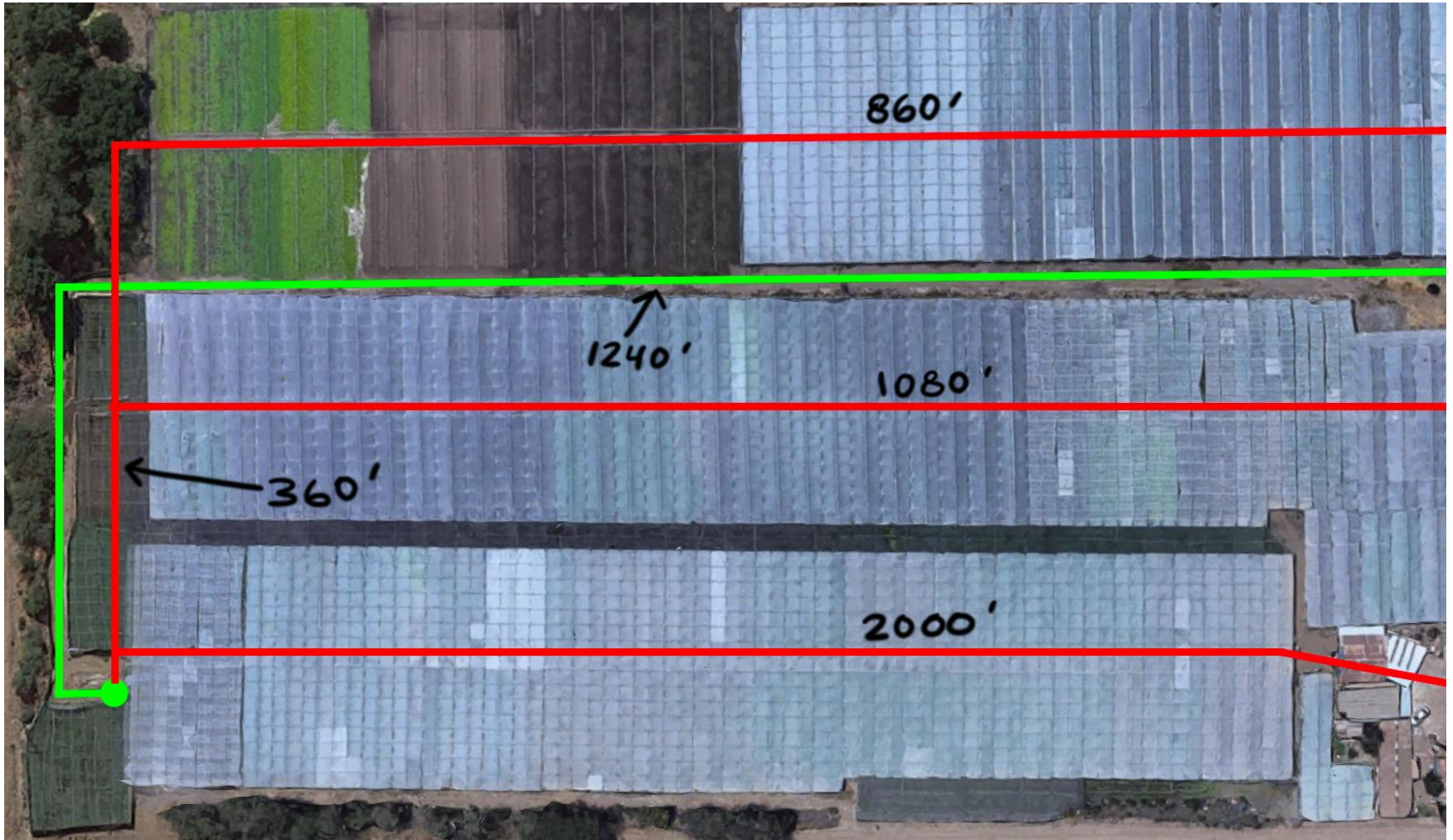
Dwarf Type
Hotau Improved

3. Small-scale Farms



3. Small-scale Farms

20 Acre Asian Leafy Vegetable Farm



3. Small-scale Farms

20 Acre Asian Leafy Vegetable Farm



3. Small-scale Farms with ~2000 sq ft Blocks



20 feet wide x 100 feet long

3. Small-scale Farms with ~2000 sq ft Blocks



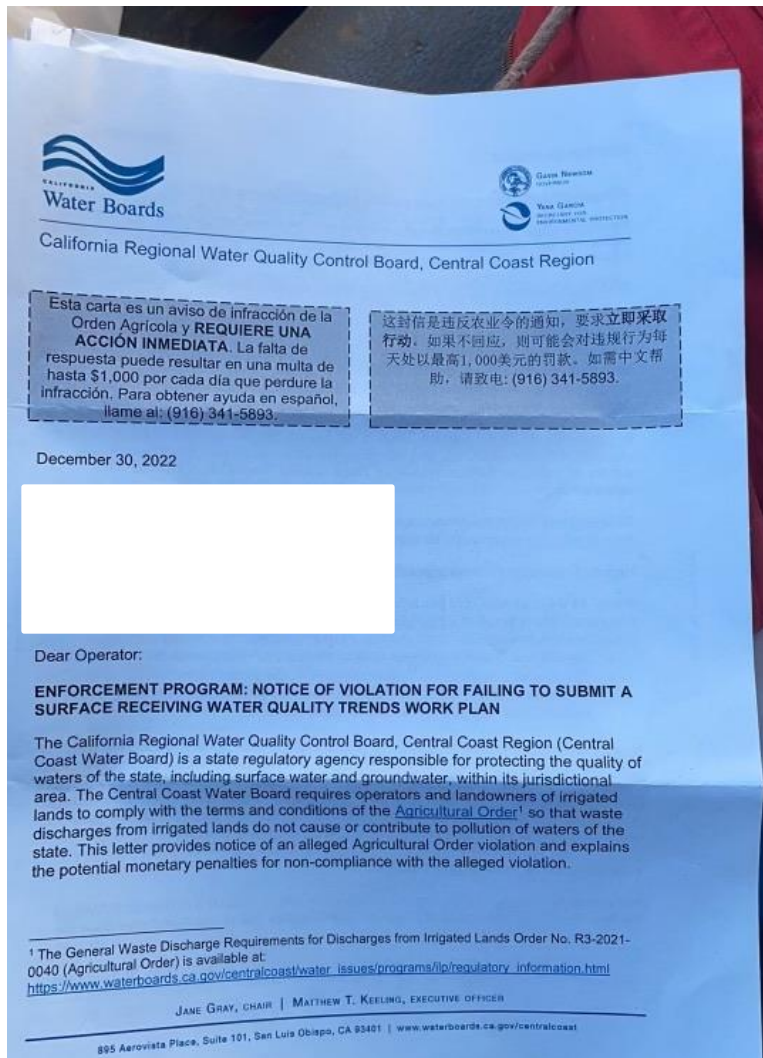
3. Small-scale Farms where Entire Family is Involved in Farming – Lack of Capacity and Technical Expertise



4. Language Barriers – Monolingual Spanish, Chinese, Vietnamese, and other Asian Grower Communities

NAME OF OPERATOR	OPERATION NAME	NOTES
An Yang Chen	An Yang Chen Nursery	
Bob Kuang	Bob Kuang Nursery	SPEAKS ENGLISH
Cai Zhang - 1	Zhang's Farm Inc.	1 of 2 active ranches SPEAKS ENGLISH
Cai Zhang - 2	Zhang's Farm Inc.	2 of 2 active ranches. Ted Zhang, Cai's brother, grows on this property. SPEAKS ENGLISH
Chengjiu Li	Chengjiu Li	
Han Qiang Kuang	Han Qiang Kuang Nursery	needs to sign auth. RP form
Hao Qin Chen - 1	Hao Qin Farm	1 of 2 active ranches
Hao Qin Chen - 2	Hao Qin Farm	2 of 2 active ranches. Yuan Ming Chen, Hao Qin's son, grows on this property.
Hung Quoc Nguyen	N & L Farm Inc.	
Jason Phan - 1	South Pacific Orchids Inc.	SPEAKS ENGLISH, needs auth. RP form for each operation
Jason Phan - 2	South Pacific Orchids Inc.	SPEAKS ENGLISH
Jian Guang Liang/ Xiao Teng Kuang	Jian Guang Liang Nursery	needs to sign auth. RP form
Jianbin Guo	Golden Fields Produce	
Joe Chen - 1	Joe Chen Nursery	1 of 2 active ranches, SPEAKS ENGLISH
Joe Chen - 2	Joe Chen Nursery	2 of 2 active ranches, SPEAKS ENGLISH
Julie Lee	A & M Farm	SPEAKS ENGLISH
Kawa Vong	Vong farms LLC	SPEAKS ENGLISH
Keith Lo	Keith Lo Nursery	
Mei Huan Huang	S & M Farms LLC	Shares well with Sonny Lo
Peter Chak	Peter Chak Nursery	SPEAKS ENGLISH
Ping Huang Cheng	Ping Huang Cheng Nursery	SPEAKS ENGLISH
Qiaohua Xie	FOUR SEASON FARM	
Qing Qiang Zhen	Qing Qiang Zhen Farm	
Rui Kuang	Rui Kuang Farm	
Ryan Cho/ Sandra Fang	VG Farms	SPEAKS ENGLISH
Shun Heung Kwong	Shun Heung Kwong Nursery	
Shun Yu Kuang	Shun Yu Kuang Nursery	
Sik Kwan Kwong	Kwong Nursery	
Sonny Lo	Sonny Lo Nursery	Shares well with Mei Huan Huang
Sung Wook Lee	Janong USA	SPEAKS ENGLISH
Tian Kai Kuang/ Yin Ying Mai	TKai Farm	
Tony Wong/ Mibau Wong	T&L flowers	Also under Mibau Wong. SPEAKS ENGLISH
Venh Tang	Tangs Farm	needs auth RP form under Kwong Samuel name
Wendy chan	WY Chan Nursery	SPEAKS ENGLISH
Xingguo Wang (George)	C & C Farm LLC	
Xu Hong Huang	Xu Hong Huang	
Yip Hing (Alan) Kwong	Kwong Nursery	
Zhou Ping Cai	Zhou Ping Cai	

4. Language Barriers – Monolingual Spanish, Chinese, Vietnamese, and other Asian Grower Communities



December 30, 2022

Alleged Violation

Based on Central Coast Water Board records to date, the above listed operator is allegedly in violation of Agricultural Order Monitoring and Reporting Program section E.4 for failing to submit a Surface Receiving Water Quality Trends Work Plan by July 1, 2022.

Who Must Submit a Surface Receiving Water Quality Trends Work Plan

The Agricultural Order requires that all dischargers enrolled in the Agricultural Order submit a Surface Receiving Water Quality Trends Work Plan either individually or through a third-party program that has been approved by the Central Coast Water Board's Executive Officer. Central Coast Water Quality Preservation, Inc. (Preservation, Inc.) is currently the only approved third-party program in the central coast region that can submit a Surface Receiving Water Quality Trends Work Plan on behalf of its members to comply with this requirement. According to information provided by Preservation, Inc. to the Central Coast Water Board, the above listed operator is not a member of Preservation, Inc. and therefore, the above listed operator is required to submit an individual Surface Receiving Water Quality Trends Work Plan for their operation.²

To learn more about Preservation, Inc.'s services, membership, and fees, please visit www.ccwqp.org or contact their support line at support@ccwqp.org or (831-240-9533).

How to Update or Correct Inaccurate Information

Within **21 days** of receiving this letter, notify Central Coast Water Board Irrigated Lands Program staff via email at AgNOI@waterboards.ca.gov or via phone at (805) 549-3148 of any of the following:

- The Surface Receiving Water Quality Trends Work Plan has been submitted.
- The operator contact information included in this letter is incorrect.³
- Justification why a Surface Receiving Water Quality Trends Work Plan is not applicable or required for the above listed operation.

In your electronic mail correspondence please include the following subject heading: "Surface Receiving Water Quality Trends Work Plan – [insert AW number]." If the Central Coast Water Board does not receive evidence that the Surface Receiving Water Quality Trends Work Plan was submitted or not required or that the contact information is incorrect, the Central Coast Water Board staff will assume that the violation cited and contact information included in this notice of violation are accurate.

How to Resolve the Alleged Violation

Immediately become a member of Preservation, Inc. or submit a complete individual Surface Receiving Water Quality Trends Work Plan for the above listed operation via

² In most cases individual growers will incur greater costs to conduct individual surface receiving water quality trends monitoring and reporting, than growers that are members of Preservation, Inc.

5. Gaps in Research Based Information for Unique Culturally Important Crops



5. Gaps in Research Based Information for Unique Culturally Important Crops



5. Gaps in Research Based Information for Unique Culturally Important Crops



5. Gaps in Research Based Information for Unique Culturally Important Crops



UCCE Outreach & Technical Assistance Efforts ILRP – TNA/INMP Reporting



Irrigation and Nutrient Management Plan (INMP) EZ Form

Preservation, Inc.


Please populate this form as completely as possible. You can answer questions and return later with the answers populated. Once you Submit your answers, though, you must contact Preservation, Inc. to make changes.

This form allows you to enter up to 5 parcel numbers (APNs), 5 crops, and 3 organic fertilizer applications per crop, but you cannot enter compost or other materials to improve soil properties and/or nitrogen removal through cover crop scavenging or by treatment methods. If you want the soil amendment/other materials credit or if you have more APNs, and/or crops to report, please use the Preservation, Inc. MS Excel INMP Template available on the [CCWQP INMP](#) page.

UCCE Outreach & Technical Assistance Efforts ILRP – TNA/INMP Reporting

[illegible]

UCCE Outreach & Technical Assistance Efforts ILRP – TNA/INMP Reporting



STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

TOOLS

- Upload EDD
- ✓ Check EDD
- 🔍 VVL Search Tool
- ✎ Edit Field Points
- 🔧 Other Tools
- \$ Funding Programs
- 📄 Update eNOI Forms
- + Add Program
- ? Guides / Resources

ZHOU PING CAI

[EDIT OPERATION INFORMATION](#) [PRINT OPERATION FORM](#) [ADD RANCH / FARM TO THIS OPERATION](#)

RANCH / FARM NAME	ADDRESS	CITY	IRRIGATED ACRES	TAILWATER ACRES	RANCH / FARM TIER
[EDIT RANCH INFO] ZHOU PING CAI	1538 GILMAN RD	GILROY	4	0	2

[\[EDIT COMPLIANCE INFO\]](#) [\[SUBMIT TNA REPORT\]](#)

UCCE Outreach & Technical Assistance Efforts ILRP – TNA/INMP Reporting

[TNA INSTRUCTIONS](#)

AGRICULTURAL REGULATORY PROGRAM - TOTAL NITROGEN APPLIED REPORT FORM

Reporting Year: 2021 Reporting Period: 1/1/2021 to 12/31/2021

SECTION I: GENERAL RANCH INFORMATION

Name of Operation:
Ranch / Farm Name:

Physical Ranch Acres Reporting: 4 Fallow Acres (If fallow entire reporting period)

Sum of Total Crop Acres (Calculated from Section IV) 0

The sum of crop acres plus fallow acres should equal or exceed the physical ranch acres reported. Verify all crops and acreage have been reported.

If ranch is a greenhouse, nursery, or hydroponic, select from the dropdown:
1b - No recycling occurs; all excess water infiltrates into the ground

APN(S) - MARK THE APNS THAT CORRESPOND TO ACREAGE REPORTED IN THIS FORM - [CHECK ALL](#)
☒ 841-18-026

SECTION II: NITROGEN APPLIED WITH IRRIGATION WATER (Include all sources and applications, e.g. leaching, runoff, backflush, operational spills, etc.)

Section II-A: Water Source(s):

Identify the primary source of irrigation water used during the reporting period.

Select one of these options if the irrigation water comes from a well, city, or surface water source:
Well / City Water

Select one of these options if the irrigation water comes from a recycled/reclaimed source:

Section II-B: Well / City Water / Surface Water

Average Nitrate Concentration in Well / City Water / Surface Water (mg/L): as Nitrate (NO₃)

To calculate the weighted average concentration if more than one sample from one or more sources of irrigation water was used, use the Excel tool.

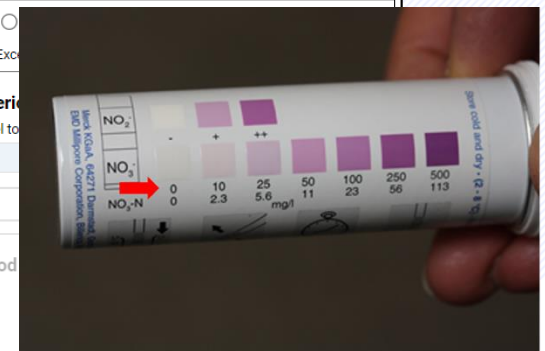
Estimated Total Volume of Well / City Water / Surface Water Applied to Entire Reporting Acres During Reporting Period

Do not include volume of agency-delivered purple pipe water applied. To convert from acre-feet or acre-inches to gallons, use the Excel tool.

Section II-C: Recycled / Reclaimed Water

Total Nitrogen Concentration in Recycled / Reclaimed Water (mg/L):

Estimated Total Volume of Recycled / Reclaimed Water Applied to Entire Reporting Acres During Reporting Period



UCCE Research Efforts: Asian Leafy Vegetables Nitrogen Crop Coefficients


Commodity	Product	Pack Type	# fields sampled	mean %DM	min %DM	max %DM	mean %N	min %N	max %N	mean coeff	min coeff	max coeff
Bok Choy, baby	Fresh Market	Carton	15	3.57	1.88	5.33	5.73	4.24	6.58	0.00209	0.00085	0.00344
Bok Choy, Full size	Fresh Market	Carton	12	4.75	3.90	5.39	3.78	2.76	4.36	0.00178	0.00148	0.00188
Celery	Fresh Market	Carton	16	4.99	3.57	6.64	2.19	0.99	3.03	0.00106	0.00052	0.00144
Chinese Celery	Fresh Market	Carton	15	7.12	6.16	8.59	4.24	2.48	5.65	0.00301	0.00161	0.00418
Gai Choy	Fresh Market	Carton	15	6.34	5.15	8.37	5.66	4.81	6.25	0.00360	0.00294	0.00523
Napa Cabbage	Fresh Market	Carton	12	5.00	4.49	5.90	3.67	2.51	4.73	0.00181	0.00148	0.00212
Tong Ho	Fresh Market	Carton	15	6.94	5.50	9.26	4.97	3.53	6.46	0.00344	0.00194	0.00553
Yam Leaves	Fresh Market	Carton	15	10.35	8.75	13.37	4.98	3.15	5.79	0.00510	0.00353	0.00607



UCCE Research Efforts: Asian Leafy Vegetables Nitrogen Crop Coefficients

Commodity	Product	Pack Type	# fields sampled	mean %DM	min %DM	max %DM	mean %N	min %N	max %N	mean coeff	min coeff	max coeff
Malabar Spinach												
A choy (celtuce)												
Pea tips												
Gailan												
Yu choy												
Ong choy												
Chayote tips												
Amaranth												





**Thank You
Any Questions?**

