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ADDENDUM A

QUESTIONNAIRE

Nutrition strategies to improve the application of a Vitamin A Food-Based Dietary Guideline by crèche caregivers.

Date of Interview	
Respondent Number	
Name of crèche	

Part A: General Information

Place a cross next to the applicable box and also provide information where applicable.

A.1 Background information on the caregivers

1. What is your age in years? Please indicate your date of birth?

D	M	Y

2. Please indicate your gender?

Male	1
Female	2

3. What is your highest educational level?

Nor formal education	1
Grade 1-7	2
Grade 8-11	3
Pass matric	4
Tertiary education	5
Other, specify	6

4. Indicate the number of years you have been taking care of the children at the crèche.

5. Where did you learn how to care for children?

Have done a preschool diploma	1
Trained by the department of Health	2
Trained by the owner of the crèche	3
Learned from other caregivers	4
Other, specify	5

FOR OFFICE USE

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V12



A.2 Background information of children

1. Indicate the number of children in the crèche.

Male	
Female	

V13

V14

2. The ages of children at the crèche range from to years old

V15

V16

3. How many hours per day do the children stay at the crèche? Please indicate as follows: The crèche starts from to

V17

V18

4. What meals excluding milk for babies are offered to children at the crèche?

<i>Meals given</i>	
Breakfast	
Morning snack	
Lunch	
Afternoon snack	
Other, specify	

V19

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V22

V23

Part B: Nutrition information

Mark the correct answer with an X, and also provide information where applicable.

B.1 Nutrition knowledge

1. Should children eat vegetables and fruit?

Yes	1
No	2
Sometimes	3

V24

2. Why is the consumption of vegetables and fruit encouraged during childhood?

<i>Reasons</i>	
Source of vitamins	1
Source of fiber	2
Source of minerals	3
Promote growth	4
Protects them from diseases	5
Other, specify	6

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V30

3. How much servings or portions of vegetables and fruit do you give the children to eat at crèche per day?

	<i>Fruit</i>	<i>Vegetable</i>
6 months		
1 year		
2 years		
3 years		
4 years		
5 years		
6 years		

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V42

V43

V44



4. What will happen if children do not eat vegetables and fruit?

V45

V46

V47

5. Why is vitamin A important for children?

Prevent growth faltering	1
Increase resistance to diseases	2
Prevent eye diseases and blindness	3
Decrease child mortality	4
Other, specify	5

V48

V49

V50

V51

V52

6. Which of the following locally available vegetables and fruit are rich in Vitamin A?

Muroho	1
Paw-paw	2
Mangoes	3
Yellow/Orange sweet potatoes	4
White sweet potatoes	5
Spinach	6
Litchis	7
Orange	8
Beetroot	9
Apple	10
Banana	11
Yellow peach	12
Pumpkin	13
Cabbage	14
Avocados	15
Carrots	16
Other, specify	17

V53

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V67

V68

V69

7. What kind of snacks do you give to the children at the crèche?

Fruit salad	1
Fruit, e.g. banana	2
Potato chips, e.g. cheese curls	3
Sweets	4
Biscuits, e.g. Marie	5
Sandwich	6
Other, specify	7

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8. Which of the vegetables below would be best to give to children at crèche if available?

Frozen	1
Fresh	2
Tinned	3

V78



B.2 Dietary diversification

1. What food combinations are usually given to children at breakfast?

Soft porridge and milk	1
Cornflakes and milk	2
Soft porridge, milk and fruit	3
Other, specify	4

V79

2. What kind of foods do you give children for lunch?

Porridge and meat or fish	1
Porridge and muroho (traditional vegetable)	2
Porridge and vegetables	3
Porridge and soup	4
Rice and soup	5
Rice and meat	6
Other, specify	7

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V82
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V84
V85
V86

3. How often do you give vegetables to the children?

Once per week	1
2 X per week	2
3 X per week	3
4 X per week	4
Daily	5

V87

4. What vegetables did you prepare for children in the last five days?

Type of vegetable	Raw	Cooked
Pumpkin	1	11
Carrots	2	12
Yellow/Orange sweet potatoes	3	13
White sweet potatoes	4	14
Cabbage	5	15
Lettuce	6	16
Spinach	7	17
Butternut	8	18
Muroho	9	19
Other, specify	10	20

V88 <input type="checkbox"/>	V89 <input type="checkbox"/>
V90 <input type="checkbox"/>	V91 <input type="checkbox"/>
V92 <input type="checkbox"/>	V93 <input type="checkbox"/>
V94 <input type="checkbox"/>	V95 <input type="checkbox"/>
V96 <input type="checkbox"/>	V97 <input type="checkbox"/>
V98 <input type="checkbox"/>	V99 <input type="checkbox"/>
V100 <input type="checkbox"/>	V101 <input type="checkbox"/>
V102 <input type="checkbox"/>	V103 <input type="checkbox"/>
V104 <input type="checkbox"/>	V105 <input type="checkbox"/>
V106 <input type="checkbox"/>	V107 <input type="checkbox"/>

5. Do the children like the vegetables that are prepared at crèche?

Yes	1
No	2
Sometimes	3

V108



6. Why do you say so?

They eat all the vegetables given to them and they sometimes ask for some more	1
They eat the other food and leave vegetables on the plate	2
It depends on how the vegetable is cooked	3
Other, specify	4

V109

V110

V111

V112

7. If yes, which vegetables do they like to eat?

<i>Types of vegetables they like</i>	
Spinach	1
Cabbage	2
Yellow/Orange sweet potato	3
White sweet potato	4
Green beans	5
Pumpkin	6
Pumpkin leaves	7
Imifino (Muroho)	8
Butternut	9
Carrots	10
Other, specify	11

V113

V114

V115

V11

V117

V118

V119

V120

V121

V122

V123

8. Which fruit did you give to children at crèche in the last five days?

<i>Types of fruit given</i>	
Paw-paw	1
Orange	2
Banana	3
Apple	4
Mango	5
Yellow peach	6
White peach	7
Guava	8
Watermelon	9
Avocado	10
Other, specify	11

V124

V125

V126

V127

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V130

V131

V132

V133

V134

9. Which drinks besides water do you give to children at crèche?

<i>Drinks that are given</i>	
Fizzy, e.g. coke	1
Milk	2
Mango juice	3
Apple juice	4
Orange juice	5
Tea/coffee	6
Imitation juice, e.g. Oros	7
Other, specify	8

V135

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V141

V142



Part C: Availability

Place a cross next to the applicable box and also provide information where applicable.

C.1 Production

1. Do you have a vegetable garden in the crèche?

Yes	1
No	2

V143

2. If no, why? Give reason/s.

<i>Reasons for not having a garden</i>	
No space	1
No water	2
Don't know how to make a garden	3
No interest	4
Prefer to buy	5
No fencing	6
Don't cook vegetables	7
No one to take care of the garden	8
Don't know which vegetables to plant	9
Don't know how to care for them	10
Other, specify	11

V144

V145

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V150

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V152

V153

V154

3. If yes, which vegetables are you planting?

Cucurbits	1
Spinach	2
Wild spinach	3
Cabbage	4
Yellow/Orange sweet potatoes	5
White sweet potatoes	6
Muxe	7
Green beans	8
Carrots	9
Pumpkin	10
Other, specify	11

V155

V156

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V161

V162

V163

V164

V165

4. Are there fruit trees in the yard of the crèche?

Yes	1
No	2

V166



5. If yes, which trees are there?

Naartjie	1
Mango	2
Banana	3
Orange	4
Litchi	5
Paw-paw	6
Avocado	7
Guava	8
Yellow peaches	9
Other, specify	10

V167

V168

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V173

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V176

C.2 Gathering

1. Are there locally available indigenous vegetables that you gather and prepare for children?

Yes	1
No	2

V177

2. If yes, which are they?

Dzaluma	1
Amaranth	2
Blackjack	3
Murudi	4
Delele	5
Imifino (Muroho)	6
Muxe	7
Other, specify	8

V178

V179

V180

V181

V182

V183

V184

V185

3. Where do you get wild vegetables when available?

Backyard	1
Bush	2
Field	3
Supermarket	4
Open market	5

V186

V187

V188

V189

V190

4. Do children eat wild vegetables at crèche when on the menu?

Yes	1
No	2
Sometimes	3

V191

5. If no, why? Give a reason?

They just refuse	1
They say the taste is not good	2
Other, specify	3

V192

V193

V194



6. Ho often do you give wild vegetables to children at the crèche?

Once per week	1
2 X per week	2
3 X per week	3
4 X per week	4
Daily	5

V195

7. Are there locally available wild fruit that you give to children?

Yes	1
No	2
Sometimes	3

V196

8. If yes, name them.

<i>Name of fruit</i>	
Nombelo	1
Thaladzi	2
Mahuyu	3
Mbuyu	4
Mavhungo	5
Movha	6
Other, specify	7

V198
V198
V199
V200
V201
V202
V203

9. How do you gather these fruits?

From the bush	1
At home	2
Other, specify	3

V204
V205
V206

Part D: Menu planning and food preparation

1. How do you decide what to give to the children?

Follow a written menu	1
The manager decides	2
The owner of the crèche decides	3
The cooks decide	4
The dept of health provide menu	5
Other, specify	6

V207

2. Who buys the food that you prepare for the children at crèche?

The cooks	1
The manager	2
The owner of the crèche	3
Other, specify	4

V208

3. Did you receive any training on menu planning and meal preparation?

Yes	1
No	2

V209



4. If yes, who trained you?

Attended workshops	1
Went to a cooking school	2
Taught by other cooks	3
Other, specify	4

V210

5. Do you follow written recipes when preparing meals for children?

Yes	1
No	2

V211

6. How do you cook most of your vegetables?

Fry	1
Steam	2
Boil	3
Other, specify	4

V212

V213

V214

V215

7. What do you add to vegetables when you cook them?

Bicarbonate of soda	1
Salt	2
Curry powder	3
Oil	4
Margarine	5
Peanut butter	6
Sugar	7
Other, specify	8

V216

V217

V218

V219

V220

V221

V222

V223

8. After cooking vegetables, what do you do with the cooking water?

Discard	1
Use in soups	2
Add to children's porridge	3
None is left	4
Other, specify	5

V224

V225

V226

V227

V228

Part E: Storage and preservation

1. Where do you buy vegetables and fruit?

Local market	1
Supermarket	2
Use own produce	3

V229

2. How often do you buy vegetables and fruit?

Every day	1
Every second day	2
Once a week	3
Other, specify	4

V230



3. When you buy in bulk how do you store surplus?

In cool place	1
In refrigerator	2
In racks	3
Dry and store	4
Freeze	5
Other, specify	6

V231

V232

V233

V234

V235

V236

4. Do you preserve vegetables and fruit when plentiful?

Yes	1
No	2
Sometimes	3

V237

5. If yes, how do you preserve them?

Dry	1
Freeze	2
Bottle	3
Other, specify	4

V238

V239

V240

V241

6. Name the fruits and vegetables that you preserve and specify the method you use.

<i>Fruit/Vegetable</i>		<i>Method</i>	
Mango	1		8
Spinach	2		9
Cabbage	3		10
Wild spinach	4		11
Sweet potato	5		12
Banana	6		13
Other, specify	7		14

V242

V244

V256

V258

V260

V062

V264

V243

V255

V257

V259

V261

V253

V265

7. How do you store leftovers?

Freeze	1
Refrigerate in containers	2
In containers in dry place	3
Throw away	4
Other, specify	5

V266

V267

V268

V269

V270



ADDENDUM B

OBSERVATION CHECKLIST SHEET

TO BE OBSERVED	YES	NO	OTHER INFORMATION (SPECIFY)
1. Availability of vegetables and fruit			
1.1 Food gardens			
<ul style="list-style-type: none"> • Available vegetables and fruits <ul style="list-style-type: none"> - Spinach - Sweet potatoes - Butternut - Carrots - Mango trees - Paw-paw trees 			
1.2 Gathering			
<ul style="list-style-type: none"> • Food gathered <ul style="list-style-type: none"> - Amaranth (vowa) - Delele - Mushidzhi - Tshiphaswi - Muxe 			
2. Utilisation of vegetables and fruit			
2.1 Storage			
<ul style="list-style-type: none"> • Freezer • Vegetable racks • Cold storage • Cupboards • Containers • Refrigerator 			
2.2 Preservation			
<ul style="list-style-type: none"> • Freezing • Drying 			
2.3 Preparation techniques			
<ul style="list-style-type: none"> • Washing • Peeling • Soaking • Cooking methods <ul style="list-style-type: none"> - Boiling - Steaming - Frying 			
3. Menu planning			
<ul style="list-style-type: none"> • Written menus • Is there diversity in food included in the menus? • Are the menus balanced • Do menus include vitamin A vegetables and fruit? 			

ADDENDUM C

GAME RULES

1. All caregivers can participate
2. There can be 3-4 groups with at least two persons per group.
3. Each group choose a colour on the matt with 4 different colours
4. All member of the group stand on their coloured DOT
5. A question is asked and once the correct answer is given, the members remain inside the cycle. But if the answer is wrong the member of the group who got the wrong answer will step one foot out of the DOT/cycle
 - The person only goes out of the matt if the group has answered two questions wrongly in a row
 - If the group get the first questions wrongly and the next one correctly, the member with one foot out of the DOT goes back into the DOT
6. The first group to answer all questions correctly and all or the majority of its members remain in the dot on the matt WINS the game and receive a price (a sweet-potato recipe book)

ADDENDUM D

THE GAME SCORE SHEET AND THE QUESTIONS ASKED

NAME OF CRECHE:

GROUPS	SCORES					TOTAL
	1	1	1	1	1	[5]
A						
B						
C						

GAME QUESTIONS:

- Give the colour of vitamin A-rich vegetables
- Name the vegetables rich in vitamin A(including indigenous vegetables)
- Name the fruits that are rich in vitamin A
- Give the signs and symptoms of vitamin A deficiency
- Explain how you would prepare your vegetables before cooking, also indicate what should be avoided while cooking vegetables to prevent nutrient loss



ADDENDUM E

ARC GARDENING MANUALS FOR VITAMIN A-RICH VEGETABLES (Obtained from ARC-Roodeplaat)

1. MANUAL FOR GROWING SPINACH

5: GROW SPINACH 198/97 10:37 AM Page 1

EDA TRUST

LET'S GROW SPINACH

	J	F	M	A	M	J	J	A	S	O	N	D
SOW		X	X	X	X	X						
TRANSPLANT			X	X	X	X	X					
HARVEST		X	X	X	X	X	X	X	X	X	X	X

Cultivar to use: Ford Hook

8 Space the seedlings in a row 20 - 25 cm apart ± one Mahewu/beet carton

9 Water regularly: First week - twice a day
: Week two - once a day
: Week three and on - three times a week
Close the furrows when the water is two thirds down the furrow

10 Apply top dressing (LAN) at weeks two and five after transplanting - work lightly into the soil

11 Remove all the weeds, this will ensure a good crop - no competition for the crop

1 Soil preparation: deep work soil with fork

2 Fertilizer: one hand/1 m²

2:3:2

1 m²

1 m

or

Kraal manure; four handfuls/1 m

3 Apply fertilizer broadly over the area

4 Work the fertilizer into the soil with a fork

12 Combat pests that damage crops

Potato ladybird

Oil beetle

Ballworm

cutworm

Nematodes

13 Use registered products or alternative organic remedies and spray once pests are noticed

14 Harvest: pick leaves weekly

5 Rake fine, remove large clods and stones

6 Prepare the furrows 30 - 50cm apart ± one forearm

30 - 50 cm

7 Plant seedlings at watermark in furrow

15 Sell your produce to your local market

Sell your produce yourself

16 Growing spinach provides: community upliftment, jobs, food, security, income.

spinach is: healthy, wholesome and nutritious. Enjoy yourself and grow!


* Developed in co-operation with the ARC-Roodeplaat Vegetable and Ornamental Plant Institute and the EDA TRUST

ARC-Roodeplaat Vegetable and Ornamental Plant Institute, Private Box 3123 Pretoria

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2. MANUAL FOR GROWING CARROTS



EDA TRUST
ARC • LNR

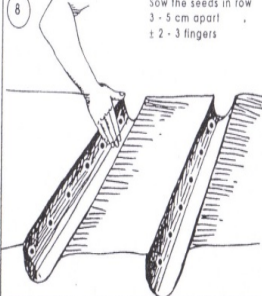
LET'S GROW CARROTS

Cultivars to use: Kaapse Mark
From sow to harvest: 60-90 days

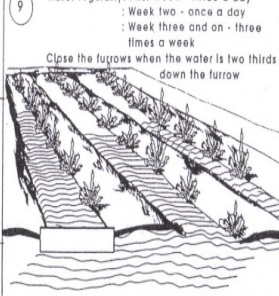
	J	F	M	A	M	J	J	A	S	O	N	D
SOW								X	X	X		
HARVEST		X	X								X	X

SUMMER & SPRING
 WINTER & AUTUMN
 SUMMER & SPRING
 WINTER & AUTUMN


8 Sow the seeds in row 3 - 5 cm apart! ± 2 - 3 fingers



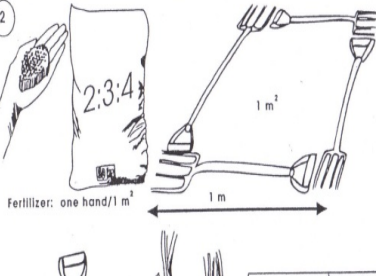
9 Water regularly: first week - twice a day
: Week two - once a day
: Week three and on - three times a week
Close the furrows when the water is two thirds down the furrow



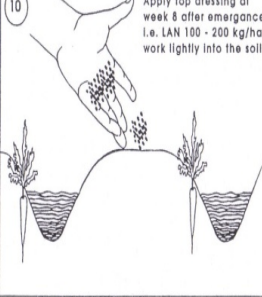
1 Soil preparation: deep work soil with fork - the soil must be very fine for carrot production



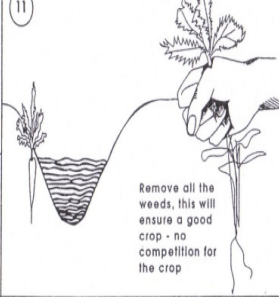
2 Fertilizer: one hand/1 m²



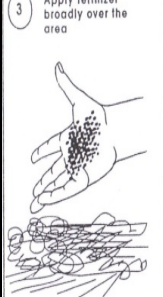
10 Apply top dressing at week 8 after emergence i.e. LAN 100 - 200 kg/ha work lightly into the soil



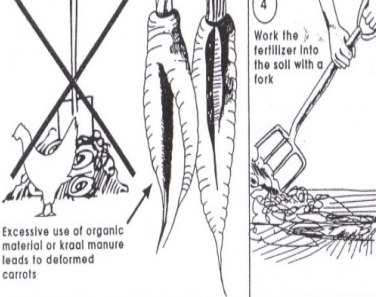
11 Remove all the weeds, this will ensure a good crop - no competition for the crop



3 Apply fertilizer broadly over the area

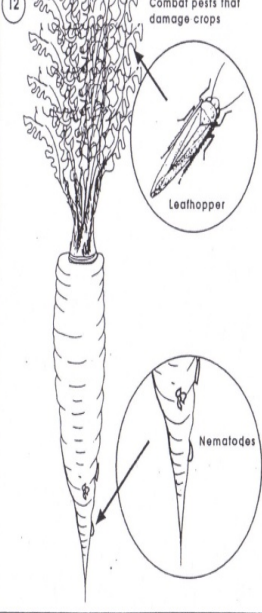


4 Work the fertilizer into the soil with a fork



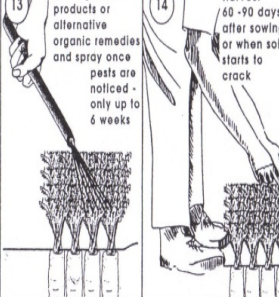
Excessive use of organic material or kraal manure leads to deformed carrots

12 Combat pests that damage crops

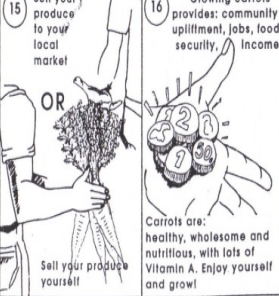


Leafhopper
Nematodes

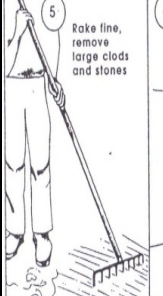
13 Use registered products or alternative organic remedies and spray once pests are noticed - only up to 6 weeks



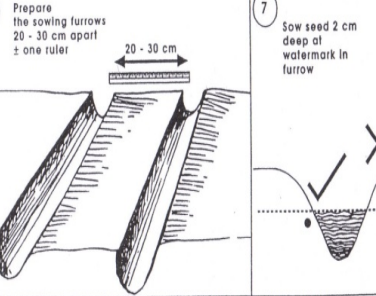
14 Harvest 60-90 days after sowing or when soil starts to crack



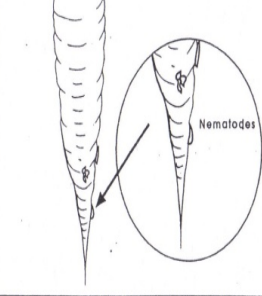
5 Rake fine, remove large clods and stones



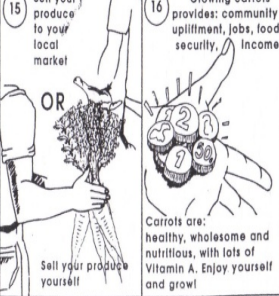
6 Prepare the sowing furrows 20 - 30 cm apart ± one ruler



7 Sow seed 2 cm deep at watermark in furrow




15 Sell your produce to your local market
OR
Sell your produce yourself



16 Growing carrots provides: community upliftment, jobs, food, security, income.


Carrots are: healthy, wholesome and nutritious, with lots of Vitamin A. Enjoy yourself and grow!



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3. MANUAL FOR GROWING SWEET POTATOES

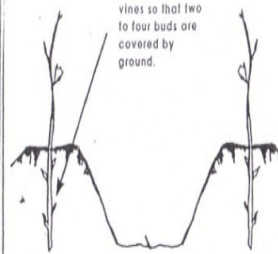


LET'S GROW SWEET POTATOES

	J	F	M	A	M	J	J	A	S	O	N	D
PLANT										X	X	
HARVEST			X	X	X							


Frost-free areas can plant from September to February.

7



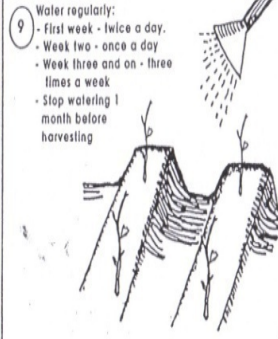
Plant the cut vines so that two to four buds are covered by ground.

8



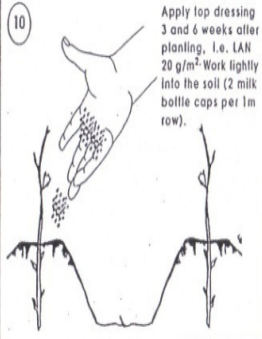
magazine length) apart on top of the ridges, in rows.

9



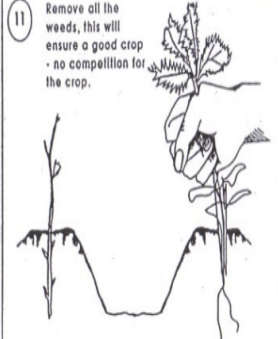
Water regularly:
- First week - twice a day.
- Week two - once a day
- Week three and on - three times a week
- Stop watering 1 month before harvesting

10



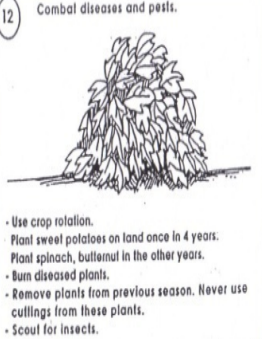
Apply top dressing 3 and 6 weeks after planting, i.e. IAN 20 g/m². Work lightly into the soil (2 milk bottle caps per 1m row).

11



Remove all the weeds, this will ensure a good crop - no competition for the crop.

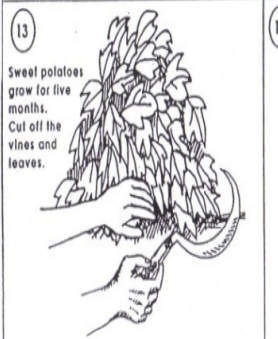
12



Combat diseases and pests.


- Use crop rotation. Plant sweet potatoes on land once in 4 years. Plant spinach, butterbean in the other years.
- Burn diseased plants.
- Remove plants from previous season. Never use cuttings from these plants.
- Scout for insects.

13




Sweet potatoes grow for five months. Cut off the vines and leaves.

14



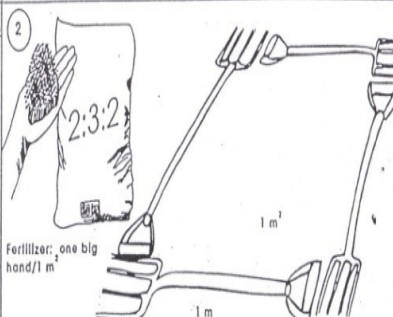
Carefully dig out the sweet potatoes.

1




Soil preparation: deep work soil with fork - the soil must be fine for sweet potatoe production.

2



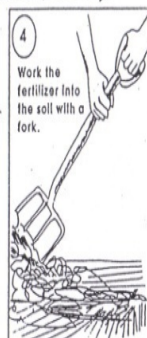
Fertilizer: one big hand/1 m²

3




Apply fertilizer broadly over the area.

4




Work the fertilizer into the soil with a fork.

5




Rake fine, remove large clods and stones.

6



Wait one month. Buy healthy vines from a grower every planting season. Prepare the ridges with centres 1m apart (1 one fork length) and 30 cm high, 30cm wide.

7



Cut the vines 200 - 300mm long (= a magazine's length).

Developed in co-operation with the ARC, Regional Vegetable and Ornamental Plant Institute and the LDA TRUST

ARC - Regional Vegetable and Ornamental Plant Institute, Private Bag X273 Pretoria

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4. MANUAL FOR GROWING CUCURBITS

LET'S GROW CUCURBITS

	J	F	M	A	M	J	J	A	S	O	N	D
SOW								X	X	X	X	
TRANSPLANT									X	X	X	X
HARVEST	X	X	X	X	X							

Length growth season: Squashes - 60 to 75 days
Squashes (Butternut) - 90 to 100 days
Muskmelons - 90 to 110 days
Winter Muskmelons - 105 to 125 days
Watermelon - 80 to 95 days
Pumpkin - 120 to 150 days

7 Space the seedlings as follows:
Pumpkins - 50 cm, Marrows - 50 cm, Squashes (Butternut) - 50 cm, Squashes (Little Gem) - 30 cm, Cucumber 30 cm, Watermelons - 50 cm, Muskmelon - 300 cm

8 Water regularly: First week - twice a day
: Week two - once a day
: Week three and on - three times a week
Close the furrows when the water is two thirds down the furrow

1 Soil preparation: deep work soil with fork

2 Fertilizer: one hand/1 m²

2:3:2

or

Kraal manure; four handfuls/1 m²

9 Apply top dressing at weeks two and five after transplanting i.e. LAN and work lightly into the soil

10 Remove all the weeds, this will ensure a good crop - no competition for the crop
For pumpkins, watermelons and muskmelons allow only one flower per vine to ensure good quality product

3 Apply fertilizer broadly over the area

4 Work the fertilizer into the soil with a fork

11 Combat pests that damage crops

- Pickworm on fruit (cucumbers)
- Spotted cucumber beetle
- Striped cucumber beetle
- Pumpkin fly

12 Use registered products or alternative organic remedies and spray once pests

5 Rake fine, remove large clods and stones

6 Prepare the furrows as follows:
Pumpkins: 2,1 m - 2,7 m
Marrows: 1,2 m - 1,5 m
Squashes (Butternut): 1,2 m - 1,8 m
Squashes (Little Gem): 1,2 m - 1,8 m
Cucumbers: 1,2 m - 1,5 m
Watermelons: 1,8 m - 2,0 m
Muskmelons: 1,5 m - 2,0 m
(1 m = ± one fork length)

13 Harvest produce

14 Sell your produce to your local market!
OR
Sell your produce yourself

15 Growing eggplant provides: community upliftment, jobs, food, security, income.

Cucurbits are: healthy, wholesome and nutritious. Enjoy yourself and grow!

ADDENDUM F

RECIPES WITH VITAMIN A (Obtained from ARC-Roodeplaat)

MIXED POTATO AND SPINACH	
INGREDIENTS:	METHOD:
5 medium potatoes 1 bunch of spinach 1 small onion 1 medium tomato 1 dessertspoon salt ½ cup cooking oil ½ cup water	<ol style="list-style-type: none"> 1. Peel potatoes and onion. Chop spinach, tomato and potato 2. Fry onion in oil and curry powder 3. Add chopped potatoes, spinach, tomato, salt and water 4. Close the pot and decrease fire 5. Cook for 20 minutes
MIXED POTATO AND CARROTS	
INGREDIENTS:	METHOD:
5 medium potatoes 1 big onion 2 small tomato 1 dessertspoon salt ½ cup cooking oil ½ cup water 6 big carrots	<ol style="list-style-type: none"> 1. Peel carrots and potatoes. Chop onion, carrots, tomato and potato 2. Fry onion in oil 3. Add chopped potatoes, carrots, tomato, salt and water 4. Close the pot and decrease fire 5. Cook for 20 minutes
POTATO AND CARROTS MASH	
INGREDIENTS:	METHOD:
3 big potatoes 2 dessertspoon margarine 1 teaspoon salt 180ml water 3 big carrots	<ol style="list-style-type: none"> 1. Peel and chop carrots and potatoes. 2. Boil carrots and potatoes until soft. Add chopped potatoes, carrots, tomato, salt and water 3. Mash together in a bowl and add margarine and salt 4. Cook for 10 minutes
CABBAGE WITH CARROTS	
INGREDIENTS:	METHOD:
½ cabbage 1 bunch carrots 1 small onion 1 small tomato 1 teaspoon salt ½ cup cooking oil ½ cup water 6 big carrots	<ol style="list-style-type: none"> 1. Chop onion, carrots, tomato and cabbage 2. Fry onion in oil 3. Add carrots, tomato and cabbage 4. Add salt and water and mix together 5. Close the pot and decrease fire 6. Cook for 20 minutes
GREEN BEANS AND CARROTS	
INGREDIENTS:	METHOD:
1 medium bowl green beans 1 medium bowl chopped carrots 1 small onion 2 small tomato 1 teaspoon salt ½ cup cooking oil 1 cup water	<ol style="list-style-type: none"> 1. Chop beans, onion, carrots and tomato 2. Fry onion in oil 3. Add carrots and beans the tomatoes, salt and water 4. Cook for 20 minutes



POTATO AND CARROT STEW	
INGREDIENTS:	METHOD:
3 medium potatoes 1 medium onion 1½ cube knorox 3 teaspoon salt ½ cup cooking oil 1½ cup water 6 medium carrots	1. Fry onion in oil 2. Add chopped potatoes and carrots and cook for 3 minutes 3. Add water and cook for 45 minutes 4. Add knorox and salt 5. Boil for 3 minutes
SWEET POTATO AND POTATO STEW	
INGREDIENTS:	METHOD:
2 medium potatoes 4 medium orange fleshed sweet potatoes Small onion 2 cubes knorrox 1 teaspoon salt 3 ½ dessertspoon oil ½ cup cooking oil 1½ cup water	1. Fry onion in oil 2. Add sweet potatoes and potato 3. After 5 minutes add water and boil for 40 minutes. 4. Add knorrox and salt 5. Cook for 3 minutes
ORANGE FLESHED SWEET POTATOES	
INGREDIENTS:	METHOD:
6 sweet potatoes 1 medium onion 2 cubes knorrox ½ teaspoon salt 5 tablespoon oil 1½ cup water	1. Fry onion in oil 2. Add chopped sweet potatoes 3. After 3 minutes add water and boil for 45 minutes 4. Add knorrox and salt 5. Boil for 5 minutes
CARROTS SALAD	
INGREDIENTS:	METHOD:
3 big carrots 1 medium onion ½ cube knorrox 4 teaspoons oil	1. Grate carrots 2. Fry onion in oil 3. Add carrots and stir well all the time 4. After 5 minutes add in knorrox 5. Boil for 2 minutes
CARROTS STEW	
INGREDIENTS:	METHOD:
5 big carrots 1 medium onion 1 cube knorrox 1 teaspoon salt 5 tablespoons oil 270ml water	1. Fry onion 2. Add chopped carrots 3. Add water and salt 5 minutes 4. Boil for 40 minutes 5. Add knorrox cube 6. Boil for 10 minutes
ORANGE FLESHED SWEET POTATO SOUP	
INGREDIENTS:	METHOD:
4 leeks 1 onion 65g margarine 1 cube chicken stock 600g orange fleshed sweet potatoes 750ml hot water 3ml salt 3ml turmeric 1 cup milk 50ml cream	1. Fry onion and leeks in margarine 2. Boil sweet potatoes then peel and slice 3. Dissolve stock in hot water 4. Add sweet potato and salt and cook for 25 minutes 5. Puree by pressing through a sieve 6. Add milk, turmeric and cream




CURRY ORANGE SWEETPOTATO	
INGREDIENTS:	METHOD:
4 orange fleshed sweetpotatoes 2 onion 25ml margarine 2 ½ teaspoon curry powder 1 granny smith apple 2 ½ teaspoon apricot jam 2 ½ teaspoons lemon juice 1ml salt 250ml water 25ml sugar	<ol style="list-style-type: none">1. Fry onion in oil2. Add chopped potatoes and carrots and cook for 3 minutes3. Add water and cook for 45 minutes4. Add knorox and salt5. Boil for 3 minutes
SWEET POTATO SCONES	
INGREDIENTS:	METHOD:
250g cake flour 4 teaspoons baking powder 2 eggs 200g margarine 1 teaspoon salt 2½ teaspoons sugar 250ml cooked orange-fleshed sweet potato	<ol style="list-style-type: none">1. Sift dry ingredients2. Rub in margarine3. Beat eggs and sweet potato4. Mix all ingredients to form dough5. Put spoonfuls in greased patty pans6. Bake for 20 minutes at 200°
FRIED ORANGE-FLESHED SWEETPOTATO LEAVES	
INGREDIENTS:	METHOD:
4 handfuls sweet potato leaves 2 tablespoons oil Salt to taste 1 medium onion 3 medium sliced tomatoes	<ol style="list-style-type: none">1. Wash and shred leaves2. Fry onion in oil3. Add tomato and fry for 204. Add leaves and salt5. Cook for 10 minutes



ADDENDUM G

PERMISSION LETTERS FROM THE DEPARTMENT OF EDUCATION


Limpopo
Provincial Government
DEPARTMENT OF EDUCATION
TSHILAMBA CIRCUIT

Private Bag x 1195
Mutale
0956
Tel: 015 967 0086


Ref: 2/5/5/1
Enq: Nthangeni S.J

22.05.2007

TO ALL PRE-SCHOOL PRINCIPALS: TSHILAMBA CIRCUIT

PERMISSION TO CONDUCT RESEARCH: KWINDA P.C

1. The above stated matter refers.
2. Mrs Kwinda P.C has requested permission to conduct research on "Nutrition strategies to improve the application of a Vitamin A Food Based Dietary Guidelines by Crèche Caregivers".
3. The circuit hereby grants her permission to go ahead as long as this will not disturb the smooth running of our programs.
4. Pre-schools are therefore humbly requested to co-operate as this may benefit them and the whole of Limpopo Department of Education.


CIRCUIT MANAGER: TSHILAMBA

DEPARTMENT OF EDUCATION



Limpopo
Provincial Government

DEPARTMENT OF EDUCATION
TSHILAMBA CIRCUIT

Private Bag x 1195
Mutale
0956
Tel: 015 967 0086

Ref: 2/5/5/1
Enq: Nthangeni S.J

22.05.2007

Mrs P.C. Kwinda
P. O. Box 534
Makonde
0984

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN OUR
PRE-SCHOOLS**

1. The above matter refers.
2. Kindly note that you have been granted permission to conduct research at our pre – schools.
3. We wish you well and only request you not to disturb the smooth running of our normal programs.


CIRCUIT MANAGER: TSHILAMBA

DEPARTMENT OF EDUCATION



ADDENDUM H

STATISTICS COMPARING PHASE ONE (PRE) AND PHASE THREE (POST)

PROG2
T06180 HHK9030 WH429560
Pre- and Post- responses - meals offered

The FREQ Procedure

Frequency	Table of Pre20 by Post20			
	Pre20(Morning snack)	Post20(Post20)		
		NO	YES	Total
NO	64	6	70	
YES	0	30	30	
Total	64	36	100	

Statistics for Table of Pre20 by Post20

McNemar's Test	
Statistic (S)	6
DF	1
Pr > S	0.0143

Simple Kappa Coefficient	
Kappa	0.8649
ASE	0.053
95% Lower Conf Limit	0.761
95% Upper Conf Limit	0.9687

Sample Size = 100

Frequency	Table of Pre22 by Post22			
	Pre22(Afternoon snack)	Post22(Post22)		
		NO	YES	Total
NO	15	33	48	
YES	1	51	52	
Total	16	84	100	

Statistics for Table of Pre22 by Post22

McNemar's Test	
Statistic (S)	30.1176
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.301
ASE	0.0732
95% Lower Conf Limit	0.1575
95% Upper Conf Limit	0.4445

Sample Size = 100



PROG2
Charlotte Kwinda T06180 HHK9030 WH429560
What happens if children do not eat fruit & vegetables

The FREQ Procedure

Frequency	Table of PREGROWTH by POST GROWTH			
	PREGROWTH(GROWTH WILL BE AFFECTED)	POSTGROWTH		
		NO	YES	Total
	NO	50	6	56
	YES	27	17	44
	Total	77	23	100

Statistics for Table of PREGROWTH by POSTGROWTH

McNemar's Test	
DF	1
Pr > S	0.0003

Simple Kappa Coefficient	
Kappa	0.2943
ASE	0.0882
95% Lower Conf Limit	0.1214
95% Upper Conf Limit	0.4672

Sample Size = 100

Frequency	Table of PRENUTRIENT by POST NUTRIENT			
	PRENUTRIENT(NUTRIENT DEFICIENCIES)	POSTNUTRIENT		
		NO	YES	Total
	NO	12	54	66
	YES	7	27	34
	Total	19	81	100

Statistics for Table of PRENUTRIENT by POSTNUTRIENT

McNemar's Test	
Statistic (S)	36.2131
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	-0.018
ASE	0.063
95% Lower Conf Limit	-0.1415
95% Upper Conf Limit	0.1055

Sample Size = 100

Frequency	Table of PREDISEASE by POSTDISEASE		
	PREDISEASE(DISEASE/HEALTH ISSUES)	POSTDISEASE	
		YES	Total
	NO	6	6
	YES	94	94
	Total	100	100



PRE-CF. POST- HOW OFTEN GIVE VEGETABLES

The FREQ Procedure

Frequency Expected Cell Chi-Square	Table of PPRE87 by PPOST87			
	PPRE87(HOW OFTEN DO YOU GIVE VEGETABLES)	PPOST87		
		3OR4	DAILY	Total
	1OR2	20 17.98 0.227	69 71.02 0.0575	89
	DAILY	0 2.0202 2.0202	10 7.9798 0.5114	10
	Total	20	79	99
Frequency Missing = 1				

PRE-CF. POST- USE OWN FRUIT & VEGETABLES

The FREQ Procedure

Frequency	Table of PREOWN by POSTOWN			
	PREOWN(USE OWN PRODUCE)	POSTOWN		
		NO	YES	Total
	NO	49	40	89
	YES	0	11	11
	Total	49	51	100

Statistics for Table of PREOWN by POSTOWN

McNemar's Test	
Statistic (S)	40
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.2123
ASE	0.0594
95% Lower Conf Limit	0.0958
95% Upper Conf Limit	0.3288

Sample Size = 100

PRE-CF. POST- ADDED TO VEGETABLES WHEN COOKING

The FREQ Procedure

Frequency	Table of Pre216 by Post216		
	Pre216(ADD BICARBONATE OF SODA)	Post216(Post216)	
		NO	Total
	NO	80	80
	YES	20	20
	Total	100	100

Frequency	Table of Pre219 by Post219		
	Pre219(ADD OIL)	Post219(Post219)	
		YES	Total
	YES	100	100

Frequency	Table of Pre220 by Post220		
	Pre220(ADD MARGARINE)	Post220(Post220)	
		NO	Total
	NO	96	96
	YES	4	4



Frequency	Table of Pre221 by Post221			
	Pre221(ADD PEANUT BUTTER)	Post221(Post221)		
		NO	YES	Total
	NO	76	10	86
	YES	9	5	14
	Total	85	15	100

Statistics for Table of Pre221 by Post221

McNemar's Test	
Statistic (S)	0.0526
DF	1
Pr > S	0.8185

Simple Kappa Coefficient	
Kappa	0.2339
ASE	0.126
95% Lower Conf Limit	-0.013
95% Upper Conf Limit	0.4808

Sample Size = 100

PRE-CF. POST- Vitamin A rich fruit & vegetables

The FREQ Procedure

Frequency	Table of Pre54 by Post54			
	Pre54(Pre54)	Post54(Post54)		
		NO	YES	Total
	NO	5	29	34
	YES	3	63	66
	Total	8	92	100

Statistics for Table of Pre54 by Post54

McNemar's Test	
Statistic (S)	21.125
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.1247
ASE	0.0798
95% Lower Conf Limit	-0.0317
95% Upper Conf Limit	0.2812

Sample Size = 100

Frequency	Table of Pre55 by Post55		
	Pre55(Pre55)	Post55(Post55)	
		YES	Total
	NO	63	63
	YES	37	37
	Total	100	100

Frequency	Table of Pre56 by Post56		
	Pre56(Pre56)	Post56(Post56)	
		YES	Total
	NO	64	64
	YES	36	36
	Total	100	100

Frequency	Table of Pre57 by Post57			
	Pre57(Pre57)	Post57(Post57)		
		NO	YES	Total
	NO	0	71	71
	YES	1	28	29
	Total	1	99	100



Statistics for Table of Pre57 by Post57

McNemar's Test	
Statistic (S)	68.0556
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	-0.0201
ASE	0.0201
95% Lower Conf Limit	-0.0596
95% Upper Conf Limit	0.0193
Sample Size = 100	

Frequency		Table of Pre59 by Post59			
		Pre59(Pre59)	Post59(Post59)		
			NO	YES	Total
		NO	1	17	18
		YES	4	78	82
		Total	5	95	100

Statistics for Table of Pre59 by Post59

McNemar's Test	
Statistic (S)	8.0476
DF	1
Pr > S	0.0046

Simple Kappa Coefficient	
Kappa	0.0094
ASE	0.0821
95% Lower Conf Limit	-0.1515
95% Upper Conf Limit	0.1704
Sample Size = 100	

Frequency		Table of Pre65 by Post65		
		Pre65(Pre65)	Post65(Post65)	
			YES	Total
		NO	90	90
		YES	10	10
		Total	100	100

Frequency		Table of Pre66 by Post66		
		Pre66(Pre66)	Post66(Post66)	
			YES	Total
		NO	57	57
		YES	43	43
		Total	100	100

Frequency		Table of Pre68 by Post68		
		Pre68(Pre68)	Post68(Post68)	
			YES	Total
		NO	59	59
		YES	41	41
		Total	100	100

Frequency		Table of Pre69 by Post69		
		Pre69(Pre69)	Post69(Post69)	
			YES	Total
		NO	47	47
		YES	53	53
		Total	100	100



PRE-CF. POST- cooked vegetables in last 5 days

The FREQ Procedure

Frequency	Table of Pre98 by Post98			
	Pre98(Pre98)	Post98(Post98)		
		NO	YES	Total
NO	86	4	90	
YES	0	10	10	
Total	86	14	100	

Statistics for Table of Pre98 by Post98

McNemar's Test	
Statistic (S)	4
DF	1
Pr > S	0.0455

Simple Kappa Coefficient	
Kappa	0.8113
ASE	0.0908
95% Lower Conf Limit	0.6334
95% Upper Conf Limit	0.9892

Sample Size = 100

Frequency	Table of Pre99 by Post99			
	Pre99(Pre99)	Post99(Post99)		
		NO	YES	Total
NO	11	79	90	
YES	0	10	10	
Total	11	89	100	

Statistics for Table of Pre99 by Post99

McNemar's Test	
Statistic (S)	79
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.0271
ASE	0.0116
95% Lower Conf Limit	0.0044
95% Upper Conf Limit	0.0498

Sample Size = 100

Frequency	Table of Pre100 by Post100			
	Pre100(Pre100)	Post100(Post100)		
		NO	13	Total
NO	89	11	100	
Total	89	11	100	

Frequency	Table of Pre101 by Post101		
	Pre101(Pre101)	Post101(Post101)	
		No	Total
No	100	100	
Total	100	100	

Frequency	Table of Pre102 by Post102			
	Pre102(Pre102)	Post102(Post102)		
		No	Yes	Total
No	5	24	29	
Yes	4	67	71	
Total	9	91	100	



Statistics for Table of Pre102 by Post102

McNemar's Test	
Statistic (S)	14.2857
DF	1
Pr > S	0.0002

Simple Kappa Coefficient	
Kappa	0.1458
ASE	0.0926
95% Lower Conf Limit	-0.0356
95% Upper Conf Limit	0.3273
Sample Size =100	

Frequency		Table of Pre103 by Post103		
		Pre103(Pre103)		Post103(Post103)
			No	Total
	No		100	100
	Total		100	100

Frequency		Table of Pre104 by Post104		
		Pre104(Pre104)		Post104(Post104)
			No	Yes
	No		89	89
	Yes		11	11
	Total		100	100

Frequency		Table of Pre105 by Post105			
		Pre105(Pre105)			Post105(Post105)
			No	Yes	Total
	No		86	5	91
	Yes		0	9	9
	Total		86	14	100

Statistics for Table of Pre105 by Post105

McNemar's Test	
Statistic (S)	5
DF	1
Pr > S	0.0253

Simple Kappa Coefficient	
Kappa	0.7559
ASE	0.1032
95% Lower Conf Limit	0.5536
95% Upper Conf Limit	0.9581
Sample Size = 100	

Frequency		Table of Pre106 by Post106			
		Pre106(Pre106)		Post106(Post106)	
			19	Total	
	.		43	43	86
	19		5	9	14
	Total		48	52	100

Statistics for Table of Pre106 by Post106

McNemar's Test	
Statistic (S)	30.0833
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.0669
ASE	0.0667
95% Lower Conf Limit	-0.0639
95% Upper Conf Limit	0.1977
Sample Size = 100	



PRE-CF. POST- vegetables children like to eat

The FREQ Procedure

Frequency	Table of Pre113 by Post113		
	Pre113(Pre113)	Post113(Post113)	
		YES	Total
	NO	57	57
	YES	43	43
	Total	100	100

Frequency	Table of Pre114 by Post114			
	Pre114(Pre114)	Post114(Post114)		
		NO	YES	Total
	NO	0	37	37
	YES	4	59	63
	Total	4	96	100

Statistics for Table of Pre114 by Post114

McNemar's Test	
Statistic (S)	26.561
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	-0.0778
ASE	0.0369
95% Lower Conf Limit	-0.1502
95% Upper Conf Limit	-0.0054

Sample Size = 100

Frequency	Table of Pre115 by Post115			
	Pre115(Pre115)	Post115(Post115)		
		NO	YES	Total
	NO	81	19	100
	Total	81	19	100

Frequency	Table of Pre116 by Post116			
	Pre116(Pre116)	Post116(Post116)		
		NO	YES	Total
	NO	97	3	100
	Total	97	3	100

Frequency	Table of Pre117 by Post117		
	Pre117(Pre117)	Post117(Post117)	
		NO	Total
	NO	100	100
	Total	100	100

Frequency	Table of Pre118 by Post118			
	Pre118(Pre118)	Post118(Post118)		
		NO	YES	Total
	NO	43	48	91
	YES	0	9	9
	Total	43	57	100

Statistics for Table of Pre118 by Post118

McNemar's Test	
Statistic (S)	48
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.1389
ASE	0.0456
95% Lower Conf Limit	0.0496
95% Upper Conf Limit	0.2282

Sample Size = 100

Frequency	Table of Pre119 by Post119		
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Pre119(Pre119)	Post119(Post119)		
	NO	YES	Total
NO	11	49	60
YES	5	35	40
Total	16	84	100

Statistics for Table of Pre119 by Post119

McNemar's Test	
Statistic (S)	35.8519
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.0493
ASE	0.0614
95% Lower Conf Limit	-0.0711
95% Upper Conf Limit	0.1696

Sample Size = 100

Frequency	Table of Pre120 by Post120			
	Pre120(Pre120)	Post120(Post120)		
		NO	YES	Total
NO	30	62	92	
YES	4	4	8	
Total	34	66	100	

Statistics for Table of Pre120 by Post120

McNemar's Test	
Statistic (S)	50.9697
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	-0.0404
ASE	0.0447
95% Lower Conf Limit	-0.128
95% Upper Conf Limit	0.0473

Sample Size = 100

Frequency	Table of Pre121 by Post121			
	Pre121(Pre121)	Post121(Post121)		
		NO	YES	Total
NO	56	35	91	
YES	5	4	9	
Total	61	39	100	

Statistics for Table of Pre121 by Post121

McNemar's Test	
Statistic (S)	22.5
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.0239
ASE	0.0696
95% Lower Conf Limit	-0.1125
95% Upper Conf Limit	0.1603

Sample Size = 100

Frequency	Table of Pre122 by Post122			
	Pre122(Pre122)	Post122(Post122)		
		NO	YES	Total
NO	12	73	85	
YES	0	15	15	
Total	12	88	100	



Statistics for Table of Pre122 by Post122

McNemar's Test	
Statistic (S)	73
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.047
ASE	0.0176
95% Lower Conf Limit	0.0126
95% Upper Conf Limit	0.0814
Sample Size = 100	

PRE-CF. POST- traditional vegetables gathered & prepared

The FREQ Procedure

Frequency	Table of Pre178 by Post178			
	Pre178(Pre178)	Post178(Post178)		
		NO	YES	Total
	NO	83	17	100
	Total	83	17	100

Frequency	Table of Pre179 by Post179			
	Pre179(Pre179)	Post179(Post179)		
		NO	YES	Total
	NO	10	90	100
	Total	10	90	100

Frequency	Table of Pre180 by Post180			
	Pre180(Pre180)	Post180(Post180)		
		NO	YES	Total
	NO	86	6	92
	YES	4	4	8
	Total	90	10	100

Statistics for Table of Pre180 by Post180

McNemar's Test	
Statistic (S)	0.4
DF	1
Pr > S	0.5271

Simple Kappa Coefficient	
Kappa	0.3902
ASE	0.1551
95% Lower Conf Limit	0.0863
95% Upper Conf Limit	0.6942
Sample Size = 100	

Frequency	Table of Pre181 by Post181		
	Pre181(Pre181)	Post181(Post181)	
		NO	Total
	NO	100	100
	Total	100	100

Frequency	Table of Pre182 by Post182			
	Pre182(Pre182)	Post182(Post182)		
		NO	YES	Total
	NO	12	74	86
	YES	0	14	14
	Total	12	88	100



Statistics for Table of Pre182 by Post182

McNemar's Test	
Statistic (S)	74
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.0434
ASE	0.0165
95% Lower Conf Limit	0.011
95% Upper Conf Limit	0.0758

Sample Size = 100

Frequency	Table of Pre183 by Post183			
	Pre183(Pre183)	Post183(Post183)		Total
		NO	YES	
	NO	38	34	72
YES	5	23	28	
Total	43	57	100	

Statistics for Table of Pre183 by Post183

McNemar's Test	
Statistic (S)	21.5641
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.2653
ASE	0.0783
95% Lower Conf Limit	0.1118
95% Upper Conf Limit	0.4187

Sample Size = 100

Frequency	Table of Pre184 by Post184			
	Pre184(Pre184)	Post184(Post184)		Total
		NO	YES	
	NO	5	45	50
YES	0	50	50	
Total	5	95	100	

Statistics for Table of Pre184 by Post184

McNemar's Test	
Statistic (S)	45
DF	1
Pr > S	<.0001

Simple Kappa Coefficient	
Kappa	0.1
ASE	0.0434
95% Lower Conf Limit	0.015
95% Upper Conf Limit	0.185

Sample Size = 100