

# *Greenhouse to Cafeteria*







*Hi!*

My name is Kirstin Bailey!

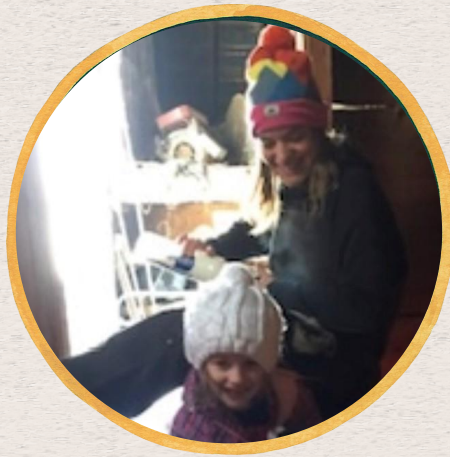
-From Nebraska, Center for Rural Affairs

-Beekeeper for 6 years

-Veggie farmer for 8 years







# *Hello!*

My name is Sarah Smith!

Nebraska Department of Education, Farm to School Specialist

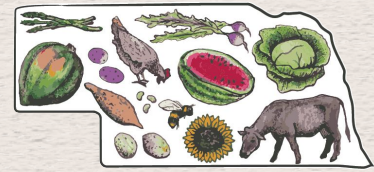
Farm, garden, market enthusiast since 2005

Mom since 2012





# Aim / AGENDA



*Farm to School*  
NEBRASKA

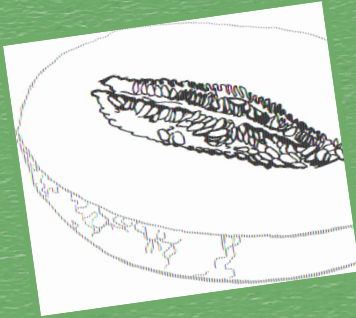
- Relax! Be present and yourself
  - Generate new ideas for your school-- how to bring local food to the school tray
  - Increased confidence in program implementation
  - Become familiar with Greenhouse to Cafeteria resources
  - Gain skills in production planning
- Intros & Icebreaker
  - Background info on Nebraska farm to school & CFRA
  - “How-to’s” for getting food from the garden to the cafeteria
  - Greenhouse to Cafeteria Toolkit
  - HANDS-ON ACTIVITY Production Planning



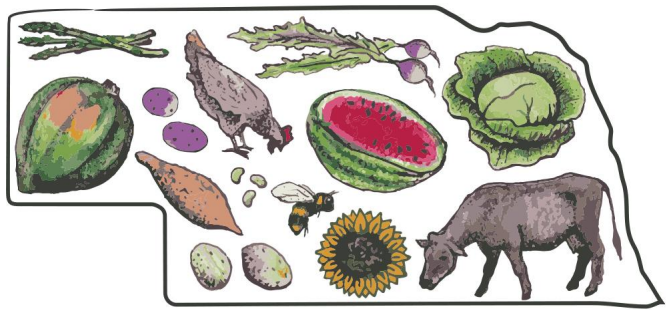


# *Moving Line-up!*

- Your name
- Name of the school you are involved with
- What town are you coming from?







*Farm to School*  
NEBRASKA

- ✕ Nebraska Thursdays
- ✕ Harvest of the Month
- ✕ Nebraska Beef to Schools
- ✕ Greenhouse to Cafeteria
- ✕ School Nutrition Programs

NSLP | CACFP | SBP | SFSP | FFVP



*Harvest of the Month*  
NEBRASKA





# HOW ARE NEBRASKA SCHOOLS SOURCING LOCAL FOODS?



Using fresh produce from school gardens and greenhouses in the school lunch and snack programs.



- Making purchases directly from farms, either by purchases under the micro-purchase threshold of \$10,000, or putting out a competitive bid request for contracts with farmers.



Ordering through a food hub that can coordinate purchases from multiple producers in one sale.



Working with local meat, grain, or vegetable processors for purchasing local items after processing.



Using "geographic preference" to target local purchases when ordering through broadband food service distributors.



- Utilizing federal programs like USDA Foods and Department of Defense Fresh. Producers sell into these programs by becoming a USDA vendor.

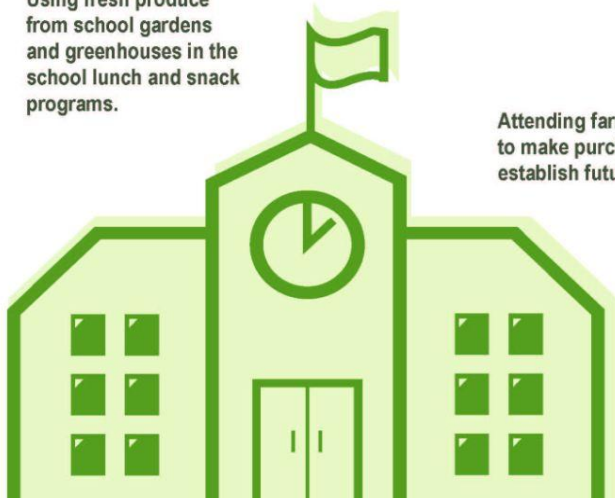
- Accepting local meat donations from the community, ranchers, or students involved in agriculture education programs like 4-H.



Attending farmers markets to make purchases and establish future connections.



Using local grocery or food cooperatives who help find local foods for schools and coordinate purchases.





# *The Why...*

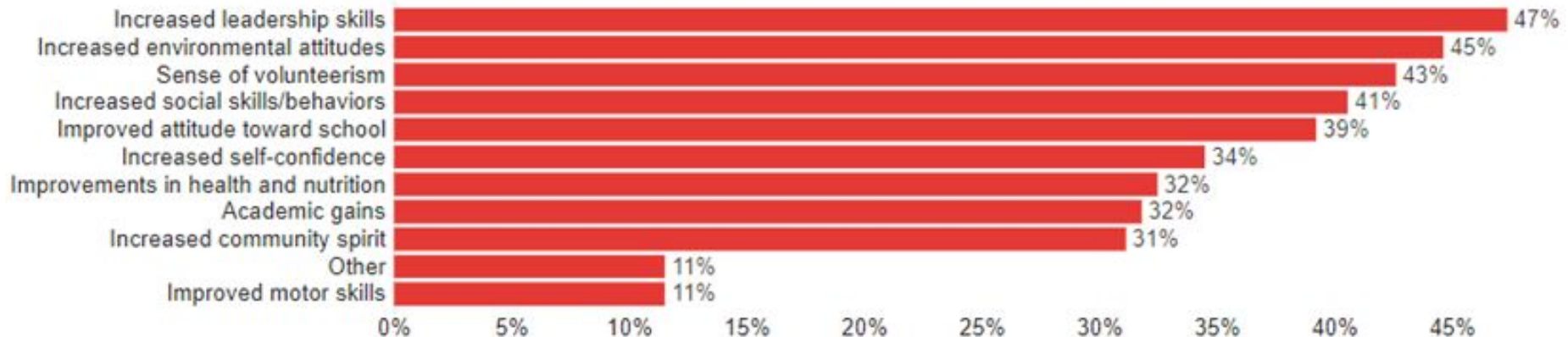
1. Improving student attitudes towards fruits and vegetables
2. Increasing consumption of fruits and vegetables
3. Improving job satisfaction and staff retention
4. Providing quality fresh product at competitive prices or no cost, and
5. Increasing school meal participation.





- 47% of respondents with gardens are using plants/food grown in the garden in school lunch
- Almost all respondents are using growing spaces to support student learning
- More than half of respondents invested their own school or district funds
- Nearly half of the respondents had a greenhouse

#### Observation of positive outcomes in school garden participants





## Try...

- Fruit & Veg Bar
- Harvest of the Month - Taste tests
- Fresh Fruit & Vegetable Program (FFVP)
- Special Events: Crunch Off
- Summer Food Service Program (SFSP)





## *The How...*

1. Donation
2. Inter-departmental agreement
3. Micropurchase from the nonprofit school food service account





# USDA Memos Support

- SP 06 - 2015, Farm to School and School Garden Expenses - *determining if costs are allowable*
- SP 32-2009 School Garden Q&As





# *Keep in mind...*

## Food Safety Plan

- Contacts
- Production Practices
- Product Handling
- Facilities
- Worker Health & Hygiene





# Considerations...

## Farm to School in Wellness Policies

*The school district will support the sustainability of a farm to school program through activities including fundraising, soliciting donations, use of existing resources, and allocation of school district funds.*

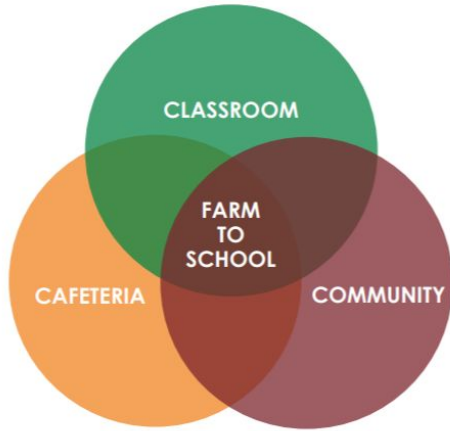
<https://www.fns.usda.gov/tn/local-school-wellness-policy>





# The Key...

Teams! Goals



<https://vtfeed.org/resources/connecting-classrooms-cafeterias-communities-guide-building-integrated-farm-school>





**EXAMPLE:**

# FTS Action Planning, Section 1: Cafeteria

Goals	Action Steps	Person(s) Responsible (Lead person/ group member)	Timeline	Technical Assistance/ Resources Needed
Incorporate one local product a month	<ul style="list-style-type: none"><li>• Use Harvest of the Month materials</li><li>• Have "Try-It" Tuesdays</li><li>• Offer on menu next week</li></ul>	FTS Coordinator and Nutrition Director	<ul style="list-style-type: none"><li>• Plan this spring</li><li>• Start next fall</li></ul>	<ul style="list-style-type: none"><li>• FTS Coordinators</li><li>• School Nutrition Director</li><li>• Harvest of the Month materials</li></ul>
Increase student meal participation	<ul style="list-style-type: none"><li>• Improve marketing of meal program</li><li>• Have students help design menu</li><li>• Choose student ambassadors for meal program</li></ul>	Nutrition Director and teacher partner	Starting this fall	<ul style="list-style-type: none"><li>• Color ink on menu</li><li>• Digital &amp; print menus</li><li>• Find class to partner on menu design</li><li>• T-shirts &amp; vests for ambassadors</li></ul>

**Long-term Ideas & Goals for Future School Years**

- Research and make a plan for universal meals
- Establish a parent education program on food preparation







CENTER *for* RURAL AFFAIRS

**Who we are:** The Center for Rural Affairs is a dynamic, energetic non-profit organization working to build a better rural future for all. We've done this work for more than 47 years, and we do it from rural places. Our work creates opportunities for beginning farmers, new business owners, and first-time advocates. The Center's work is fueled by our compassionate, mission-driven staff who work for the betterment of rural communities, stewardship, and the next generation.





# Center For Rural Affairs

## Mission:

Establish strong rural communities, social and economic justice, environmental stewardship, and genuine opportunity for all while engaging people in decisions that affect the quality of their lives and the future of their communities.









# FROM GREENHOUSE TO CAFETERIA:



A TOOLKIT FOR CREATING  
AND REVAMPING GREENHOUSE  
PROGRAMS IN NEBRASKA SCHOOLS

## “From Greenhouse to Cafeteria” ToolKit

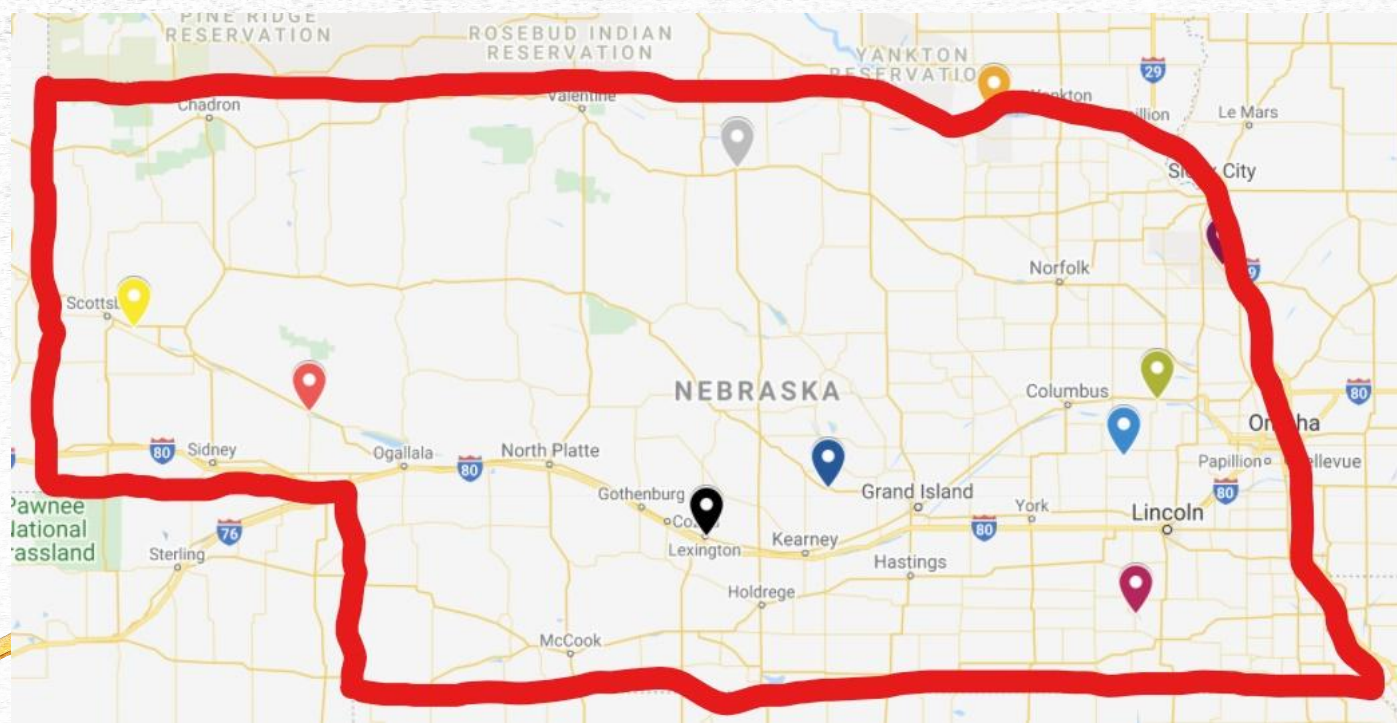
This guide can assist teachers, administrators, FFA instructors, and students in:

- Forming a greenhouse committee,
- Creating a purpose and goals for a greenhouse,
- Establishing a greenhouse curriculum,
- Designing and maintaining a greenhouse system, and
- Creating and managing a production plan.

The toolkit also includes a list of online resources instructor and students can turn to for further instruction.









# Future Farmers of America, a Gateway to growing

- We started 5 years ago...
- Continued to build the program addressing common problems and saw recurring goals
- Started working with FFA on the state level
- Now work with over 10 different schools and have plans to expand
- Created the greenhouse to cafeteria award this year!





"The greenhouse is an amazing learning experience. Being able to grow our own food, and then donate it to our school cafeteria is something we wouldn't be able to do without it. Also, growing our own food and knowing we put the effort into these plants, make them taste better. :)" - Faith Santana

"It's always nice to know that our vegetables are student grown. It's always nice to know that we eat them during lunch and that we know they aren't sprayed with chemicals." - Hailey Herzog

"The greenhouse has helped me learn how to properly manage plants. The greenhouse is a great experience for teenagers to learn responsibility." - Nick Garcia





# Lessons learned with our FFA program

- ★ We were able to provide schools with mini grants for purchases, most schools spent \$500 to get their program producing more food and consistent produce.
- ★ Having a team is key!
- ★ Document EVERYTHING! Staff turnover is a real problem and the knowledge of the program and production plans gets lost.
- ★ Start small! Go for those easy wins! Lettuce grows in 28 days, micro green are even quicker
- ★ Taste tests are perfect for the smaller quantities of produce, or highlight them for the kids who grow them.





“

*Questions? Break Time!*





## Let's Pretend:

We decided that we want to throw a taco party with as much greenhouse grown produce as possible. We know different veggies are ready at different times, so we need a plan. We want to be confident we'll have everything we need in time for our homegrown taco party.









We want homegrown ingredients  
for our tacos.



Which veggies and herbs should we  
grow?



When should we have the party?  
Maybe as a back to school event...









# Taco Time!

Example:

Let's use **red cabbage** as an ingredient for our taco party that will take place **August 18**.





# *Gather Your Supplies:*

1. A **calendar**
  - a. You can use a paper calendar or one on your computer, or cell phone.
2. A **reference guide for vegetables** and their “Days to Maturity” (**DTM**)
  - a. This might be a Johnny’s seed catalog ([johnnyseeds.com](http://johnnyseeds.com)), seed packets, or the reference materials at the end of this presentation.
3. **Writing utensil** and **notebook**





Cultivar/ Variety.  
"OG" symbolizes  
organically grown  
seed.

Vegetable Type

Plant genus, species  
and variety.

Amount of seed:  
Usually in pounds or  
ounces but may just  
be numerical. Also  
lists seeds per  
pound/ounce for  
calculation of the total  
number of seeds.

Germination test  
info: Will contain the  
percentage of seeds  
that germinated in  
the test (99%) and  
when they were  
tested (10/14). Also  
the lot number.

 **Johnny's**  
*Selected Seeds*

*An employee-owned company*

TATSOI OG,  
Leafy Asian Greens  
Brassica rapa var. narinosa

2897.30

LOT 48387

1/4 Lb.

SEED SIZE: UNSIZED

SEEDS PER POUND: 225447

DAYS 21 BABY/45 FULL

Certified Organic by MOFGA

Germ: 99%  
Germ Date: 10/14  
Lot: 48387



2897.30-48387

Seed Size: Unsized  
here (meaning not  
actively  
standardized), but  
will be measured in  
mm. May be  
important for some  
seeders.

Days to maturity:  
Usually counted  
from either  
germination or  
when the plant  
develops its first  
true leaves.

Organic Certifier

955 Benton Avenue, Winslow, Maine 04901  
1-877-564-6697 • Johnnyseeds.com





# Days To Maturity (DTM)

- ♦ DTM tells you when you need to plant a certain crop so it is ready to harvest when you want it.
- ♦ For transplanted crops, the DTM is the number of days it takes from **when you transplant** the crops into the ground **until they're ready to harvest**.
- ♦ For direct seeded varieties, the DTM is the average number of days it takes from **when you plant your seeds** in the ground until they're **ready to harvest**.





# Direct Seeded Crops

*(examples)*

Carrots, radishes, beets, spinach, beans, squash, cucumbers, and many more.

Typically, when you plant these crops, you seed them **directly into the ground**.





# Transplanted Crops

*(examples)*

Tomatoes, peppers, basil, broccoli, cabbage, cauliflower, and many more.

You typically **start these crops indoors** 5-8 weeks **before transplanting into the ground.**



# Let's go through the Steps for our Red Cabbage example:

1. We'll **look up the DTM** for our red cabbage.
2. On our calendar, **mark the date** we want to **harvest**.
3. **Count back** the number of DTM from the harvest date, and **mark that date**. This is the date we'll put the plants in the ground (**transplant**).
4. **Count back 5-8 more weeks**, and **mark that date**. This is the date we'll **start seeds indoors**.



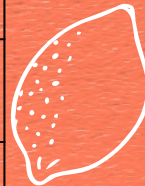


# Red Cabbage: Ruby Perfection

- ◆ On the chart that you were provided, or on the next slide we see cabbage has a DTM range of **70-120**.
  - ◇ There are many different varieties of cabbage, that's why this range is so large.
- ◆ Our variety of cabbage is *Ruby Perfection* and has a specific DTM of 85.



<b>Vegetable</b>	<b>Days to Maturity</b>	<b>Direct seed?</b>	<b>Transplant?</b>
beans, bush	50-60		yes
beans, pole	65-75		yes
beets	55-65	yes	
broccoli	60-80		yes
cabbage	70-120		yes
cantaloupe	80-90	yes	
carrot	70-95	yes	
cauliflower	60-75		yes
cilantro	50-55	yes	





johnnyseeds.com/vegetables/cabbage/storage-cabbage/ruby-perfection-f1-cabbage-seed-177.html

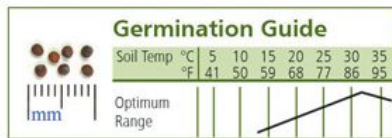


## Ruby Perfection (F1) Cabbage Seed

Product ID: 177

johnnyseeds.com/vegetables/cabbage/storage-cabbage/ruby-perfection-f1-cabbage-seed-177.html

### QUICK FACTS



### LATIN NAME

*Brassica oleracea* var. capitata

**DAYS TO MATURITY**  
85 Days

**LIFE CYCLE**  
Annual

**HYBRID STATUS**  
Hybrid (F1)

25,000 Seeds

\$201.00

-

0

+

100,000 Seeds

\$680.00

-

0

+

▼ GROWING INFORMATION

▼ SATISFACTION GUARANTEE

### QUICK FACTS

#### Germination Guide

Type here to search



“

85 days is a little over 12  
weeks, count backwards  
from August 18th.





# 2021 Calendar

## January

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

## February

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

## March

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Start seeds indoors



## April

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Transplant into the ground



## May

S	M	T	W	T	F	S
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

## June

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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

## July

S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## August

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Harvest and eat!



## September

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

## October

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24	25	26	27	28	29	30
31						

## November

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

## December

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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



# Your Turn!

- Pick another taco ingredient to work on next.
- Try another transplanted crop (like jalapenos or cherry tomatoes).
- We'll go through a direct-seeded example next.





# Direct Seed Walkthrough - Cilantro





johnnyseeds.com

Cilantro

Categories

Cilantro (Coriander)

Grower's Library & More

Cilantro (Coriander) - Key Growing Information

Cilantro & Coriander Production Guide | Tech Sheet (PDF)

Beyond Cilantro: Top 5 Culinary Herb Trends

Mouthwatering Combinations: Culinary Herbs + Farm-to-Fork

Search for cilantro?

Calypso  
Cilantro/Coriander Seed

Cruiser  
Cilantro Seed

Santo  
Cilantro/Coriander Seed

Chat With Us

Herbs / Cilantro (Coriander)

# Calypso

## Cilantro/Coriander Seed

Product ID: 3803



Slowest to bolt.

Full, bulky plants. In our trials, Calypso is 3 weeks slower to bolt than Santo. Avg. 3,400 seeds/oz. Packet: 200 seeds.

Johnny's Re

Slowest to bolt.

Full, bulky plants. In our trials, Calypso is 3 weeks slower to bolt than Santo. Avg. 3,400 seeds/oz. Packet: 200 seeds.

### Johnny's Recommended Substitute

Cruiser  
Cilantro Seed

Bolt-resistant variety with uniform plants.

50-55 to leaf harvest; 120-150 to seed

VIEW DETAILS

✓ GROWING INFORMATION

14



### QUICK FACTS

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**LATIN NAME**  
Coriandrum sativum

---

**DAYS TO MATURITY**  
50-55 to leaf harvest; 70-150 to seed

---



**LIFE CYCLE**  
Annual

---

**PRODUCT FEATURES**  
V

---

**YOU MAY ALSO LIKE**





Calypso

Chat With Us

## Days To Maturity

Average number of days from seeding date to harvest, within a specific crop group. If a transplanted crop: average number of days from transplant date. Not sure if crop is direct-seeded or transplanted? Check the Growing Information box for details. If crop can be both direct-seeded or transplanted, days to maturity refers to direct seeding. Days to maturity for all flowers and herbs is calculated from seeding date.

**YOU MAY ALSO LIKE**



Calypso

Chat With Us



# 2021 Calendar

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						1
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Put your cilantro seeds in the ground

## August

S	M	T	W	T	F	S
1	2	3	4	5	6	7
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Harvest and eat!

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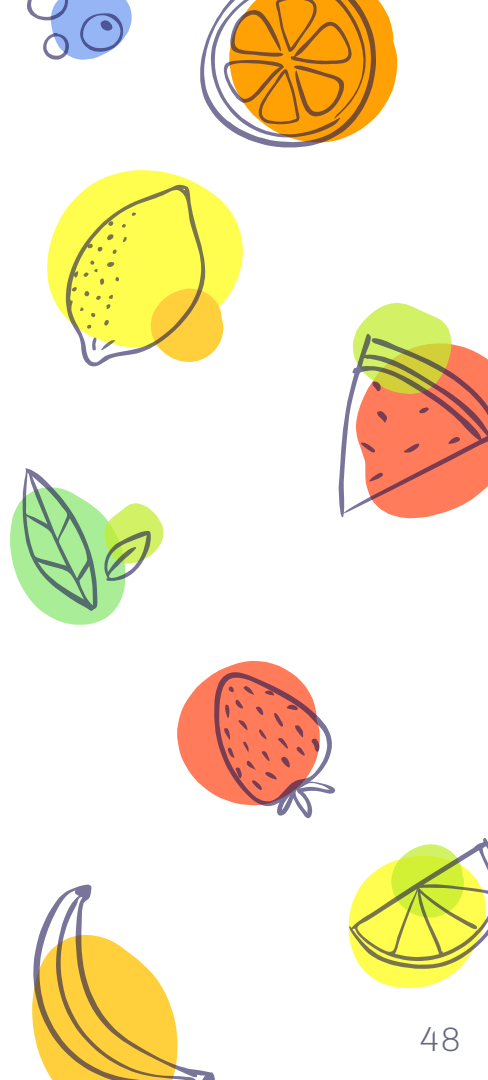
# Re-Cap

- × Circle the projected harvest day.
- × Count back from your harvest day by the number of DTM for each crop.
  - For *transplanted* crops, you'll arrive at the date for planting your **transplants (young plants)** in the ground.
  - For *direct-seeded* crops, you'll arrive at the date for planting your **seeds** directly in the ground.
- × For transplanted crops, count back 5-8 more weeks to circle the date you need to start your seeds.



# Basic Food Safety in the Classroom

- Have kids wash hands before harvesting.
- Make sure all harvest equipment is sanitized with a bleach solution
  - 2 teaspoons Regular Bleach (8.25% sodium hypochlorite) per 1 Gallon of clean water. This will result in a 200 ppm (parts per million) chlorine solution.
- Triple wash veggies in clean water.





# Basic Food Safety in the Greenhouse

- Only use manure and compost if you are not harvesting for 120 days.
- Fish emulsion and other natural fertilizers are okay. Some other fertilizers and sprays may have a days to harvest date on them.
- Try to minimize soil splash up by using drip tape.



**NOTE:** Days to Maturity are from planting seed or setting transplants in the ground. The number of days will vary depending on the variety, temperature and growing conditions.

**NOTE:** Almost everything **can** be transplanted, except for root crops (carrots, radishes, and potatoes). It depends on your harvest date and your individual growing conditions, as well as personal preference.

**NOTE:** If you don't have a harvest date in mind, use the frost free date as your guide. Example start transplants 5-8 weeks before your frost free date.

**NOTE:** These Days to Maturity (DTM) are a guide. Check the back of your seed packet, [johnnyseeds.com](http://johnnyseeds.com), or with your local extension for specifics.





# Thank you!

**kirstinb@cfra.org**

**sarah.e.smith  
@nebraska.gov**

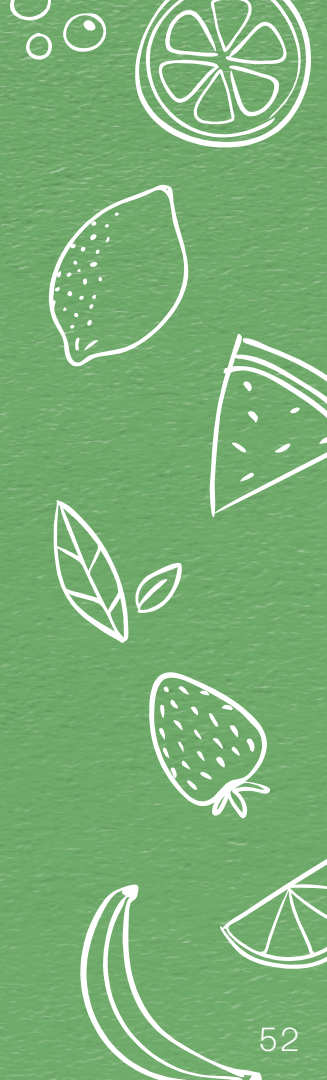
**Send photos of your  
garden progress to us!  
We love to hear how  
things are growing!**





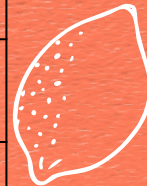
# *Reference Slides*

These are days to maturity ranges. Specific varieties have different dates, but should fall within the range listed. Consult your seed packets or catalog for more specific dates.





Vegetable	Days to Maturity	Direct seed?	Transplant?
beans, bush	50-60		yes
beans, pole	65-75		yes
beets	55-65	yes	
broccoli	60-80		yes
cabbage	70-120		yes
cantaloupe	80-90	yes	
carrot	70-95	yes	
cauliflower	60-75		yes
cilantro	50-55	yes	





Vegetable	Days to Maturity	Direct seed?	Transplant?
collards	55-85	yes	
corn, sweet	65-90	yes	
cucumber	50-65	yes	
eggplant	75-90		yes
kale	50-70	yes	
lettuce	25-35	yes	
mustard	40-50	yes	
okra	55-65	yes	
onion, green	60-90	yes	





<b>Vegetable</b>	<b>Days to Maturity</b>	<b>Direct seed?</b>	<b>Transplant?</b>
peas, garden	60-70	yes	
pepper, bell	65-80		yes
pepper, jalapeno	65-95		yes
potatoes	70-90	yes	
radish	25-30	yes	
spinach	40-45	yes	
squash, zucchini	40-55	yes	
tomato	70-90		yes
tomato, cherry	70-90		yes
watermelon	80-90		yes

