DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Tips for the Conway School Garden Champions January, 2019

School Garden activities for January

- Garden catalogs start arriving in earnest this month. Sit by the fire and make your wish list.
- January is the prime month for planning! Read the gardening books you received as gifts, make map of your existing garden, and work out your design for the next growing season.
- **Listen to the Songbirds.** Nothing livens up a dreary, wintry day like a flock of fluttering birds. Fill bird feeders with tasty seeds this winter.

Forcing Paperwhite Bulbs in the Classroom

Paperwhites are a form of daffodil that do not require a chilling period in order to bloom. Therefore, they are very easy to force indoors and bring in to bloom. Following are the steps needed.

• Use a 3 to 4-inch decorative container that does not have drainage holes. It should be transparent enough that you can see the water level in relation to the bulbs.

• Place 1 to 2 inches of washed gravel, marbles, glass beads or stones in the bottom of the container. We will call the material chosen as “media” for the remainder of the article.

• Place the bulbs on the media so that they are near one another. Add enough media to hold them in place.

• Add enough water that just the bottom of the bulb is sitting in water.

Do not submerge the bulb. Maintain the water at this level. It normally takes 4 to 8 weeks for the bulbs to bloom.

Unfortunately, paperwhites often become leggy and fall over. Growing in cooler temperatures (60 to 65 degrees) can help but there is another trick that can be useful and involves using a dilute solution of alcohol. No, this trick did not come from an unknown source on the Internet but Cornell University’s Flower Bulb Research Program. They suggest the following to obtain a plant that is 1/3 shorter than normal.

Flower size and longevity are not affected.

• Grow the bulbs as described above until the shoot is green and about 1 to 2 inches above the top of the bulb.
• Pour off the water and replace it with a 4 to 6% alcohol solution.
• Use this solution instead of water for all future waterings.

There are two methods to add this solution. The first is to add the alcohol solution to what is already in the container. Add enough to bring it up to the proper level. The second will give shorter plants. In this second method, pour off all the old solution and replace it with the new each time additional solution is needed.

So, how do we make the alcohol solution? An easy way is to use rubbing alcohol. Rubbing alcohol is usually 70% alcohol and should be mixed with 1 part alcohol with 10 or 11 parts water.

The researchers were not sure why this worked but suggested the alcohol made it more difficult for the plants to take up water. This water stress stunted growth but did not affect the flowers.

Starting Garden Transplants from Seed

January is often a cold and dreary month for many gardeners. However, planning for and starting vegetables and flower transplants from seed can make this a much more interesting time of year. Following are the steps needed to be successful in seed starting.

The following link lists the recommended growing practices of specific vegetables at the bottom of the page. The plant varieties listed in the fact sheets have proven themselves across the state of Arkansas and this is a good place to start when deciding what to plant.
https://www.uaex.edu/yard-garden/vegetables/a-z.aspx

However, also talk to your neighbors, friends and garden center about what has worked well for them. Obtain your seeds from a reputable source including garden centers and seed catalogs. If choosing seeds from a business that does not specialize in plants, pay special attention to the package date to make sure the seed was packaged for the current year. Though most seed remains viable for about 3 years, germination decreases as seed ages. See the accompanying article on using old garden seed for more detailed information.

Determine the Date to Seed: There are two pieces of information that needs to be known in order to determine the date to seed transplants: the target date for transplanting outside and the number of weeks needed to grow the transplant. The target date for transplanting the cool-season crops such as broccoli, cabbage, cauliflower and onions are early March.

Warm-season crops like tomatoes, peppers and most annual flowers are usually planted in mid- April(after last frost).

Climate Station	Last Spring Frost	First Fall Frost	Growing Season
CONWAY, AR	Apr 8	Oct 27	201 days

Starting Plants from Seeds Publication
https://content.ces.ncsu.edu/static/publication/js/pdf_js/web/viewer.html?slug=starting-plants-from-seeds

Sowing Seed: Do not use garden soil to germinate seed as it is too heavy and may contain disease organisms. Use a media made especially for seed germination.

Keep Seed Moist: Seed must be kept moist in order to germinate.
Water often enough that the media never dries. Using a clear plastic wrap over the top of the container can reduce the amount of watering needed. Remove the wrap after the seedlings emerge.

Light: Most plants will germinate in either darkness or light but some require darkness (Centurea, Larkspur, Pansy, Portulaca, Phlox and
Verbena) and others require light (Ageratum, Browallia, Begonia, Coleus, Geranium, Impatiens, Lettuce, Nicotiana, Petunia and Snapdragon).

All plants require adequate amounts of light once emergence occurs.
South facing windows may not provide adequate amounts and so fluorescent fixtures are often used. Suspend the lights 2 to 4 inches above the top of the plants and leave the lights on for 16 hours each day.

Temperature: The temperature best for germination is often higher than what we may find in our homes especially since evaporating moisture can cool the germination media. Moving the container closer to the ceiling (top of a refrigerator) can help but a heating mat is best for consistent germination. A companion article lists common plants and their optimum germination temperature. After plants have germinated, they can be grown at a cooler temperature (65 to 70 degrees during the day and 55 to 60 degrees at night). This will help prevent tall, spindly transplants.

Plant Movement: Plants react to movement. Brushing over the plants with your hand stimulates them to become stockier and less leggy. Try 20 brushing strokes per day. However, brushing will not compensate for lack of light or over-crowding. Plants grown under inadequate light will be spindly regardless of any other treatment.

Hardening Transplants: Plants grown inside will often undergo transplant shock if not hardened off. Plants are hardened off by moving them outside and exposing them to sun and wind before transplanting occurs. Start about two weeks before transplanting and gradually expose the plants to outside conditions. Increase the number of hours and degree of exposure over the two-week period.

Using Old Garden Seed and How to Watch the Germination of Seeds

Seed stores best if kept in a cold, dark, dry location. We normally consider seed will remain viable for about 3 years under these conditions though there are exceptions. For example, members of the carrot family (carrots, parsnips and parsley) are short-lived and are usually good for only 1 to 2 years. If you are unsure of viability and have plenty of seed, there is an easy method of determining how good your seed is.

Place 10 seeds on a paper towel moistened with warm water and cover with a second moistened towel. Roll up the towels and place inside a plastic bag with enough holes for air exchange but not so many that the towels dry quickly. Place the bag in a warm place such as the top of a refrigerator. Remoisten towels with warm water as needed. After the first week, check for germination. Remove sprouted seed and check again after another week. Add these numbers together to determine the percent germination.

School Garden Planting Chart

January	**February**
Order Seed Lime Soil Order Catalogs Apply and Incorporate Compost Prune Fruit Trees and Shrubs Prepare Soil Conduct Soil Test Prepare Work Tools Strawberries (1-5 years)* Spinach (42) English Peas (60-70) Salad Greens (Protected) ( ) = Days from planting to harvest + = seeds available from Extension office To produce broccoli, cabbage and cauliflower for spring crops, sow seed about four weeks earlier than suggested transplanting date	Strawberries (1-5 years) Carrots (66-75)+ Broccoli (50-75)+ Apply and Incorporate Compost Prune Fruit Trees and Shrubs Cabbage (60-82) Collards (50-75) Brussels Sprouts (95) Swiss Chard (60) Beets (54-68)+ Radish (24-30)+ Lettuce (45-65)+ Kale (55)+ Mustard (40-50) Turnips (40-55) Irish Potatoes (90-110) Onions (80-120)+ English Peas (60-70)+ Spinach (42)+ (Some seed is newer than others)

Happy Winter Gardening!

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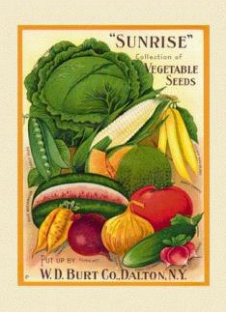

Table 2. Planting Guide

Vegetable	Days to Maturity	Seed Per 100 Ft of Row	Distance Between Rows		Distance Between Plants in Rows	Depth to Plant Seed	Time to Plant Outside	Pounds Yield per 100 Ft Row
			Hand Cultivation	Tractor Cultivation				
Kale	65	1/2 oz	18-24 in	3 ft	8-10 in	1/2 in	Feb-Apr	100
Lettuce (leaf)	50	1/2 oz	15-18 in	3 ft	1-2 in	1/2 in	Feb-Apr	50
Mustard	50	1/2 oz	15-18 in	3 ft	2-3 in	1/2 in	Feb-Apr	70
Peas (garden)	65	1-2 lbs	18-24 in	3 ft	1 in	2-3 in	Dec-Apr	40
Radish	25	1 oz	15-18 in	3 ft	1 in	1/2 in	Feb-May	40
Spinach	45	1 oz	15-18 in	3 ft	2-3 in	1/2-1 in	Feb-Apr	40
Turnips	55	1/2 oz	15-18 in	3 ft	2-4 in	1/4-1/2 in	Feb-Apr	150
Beans (pole lima)	80	1/2 lb	3 ft	4-6 ft	6-10 in	1-2 in	Apr-Aug	60
Beets	65	2 oz	18-14 in	3 ft	2-3 in	1 in	Feb-Apr	75
Broccoli	70	60 plants	18-24 in	3 ft	18 in		Feb-Apr	60-75
Brussels sprouts	95	60 plants	18 in	3 ft	18 in		Feb-Apr	25-30
Cabbage	65	60 plants	18-24 in	3 ft	18 in		Feb-Apr	150
Carrot	75	1 oz	15-18 in	3 ft	1-2 in	1/2 in	Feb-Apr	75
Cauliflower	60	65 plants	2-3 ft	3 ft	15-18 in		Feb-Apr	80
Collards	75	1/2 oz	2-4 ft	3-4 ft	6-8 in	1/2 in	Feb-July	150
Corn (sweet)	80	1/2 lb	24-30 in	3-31/2 ft	8-12 in	2 in	Mar-Aug	6-8 dz ears
Endive	80	1 oz	18-24 in	3 ft	8-10 in	3/4 in	Mar-Apr	60
Onions (plants)	80	400 plants	15-18 in	3 ft	2-3 in	2 in	Feb-Apr	75
Onions (sets)	95	2 qts	15-18 in	3 ft	2-3 in	2 in	Feb-Apr	75
Potatoes (Irish)	95	10 lbs	24-30 in	3-4 ft	12 in	3-4 in	Feb-Apr	100
Snap beans	50	1 lb	18-24 in	3 ft	2-3 in	1-2 in	Mar-Aug	50
Swiss chard	60	1/2 oz	15-18 in	3 ft	4 in	1/2 in	Feb-May	75
Beans (bush lima)	75	1 lb	18-24 in	3 ft	2-3 in	1-2 in	Apr-Aug	40
Beans (pole)	65	1/2 lb	3 ft	3 ft	4-6 in	1-2 in	Mar-Aug	80
Cantaloupe	95	1 oz	3-4 ft	3-4 ft	24-36 in	1-1 1/2 in	Apr-May	100
Chinese cabbage (fall crop only)	75	1/2 oz	18-24 in	3 ft	3 in	1/2 in	July-Sept	75-85
Cucumber (pickling)	55	1 oz	3-4 ft	3-4 ft	12-18 in	1-1 1/2 in	Apr-May	100
Cucumber (slicing)	65	1 oz	3-4 ft	3-4 ft	12-18 in	1-1 1/2 in	Apr-May	100
Eggplant	85	50 plants	24-30 in	3 ft	18-24 in		Apr-May	100
Okra	55	1 1/2 oz	30-36 in	3-4 ft	10 in	1 in	Apr-May	70
Peppers	75	60 plants	24-30 in	3-4 ft	15-24 in		Apr-May	50
Popcorn	100	1/2 lb	24-30 in	3-3 1/2 ft	8-12 in	2 in	Apr-June	30-40
Potatoes (sweet)	100	80 plants	3 ft	3-5 ft	12-16 in		Apr-June	150
Pumpkin	110	1 oz	3-4 ft	4-6 ft	2-3 ft	1 in	Apr-May	200
Southern peas	75	1/2 lb	30 in	3 ft	3 in	1 1/2 in	May	50-60
Squash (summer)	55	1 oz	3-4 ft	3-4 ft	2-3 ft	1 in	Apr-May	100
Squash (winter)	90	1 oz	3-4 ft	4-6 ft	2-3 ft	1 in	May-July	150
Tomato	80	70 plants	2-3 ft	3-5 ft	18-24 in		Mar-May	250
Watermelon	85	1 oz	3-4 ft	6-8 ft	6-8 ft	1-1 1/2 in	Apr-May	300
Asparagus	2 yrs	50 crowns	beds	4-5 ft	2 ft		Mar-Apr	30-40
Strawberries	9-14 mo	50 plants	beds	3-4 ft	2 ft		Feb-Apr	30-50