# 2017 Home Demonstration Garden

**RFR-A1741**

Cynthia Haynes, associate professor
Laura Irish, graduate assistant
Department of Horticulture

## Introduction

There were two themes for the 2017 Home Demonstration Gardens: pantry garden and an edible flower garden. Three-quarters of the garden was planted for the pantry garden, which focused on cultivar trials and donation of produce to local food pantries. The other quarter of the garden was planted with edible flowers and new flower cultivars.

## Materials and Methods

Seeds of many vegetable and annual flowers were sown in late February and March 2017 at the Iowa State University Department of Horticulture greenhouses in Ames, Iowa. Seedlings were transplanted into cell packs approximately one month later. Cool-season crops were distributed to the farms in mid-April. In early May, warm-season plants were distributed to the farms. Multiple species (beans, beets, cucumbers, summer squash, onions, potatoes, and carrots) were directly seeded into the gardens.

Each farm acclimated transplants for approximately one week prior to planting. The ISU Research and Demonstration Farms in Iowa participating in the 2017 Home Demonstration Garden trial and display included: Armstrong (Lewis), Horticulture Research Station (Ames), the Lyon County Fairgrounds - Northwest (Rock Rapids), Muscatine Island (Fruitland), Northern (Kanawha), and Northeast (Nashua). All transplants and seeds were watered at planting and as needed throughout the growing season. Fertilizer and pesticides were applied based on growing conditions at each garden.

*Pantry garden*. Fifteen vegetable species were chosen based on the donation requests from Iowa food pantries. Cultivar trials also were conducted by local Master Gardeners: three cultivars of green beans (Aldrin, Kentucky Wonder, and Top Crop); two cultivars of beets (Bull's Blood and Zeppo); two cultivars of broccoli (Artwork and Green Magic); two cultivars of carrots (Bolero and Mokum); two cultivars of cucumbers (Slice More and Suyo Long); two cultivars of kale (Prizm and Redbor); two cultivars of cabbage (Blue Vantage and Katarina); two cultivars of muskmelon (Honey Bun and Minnesota Midget); four cultivars of onions (Forum, Red Wethersfield, White Ebenezer, and Yellow Stuttgarter); four cultivars of bell peppers (Ace, Carmen, Escamillo, and Karisma); four cultivars of Irish potatoes (Gold Rush, Superior, Strawberry Paw, and Yukon Gold); three cultivars of summer squash (Alexandria, Elite, and Golden Glory); and four cultivars of tomatoes (Celebrity, Chef's Choice Orange, Red Deuce, and Skyway). One cultivar of watermelon (Mini Love) and one cultivar of winter squash (Honeybaby) also were planted in the trials at each farm.

*Edible and new flower garden*. Species planted were chosen based on having edible vegetative or reproductive structures, or on being a newly released cultivar. The quadrant included: cardinal and thai basil, boarge, *Calendul*a (Snow Princess), *Coreopsis* (Sunkiss), *Dianthus* (Jolt), dill, *Echinacea* (Prairie Splendor Rose), *Gomphrena* (Ping Pong Purple and Ping Pong Mix), lavender (Lavance Deep Purple), four cultivars of marigold (Chica Yellow, Fireball, Lemon Gem, and Tangerine Gem), lemon beebalm, *Nasturtium* (Orchid Cream and Whirlybird Scarlet), okra (Candle Fire), Portulaca (Sundial), radish (Dragon's Tail), Russian sage (Blue Steel Russian), *Salvia* (Summer

Jewel Lavender), toothache plant, *Vinca* (Titan® Bubble Gum Mix), and *Viola* (Penny All Seasons Mix).

## Results and Discussion

Many of the farms experienced heavy rain events followed by drought conditions in mid-summer, which impacted the yield of many crops grown in the pantry garden.

Most of the farms lost their entire carrot and/or beet crops due to poor germination. Two farms replanted carrots, and one replanted beets for a fall crop. Muscatine Island planted all cucurbits as transplants rather than directly seeding for the black plastic mulch used in the garden. Some pest and disease issues also decreased the quantity of overall marketable produce at the Northern Research Farm, Kanawha, resulting in near total loss of cucurbits.

Regardless of environmental and pest impacts, a total of 11,453.9 of fresh produce was donated to local food pantries. Table 1 illustrates this total for all six gardens. This is an increase in totals compared with 2016.

Master Gardener volunteers collected four types of data for each cultivar in the pantry garden: total pounds, total number, marketable pounds, and marketable number. Average weights for peppers, potatoes, and tomatoes are reported in Tables 2-4. Frequencies have been calculated based on each farm and collectively across all farms.

Table 2 represents the average weights (lb) of the four pepper cultivars at each farm. Carmen and Escamillo are corno di toro peppers, averaging 0.09 and 0.12 lb, respectively. Overall, Ace and Karisma averaged 0.15 and 0.19 lb/marketable pepper.

Table 3 and Table 4 illustrate the average weights (lb) of the four potato and four tomato cultivars at each farm, respectively. Celebrity tomato is significantly smaller than the others in weight, averaging 0.37 lb/marketable tomato. Tomatoes were largest on average at Rock Rapids (0.51 lb). The potatoes at Rock Rapids and Horticulture Research Station were over twice as large as ones from Muscatine Island (0.34, 0.32, and 0.15 lb).

The edible flowers performed well across all farms. The cardinal basil was a showstopper at all of the gardens with its large, deep purplish-red flower clusters. During the field days, we found many pollinators, including bumble bees, around the lemon beebalm plants. At all field days, attendees were surprised with the variety of tastes of the many edible flowers. The salty and numbing effects of the toothache plant flowers surprised field day attendees.

## Acknowledgements

Thanks to the farm superintendents, staff, and Master Gardeners at each research farm for planting, harvesting, collecting data, donating produce, and hosting a field day.

**Table 1. Total weight and total marketable weight (lb) of produce harvested from each of the six ISU Research and Demonstration Farms.**

| | Armstrong | Horticulture Research Station | Muscatine Island | Northern | Northeast | Rock Rapids | Overall total |
|---|---|---|---|---|---|---|---|
| Total | 2,261.3 | 2,374.9 | 2,249.8 | 1,141.3 | 3,874.9 | 1,698.2 | 13,600.4 |
| Marketable | 1,771.4 | 1,711.7 | 1,898.5 | 826.8 | 3,713.8 | 1,531.7 | 11,453.9 |

**Table 2. Average weight (lb) of marketable peppers (Ace, Carmen, Escamillo, and Karisma) harvested at six ISU Research and Demonstration Farms.**

| | Armstrong | Horticulture Research Station | Muscatine Island | Northern | Northeast | Rock Rapids |
|---|---|---|---|---|---|---|
| Ace | .08 | .17 | .13 | .15 | .10 | .26 |
| Carmen | .07 | .19 | .09 | .08 | .06 | .06 |
| Escamillo | .06 | .16 | .13 | .18 | .07 | .10 |
| Karisma | .20 | .30 | .23 | .13 | .12 | .13 |

**Table 3. Average weight (lb) of marketable potatoes (Gold Rush, Superior, Strawberry Paw, and Yukon Gold) harvested at six ISU Research and Demonstration Farms.**

| | Armstrong | Horticulture Research Station | Muscatine Island | Northern | Northeast | Rock Rapids |
|---|---|---|---|---|---|---|
| Gold Rush | .29 | .37 | .17 | .24 | .18 | .32 |
| Superior | .23 | .29 | .08 | .19 | .19 | .28 |
| Strawberry Paw | .28 | .24 | .07 | .27 | .18 | .39 |
| Yukon Gold | .25 | .37 | .29 | .24 | .24 | .37 |

**Table 4. Average weight (lb) of marketable tomatoes (Celebrity, Chef's Choice Orange, Red Deuce, and Skyway) harvested at six ISU Research and Demonstration Farms.**

| | Armstrong | Horticulture Research Station | Muscatine Island | Northern | Northeast | Rock Rapids |
|---|---|---|---|---|---|---|
| Celebrity | .46 | .39 | .21 | .35 | .38 | .43 |
| Chef's Choice Orange | .34 | .50 | .35 | .39 | .30 | .50 |
| Red Deuce | .51 | .53 | .38 | .44 | .48 | .52 |
| Skyway | .54 | .50 | .39 | .42 | .35 | .57 |