Cornell Cooperative Extension
Cold Frames and Season Extension

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April 8, 2020
History of Season Extension In Europe

Top left: Cloches, small scale greenhouses, a bell-shaped jar
Source: https://www.definingfrance.com/2017/08/27/french-cloche/

Top right: Farm outside of Paris in the 1970s using traditional cold frame techniques
Middle: Dutch lights
Source: “Year Round Vegetable Production with Eliot Coleman”
What is a cold frame?

- A bottomless box with a glass or transparent plastic top to let in sunlight
- Windows face south and structure is tilted for best solar efficiency
- Used for hardening off seedlings
- Allows for earlier start in spring and extends season into fall/winter

Photo Credit: Sarah Ann Horton
Building a Cold Frame

- Two basic parts:

1. The sides (the box)
   - Variety of materials including:
     - concrete blocks, bales of hay, logs, and wood

2. The top (light)
   - Glass, often from storm windows

Source:
http://itsasmalltownlife.blogspot.com/2012/02/straw-bale-cold-frame.html
Urban ag considerations for cold frame construction

- Excessive heat may be a problem, be sure to vent frequently
- Use untreated wood
- Direction of wind

Cold Frames on top of raised beds on a rooftop farm (Green City Growers in MA)

Automatic Vent Opener

Source: [https://greencitygrowers.com/urban-farming-products/cold-frames/](https://greencitygrowers.com/urban-farming-products/cold-frames/)
How the Cold Frame Works

• Temperature
  • Daytime temp difference is 7-10°F on cloudy, early spring day

• Moisture
  • Protects crops inside from pounding rains

• Wind
  • Provides a windbreak

Source: Yolanda Gonzalez
What can you grow in cold frames?

- Mâche (corn salad)
- Radicchio
- Frisée endive
- Claytonia (winter’s purslane)
- Minutina (buckshorn plantain)
- Wild Arugula (Sylvetta)
- Dandelion
- Escarole
- Leeks
- Mizuna
- Mustard Greens
- Parsley
- Sorrel
- Tatsoi
- Turnip
- Spinach

Planting Date: Sept. 25th & Harvest Date: Nov. 6th

Source: Yolanda Gonzalez

Mâche Source: https://www.gardenista.com/posts/8-winter-garden-greens-to-grow-now/

# Planting and Harvesting Dates for Cold Frame Crops

## Cold Frame Crops for Fall and Winter Consumption

<table>
<thead>
<tr>
<th>Crop</th>
<th>Planting Dates</th>
<th>Harvest Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arugula</td>
<td>8/1-8/21</td>
<td>10/1- spring</td>
</tr>
<tr>
<td>Endive</td>
<td>7/10-7/20</td>
<td>9/15-11/30</td>
</tr>
<tr>
<td>Escarole</td>
<td>7/10-7/20</td>
<td>9/15-11/30</td>
</tr>
<tr>
<td>Italian dandelion</td>
<td>8/1-8/15</td>
<td>10/1- spring</td>
</tr>
<tr>
<td>Lettuce</td>
<td>7/21-9/7</td>
<td>9/15-11/30</td>
</tr>
<tr>
<td>Mizuna</td>
<td>8/1-8/15</td>
<td>9/15-11/30</td>
</tr>
<tr>
<td>Parsley</td>
<td>6/1-7/15</td>
<td>10/1- spring</td>
</tr>
<tr>
<td>Radish</td>
<td>9/1-10/15</td>
<td>10/1- 11/30</td>
</tr>
<tr>
<td>Scallion</td>
<td>7/1-7/15</td>
<td>10/1- spring</td>
</tr>
<tr>
<td>Spinach</td>
<td>8/1-8/30</td>
<td>10/15- 11/30</td>
</tr>
<tr>
<td>Swiss chard</td>
<td>7/1-8/1</td>
<td>10/1- spring</td>
</tr>
<tr>
<td>Tatsoi</td>
<td>8/1-8/15</td>
<td>9/15-11/30</td>
</tr>
</tbody>
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Source: “Four-Season Harvest” by Eliot Coleman
### Cold Frame Crops for Winter and Spring Consumption

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<tr>
<th>Crop</th>
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<th>Harvest Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrot</td>
<td>8/1</td>
<td>12/1- spring</td>
</tr>
<tr>
<td>Claytonia</td>
<td>8/1- 9/1</td>
<td>11/1-spring</td>
</tr>
<tr>
<td>Italian dandelion</td>
<td>8/1- 8/15</td>
<td>10/1-spring</td>
</tr>
<tr>
<td>Kohlrabi</td>
<td>8/1-8/15</td>
<td>11/1- spring</td>
</tr>
<tr>
<td>Mâche</td>
<td>9/15-11/15</td>
<td>12/1-spring</td>
</tr>
<tr>
<td>Parsley</td>
<td>6/1-7/15</td>
<td>10/1-spring</td>
</tr>
<tr>
<td>Radicchio</td>
<td>6/1-8/1</td>
<td>12/1- spring</td>
</tr>
<tr>
<td>Scallion</td>
<td>7/15-8/1</td>
<td>11/1-spring</td>
</tr>
<tr>
<td>Sorrel (perennial) transplant</td>
<td>9/1</td>
<td>11/1- spring</td>
</tr>
<tr>
<td>Spinach</td>
<td>9/15-10/15</td>
<td>12/1- spring</td>
</tr>
<tr>
<td>Sugarloaf chicory</td>
<td>7/1-7/15</td>
<td>11/1- spring</td>
</tr>
</tbody>
</table>

Source: “Four- Season Harvest” by Eliot Coleman
Other forms of season extension

Source: Yolanda Gonzalez
Resources

• Cornell Small Farms Urban Farming Guide “Season Extension”: https://smallfarms.cornell.edu/2017/05/10-season-extension/

• National Sustainable Agriculture Information Service publication, “Season Extension Techniques for Market Gardeners”

• Eliot Coleman, author of “Four Season Harvest” and “The Winter Harvest Handbook”
USDA’s Natural Resources Conservation Service (NRCS) in New York is announcing a sign-up for technical and financial assistance for agricultural producers in areas identified to be in the Urban Priority area. This special program offers an exciting opportunity for urban farmers to compete for funding in a program developed to meet their needs. The application deadline is April 24, 2020.

Producers whose land is located within the Urban Priority Area will be eligible to apply for consideration in 2020. All applications are competitive and are ranked based on national, state and locally identified resource priorities and the overall benefit to the environment. Below is the Urban Priority Area map.

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ny/programs/financial/?cid=nrcs144p2_027061