

# History of Public Onion Breeding Programs in the United States

*Irwin L. Goldman\* and Geoffrey Schroeck*  
 Department of Horticulture, 1575 Linden Drive,  
 University of Wisconsin–Madison, Madison, WI 53706

*Michael J. Havey*  
 USDA Agricultural Research Service and Department of Horticulture,  
 1575 Linden Drive, University of Wisconsin–Madison,  
 Madison, WI 53706

- I. INTRODUCTION
  - A. Origin of Onion
  - B. Onion as a World Crop
  - C. Onion Biology and Horticulture
- II. HISTORY OF ONION IN THE AMERICAS
  - A. Origin of Onion and Settlement of the New World
  - B. Adaptation of Storage Onion to Shorter Days
  - C. Variability and Cultivar Distinctions
  - D. Founding Populations
- III. STATE EXPERIMENT STATION PROGRAMS
  - A. California
  - B. Colorado
  - C. Idaho
  - D. Iowa
  - E. Louisiana
  - F. Michigan
  - G. New Mexico
  - H. New York
  - I. Texas

\*Corresponding author, *ilgoldma@facstaff.wisc.edu*, FAX 608-262-4743

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J. Utah  
 K. Wisconsin

IV. FUTURE PROSPECTS FOR PUBLIC ONION BREEDING IN THE UNITED STATES  
 LITERATURE CITED

## I. INTRODUCTION

### A. Origin of Onion

The bulb onion (*Allium cepa* L., Alliaceae) originated in the region comprising Afghanistan, Iran, and the southern portion of the former Soviet Union (Havey 1995). The genus *Allium* is highly diverse and contains more than 600 species, among them the edible species *A. fistulosum* (bunching onion, Japanese bunching onion, or Welsh onion), *A. sativum* (garlic), *A. ampeloprasum* (leek), *A. schoenoprasum* (chive), and *A. tuberosum* (chinese chives). The bulb onion, *A. cepa*, is the most widely cultivated of these species. Vegetable Alliums are distributed throughout the temperate zones of the Northern Hemisphere and have been cultivated for thousands of years. Bulb onion has been cultivated for more than 5,000 years and is not known to exist in the wild. The closest wild relatives are *A. galanthum* and *A. vavilovii* (Hanelt 1990), both of which can be found in the area comprising Turkmenistan, Tajikistan, Uzbekistan, and northern Afghanistan.

*Allium cepa* has been divided into two broad horticultural groups, the common onion and aggregatum groups (Hanelt 1990; Brewster 1994). The common onion group comprises the majority of bulb onions grown throughout the world. The majority of onions in this group are grown from seed to produce large bulbs. The common onion group also contains potato or multiplier onion and the ever-ready onion (Pike 1986). Potato or multiplier onions have smaller bulbs than the typical bulb onion and often do not flower and produce seed. They are typically propagated asexually from divided bulbs. The ever-ready onion possesses smaller bulbs than the multiplier onion and does not typically flower. Bulbs of the aggregatum group are smaller and are usually divided into clusters of small bulbs. This group includes the multiplier onions and shallots, each of which can form up to 20 bulbs in a cluster. Shallots form a single bulb and exhibit foliar maturity by prostrate tops, both of which are similar to the typical bulb onion. Unlike the bulb onion, however, shallots are typically propagated asexually through bulb division. Most of the onions from the aggregatum group are vegetatively reproduced, although seed production is a viable alternative.

Populations of bulb onion spread from Asia to Europe and were introduced to the United States by European immigrants and by trade with