The History of Trial Gardens

A Senior Project

presented to

the faculty of the Horticulture and Crop Science Department

California Polytechnic State University, San Luis Obispo

In Partial Fulfillment

of the requirements for the Degree

Bachelor of Science

By

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September, 2013
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The home garden has been a staple of American culture dating back to the mid 19th century. As open spaces were converted to homesteads and farmland to suburban developments Americans turned to seed producers, or seedsmen, and nurserymen to provide plant material that would improve the aesthetics and function of their properties. They wanted colorful flower gardens in spring and bountiful harvests of tomatoes, zucchini and melons in summer. Despite this booming public interest in flowers and vegetables for the home and garden, there was a serious lack of regulation governing the seed industry. How was the homeowner to know if the seed he purchased would do well in his region of the country or which seed catalog offered the highest quality plants? This paper will show how consumer demand led to the rise of the trial garden, which in turn laid the groundwork for creating a non-biased system to rate and compare new varieties of plants to better assist consumers, and eventually industry growers as well. The trial garden would also benefit breeders by giving them credit for their developments and ensure a seal of approval in which their customers could have confidence. Since the inception of this mutually beneficial concept, trial gardens have become the standard of rating new home flower and vegetable varieties not only in the United States, but across the globe.

Between 1850 and 1880 public interest in horticulture skyrocketed. Experts and entrepreneurs alike entered the seed and nursery business as Americans demanded more trees, shrubs and flowers than existing nurseries and seed companies could provide. According
to the US census, the industry of nurserymen, seedsmen and florists increased from 8,479 to 56,520 within this 30-year period (Lyon-Jenness). However, just because many people claimed to be seedsmen that did not mean they were experts, or even trustworthy businesspeople. Seed catalogs were the primary means for home gardeners to obtain seeds and other horticultural products. Because consumers were purchasing their seed from catalogs, the seller was an almost completely unknown entity. This anonymity of the seedsmen eliminated the personal relationship between the buyer and seller, who could be hundreds of miles away and therefore less accountable for bad product (Lyon-Jenness). Customers around the country began expressing great dissatisfaction when the seeds or plants they ordered did not thrive as described in the seed catalogs.

One likely factor was the vast differences in climates...
across the country of which the breeder was simply not aware—hardiness zones weren’t
developed until the late 1920s, and the USDA Hardiness Zone Map, which divides the country
into climactic regions based on average lowest temperature, wasn’t released until 1960! (Del
Tredici).

![USDA Plant Hardiness Zone Map 1960](image)

1960: The first USDA Hardiness Zone Map shows lowest temperatures around the US (Del Tredici)

Even if there had been a map to consult, the seller probably had limited knowledge about what
climactic conditions his or her plants could endure and because of this, couldn’t offer any
guarantees to the buyer. Another factor was the increase in the number of unscrupulous
opportunists who took advantage of the high demand and high level of seller anonymity. Also,
the early days of homegrown horticulture lacked any formal infrastructure, not by the
government and not within the industry (Lyon-Jenness). Another issue compounding this
inconsistency in the seed industry was the fact that in the 1890s, plant breeding was nowhere near the advanced science that it is today. Breeders were still developing techniques to create true breeding varieties, but even so, their products could not be patented or registered (Keyles). On the breeder’s end, this meant that even if she spent her life’s work developing the world’s first red daffodil, there was no way to guarantee that she would benefit from it or be the sole seller.

Near the turn of the century the United States Department of Agriculture addressed breeders’ concerns about their rights to the plants they bred. In 1886 the Department of Pomology established a registry system that protected the innovations of breeders of nursery plants as well as orchids (Keyles). By 1906, breeders could patent their new plants through the government. This gave the breeder sole rights to propagate and to sell his or her product to the public, a huge step that encouraged seedsmen to be innovative (Keyles).

At this point in history, many of the early problems of the seed industry were ironed out as honest breeders and seed distributors grew their businesses and gained experience in the booming industry. Wheeler-and-dealer type seedsmen became few and far between while companies such as H. Weber & Sons, Bedman Brothers, James Vick Seed Company and W. Atlee Burpee & Company continued to grow into incredibly profitable companies (Smithsonian). Industry infrastructure improved, breeding techniques became more accurate and seed companies were holding their own trials to test how their newly developed varieties fared. In 1888, W. Atlee Burpee turned his family farm in Pennsylvania into an experimental farm where he conducted seed trials and introduced new varieties. This “trial farm” was the first of its type in the United States at the time (Smithsonian). As the business grew and the variety of seed
species increased, Burpee later established additional trial grounds in New Jersey and California in the early 1900s (Smithsonian).

1873-1911: Seed catalogs from various companies advertise colorful blooms

This new trend of seed companies conducting trials was a significant step in improving the quality of seed and plant species available to the American homeowner as their appetite for bigger, better veggies and more brilliant and brighter flowers seemed impossible to satisfy.
However, there still existed challenges to this trial program (AAS, 1986). First, the trials were only conducted on seed company grounds, and only at ones who could afford to do so. Introducing new varieties and trialing them is an incredibly expensive venture. Not only does one need the facilities and staff to hold the trials, but promoting a new variety costs a great deal of money in marketing and advertising costs. This not only restricted small-scale breeders from getting their plants to the public, but also caused even large seed companies to shy away from pursuing less popular species for fear of marketing failure. Furthermore, the information gathered from trials for a particular seed company’s variety were only applicable to the geographic region from where they were conducted and not necessarily other parts of the country where the seed might be sold. Finally, there was no overriding organization that set evaluation standards for the trials (AAS, 1986). If the trial program decided this new white petunia was an “excellent” performer, what did “excellent” mean and compared to what did it outperform or appear to excel in?

It was in 1932 that a progressive seedsman by the name of W. Ray Hastings brought an end to this guessing game. He proposed
the creation of a national network of trial grounds that would impartially test all new varieties to select for the *truly* outstanding breeding achievements (AAS, 2013). He envisioned an organization that gave a seal of approval to new varieties, a seal that instilled confidence in homeowner consumers and assured success for the breeder. Later that year his idea became reality when the All-America Selections (AAS) was created. The first AAS winners were selected the following year.

Today, All-America Selections is the oldest and most established international testing organization in North America. It recently celebrated its 80th anniversary in 2012. The organization defines itself as “a non-profit organization for evaluating new seed-grown flowers and vegetables from around the world for home garden performance” and then "introduces only the best garden performers” (AAS, 1986), (AAS, 2013). Although the wording has changed throughout the years, the purpose of All-America Selections remains essentially the same:

- Motivate breeders to improve quality and performance
• Impartially test new, unsold cultivars

• Inform home gardeners about AAS Winners and their significance  
  
(AAS, 1986), (AAS, 2013)

Seeds up for trial come from all over the world and not just from seed companies. Government institutions and private breeders are also welcome to submit samples (AAS, 1978). All that is required of the submitting party is an entry form, seed material, photo and a $600.00 entry fee (of which non-profit institutions are exempt) (AAS, 2013). There are roughly 82 trial grounds in North America today located at universities (trial grounds at Colorado State University, Fort Collins pictured above), public gardens, commercial greenhouses and breeding stations.

All-America Selections is an all-volunteer organization, including the judges. The headquarters office (currently located in Illinois) is in charge of seed sampling, score sheets, judge training, announcement of winners and providing educational services to garden instructors and lecturers (AAS, 1978). All the entries up for trial are compared against the best comparable existing variety. The expert, volunteer judges use the following criteria when judging flowers:

- Uniform in size, blossom form, color intensity
- Bloom season long (length of bloom season?)
- Weather resistance
- Disease/insect resistance
- Flower fragrance
- Novelty or uniqueness

and these when judging vegetables:

- taste, texture
- total crop yield
- compact plants
- multiple disease resistance
- novelty or uniqueness

(AAS, 1978).

Six to ten awards are given annually in four categories: Flower, Bedding Plant, Vegetable and Cool Season Bedding Plant. Once or twice a decade the AAS Gold Medal Award is given for a “breeding breakthrough” (AAS, 2013). It is important to note that AAS does not itself promote or advertise the winning plants, nor does it promise any protection for the winners. Consumers gather information about AAS Winners from magazines, newspapers and newsletters, blogs, etc. (AAS, 2013).

The AAS trial garden program was a great success; home gardeners loved learning about the winners and breeders felt free to explore unusual and different breeding projects. Inspired by the success of AAS, the All-America Rose Selections was established in 1938 and provides the same service to homeowners except focuses 100% on the rose (AARS). Trial gardens have spread over the world. The Royal Horticultural Society in England hosts its own trials at RHS Garden Wisley and shares its information with the public (RHS).
Today, other types of organizations host their own trials, and not just for the average consumer but for industry producers of many types of plants. The floriculture industry holds its own trials called the California Spring Trials (formerly Pack Trials) (CST). The results of these trials determine what flowers are trialed at gardens and greenhouses around the world. The overall winners are named “best in floriculture,” giving the breeder great esteem and flower growers valuable information (CST). The International Organization for the Ornamental Plants Industry also holds trials called Fleuroselect. What is significant about Fleuroselect is that the organization is committed to protecting and promoting the new flower varieties it awards, unlike AAS, which simply names a winner and offers no protection or advertising for the awardees (International). Fleuroselect gives awards for ornamental plants (trialed in several European countries) based on these criteria:

- **WOW FACTOR** (for retail and consumer)
- **INNOVATION VALUE** (of plant, flower or marketing)
- **LANDSCAPE USE / PATIO USE / VASE LIFE**
  - CULTURAL and TECHNICAL FEATURES:
    a. Growing performance
    b. Uniformity (plant and flower)
    c. Floriferousness (richness of flowers)
    d. Flowering season (length/period)
    e. Tolerance (climate/disease) (International)

2013: Various awards given to trial winners
Today, home gardening is as popular as it has ever been. The demands of consumers continue to drive seed breeders to develop new flower and garden vegetable varieties that will impress consumers and prove profitable for growers. When most people stop to admire a neighbor’s beautiful garden bed, they don’t always realize all the time and energy that went into making those flowers as beautiful as they are. A breeder spent years crossing plants to develop just the right size and color. The seed company invested time and money into growing enough seed for sale. Independent organizations trialed the new variety against the best existing competitor. If deemed exceptional, the seed company then spent more money marketing that variety and getting it out into the public. And finally, the homeowner has done his research and chosen plants that are proven to do well in his garden. The seed industry has come a long way from its unsteady roots. Because of trial gardens, homeowners are getting the best possible product from trustworthy and experienced breeders.
Bibliography


