

## An Annotated List of Plant We Love to Hate®

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### INTRODUCTION

By definition, ornamental herbaceous plants known as “annuals” complete their life cycle in a single growing season (e.g., *Cosmos sulphureus*), but not all commercially available “annuals” fit this definition. In some cases, it is only relevant that these plants are used for a single growing season in cultivated landscapes rather than expecting them to set seed and die before the onset of winter (e.g., *Impatiens walleriana*). For the purpose of this paper, the term “annuals” is used for plants characterized by either of the above situations. It is empirically interesting that among plant materials and landscape design professionals, annuals are often held in lower esteem than their herbaceous perennial and woody counterparts, despite their vast economic value. While the reasons may not be easily documented, this assessment may relate directly back to the fact that annuals have a useful landscape value limited to only a single season, whereas herbaceous perennials and hardy woody species last for many years.

Contemporary cultivars and hybrids of ornamental annuals are far removed from their species origins, but several species have routinely ranked as the most popular since the start of the 1950s, including (in no particular order) zinnias (*Zinnia* spp.), marigolds (*Tagetes* spp.), portulacas (*Portulaca* spp.), petunias (*Petunia* spp.), begonias (*Begonia* spp.), impatiens (*Impatiens* spp.), cosmos (*Cosmos* spp.), pansies (*Viola* spp.), and geraniums (*Pelargonium* spp.). From within this group, three genera have enjoyed great popularity in residential and commercial landscapes, but even these genera have faced challenges. Each of these three, the petunias, zinnias, and impatiens, will be highlighted in this paper for their performance challenges (despite their high popularity), as well as for recent breakthroughs aimed at significantly improving the palette of available cultivars and hybrids.

### ZINNIAS

Historically, *Z. elegans* has been the species foundation for most zinnias used in the cultivated landscape. Bright, subdued, and multiple-colored flowers combined with tall, mid-range, and dwarf plant habits characterize current cultivars and easily underscore the plant's popularity. However, in many parts of the U.S.A., landscape performance is greatly reduced in mid-summer by a susceptibility to powdery mildew (*Golovinomyces cichoracearum*), a fungal disease that can devastate plant aesthetics and lead to premature death. In the 1980s, a team of horticultural scientists at the University of Maryland screened *Zinnia* species for levels of disease resistance, leading to one, *Z. angustifolia*, which showed exceptional resistant qualities. This species was subsequently hybridized with *Z. elegans*, resulting in plants that truly remained free of disease and possessed a much more attractive and long-lasting landscape appearance. Modern day Pinwheel, Profusion, and Zahara series of zinnias set new performance standards and were also characterized by free-branching, compact habits that made them even more attractive to the landscape industry.

### PETUNIAS

Long a staple for both home gardeners and commercial designers, petunias have withstood the test of time with a seemingly endless appearance of new cultivars an-

nually. New cultivars, however, did not necessarily mean unique cultivars, a fact that was not lost on plant professionals. What was seemingly tolerated but never admired was the plant's response to rain; its flowers would collapse and its foliage would succumb to disease, making for an unacceptable appearance. Plants generally rebounded but it often took days to do so. While so-called "rain-resistant" cultivars were released with regularity, their performance was inconsistent and geographically dependent. Adding to the list of tolerated frustrations, petunias were well known to set seed in early summer following their first flush of strong flowering. This invariably required laborious deadheading, or severe and indiscriminate pruning of whole plants to remove developing seeds and encourage acceptable flowering. The petunia's entrenched value to the field of landscape color seemed to justify these efforts to restore flowering in either laborious or drastic ways. Arguably, the lack of unique, new flower colors amidst a predictably standard and static array already in the trade may have contributed to a perceived indifference among its fans. The pursuit of "something new" appeared to be stalled for petunias. While the advent of yellow flower color in the early 1980s should be given credit for uniquely advancing the color palette, the exploitation of a heretofore little known species, *P. integrifolia*, may have been the most important stimulus to spearhead a revolution in new petunia development and popularity. *Petunia integrifolia* is a prostrate, freely flowering, rapidly growing species that quickly covers landscape beds. It does not require deadheading for continuous flowering and it holds its own after typical summer rains. An improved look-alike, 'Purple Wave', soon emerged on the market, having larger flowers than *P. integrifolia* and possessing the desirable qualities of rain resistance, vigorous growth, self-cleaning, and outstanding flowering potential. In the years following the introduction of 'Purple Wave', interest and utilization of the genus expanded with renewed excitement, especially with the appearance of new cultivars from many breeders who introduced bicolor flowers of green and pink, nearly black flowers, and fast-growing ground cover habits with excellent weather resistance.

## IMPATIENS

*Impatiens walleriana* cultivars have traditionally dominated annual plant choices for shade, taking a back seat to, perhaps, only *Begonia Semperflorens* Cultorum Group. Cultivars of *I. walleriana* have not become overshadowed by the comparatively recent introductions of the New Guinea impatiens [*I. schlechteri* (syn. *hawkeri*)] but have likely suffered from a relatively slow infusion of new cultivars into the marketplace. Double-flowered types had a reputation of slower growth and fewer flowers per plant, but more contemporary introductions have produced vigorous, well-flowered cultivars. The real potential for exciting ornamental advancements within this species may be found in identifying heretofore unutilized or underutilized species, which may be used by themselves or as genetic pools for new hybridization. Several key species worth consideration and/or continued refinement include *I. auricola*, *I. repens*, *I. niamniamensis*, and *I. namchabarwensis*.

## SUMMARY

In closing, the arena for new plant development will likely continue its rapid pace for annuals, as long as there are species with the potential for landscape performance that exceeds those already available, coupled with a consumer base willing to design with and use them.