

# Meadow Landscaping: A Greenhouse Production Angle

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Remember the "prairie restoration movement" of the seventies? How about the "wildflower meadows" of the eighties, or maybe the current beautification projects along the interstate highway system? Whether in residential, commercial or industrial settings, establishing stands of native and/or non-native species over the past 20 years has generated considerable interest as low-maintenance landscape alternatives.

Successful attempts generally rely on a core of herbaceous species which provide an abundance of color all at once or over the growing season.

Perhaps the most deciding factor that has traditionally minimized greenhouse grower involvement in meadow projects has been the way in which meadows are first established. However, because the evolution of installing and appreciating meadows seems to be reverting back to what the originators wanted to avoid, there may now be a significant opening for growers. Witness the recent success of what I'd call "highway gardens" which evolved from random plots of mixed species to miles of rip-roaring color derived from individual annuals or perennials.

Historically speaking, the most common option for meadow installation was direct seeding, leaving most growers out of the loop. The required ingredients were the right amount of seed and a prepared site. While I'm still convinced that this method is feasible when done correctly, it still meets with various levels of success, acceptance, and satisfaction by clients and landscapers alike. The nemesis of direct-seeding was always the potential reservoir of dormant weed seeds that lay lurking beneath the soil, just waiting for a little cultivation and sunlight to energize their complete inundation of the site.....which frequently happened! A secondary complaint focused on the "cycling" of color throughout the season. In other words, a spectacular spring display might be followed by a summer of brown, ripening seed heads, often perceived as a dismal patch of weeds in the eyes of a less-informed public. No surprise, most people still tend to view the appearance of installed meadows with the same scrutiny they afford their home gardens.

With necessity often the fuel for invention, along with a healthy entrepreneurial spirit, other installation options soon surfaced to extend the display of color and confront the invasive weed problem. One such approach, the Virginia Tech Transplanted Meadow (VTTM), attempted to hit these issues head on and included an integral step for greenhouse growers.

Basically, the VTTM technique uses seed derived plants which are then transplanted to the prepared site, and a greenhouse is the best place to start the needed seedlings. The technique is designed to provide a non-uniform, meadow-like landscape appearance with species diversity, minimal weed presence, and an abundance of color. Early site preparation with a broad spectrum herbicide, mulch, optional pre-emergent herbicide use, and plant

competition are effective weed control measures. Transplanting the meadow, instead of direct seeding, results in rapid stand establishment that provides an early start over competing weeds. Unlike most direct-seeded perennial meadows, VTTM provides constant color within a month of transplanting which continues through to frost. Ornamental perennials have been used successfully in the VTTM but it is a challenge to achieve continuous flowering. In the eyes of meadow enthusiasts, the obvious drawbacks to an annuals-only VTTM will be the cost of annual replacement; yet to those who routinely use bedding plants in landscape situations, this is business as usual and may be an intriguing alternative.

Let's talk about species selection and seedling production rather than about their actual establishment and landscape performance. While we have worked with both annuals and perennials (natives and non-natives), most of our experience has been with annual non-natives. We do, however, examine and screen our choices with an eye for potential invasiveness. This is a contemporary hot button issue, and a legitimate one in my mind, because installed meadows afford good opportunities for "escapes" and no one wants another kudzu, that's for sure! Some of the best performers have been *Coreopsis tinctoria* (plains coreopsis), *Cosmos sulphureus* (sulfur cosmos), *Tagetes erecta* 'Crackerjack' (African marigold), *Zinnia elegans* 'Whirlygig' or 'Gold Medal Mix', *Celosia argentea plumosa* 'Pampas Plumes', and *Helianthus annuus* (midsize sunflowers), among others. Note that these are either straight species or old cultivars of popular annuals. Very few, if any, would ever show up in bedding plant inventories today because better cultivars exist.....better for conventional gardens, that is, but I suspect that field-grown cutflower growers have heard of them. VTTM exploits the very characteristics that have ordinarily alienated these species and/or cultivars: color and height diversity, non-uniform flowering, and tolerance of poor soils, drought, and low fertility. Fortunately, they also have great pest resistance and a highly competitive price for their seed, compared to their highly hybridized cousins.

The key feature of the VTTM is built right into the name, whereby seeds must first be started somewhere, preferably in a greenhouse. In fact, the first step in the VTTM process involves filling #801 packs (4" x 4" x 2") with a commercial soilless mix (e.g. Sunshine Mix #1, Fisons, Vancouver, Canada) and watering in. Determining seed sowing quantity is a simplified modification of a principle borrowed from the direct seeders: using approximately 2-4 oz. total seed/1000 square feet of bed area. Since we're transplanting each #801 block of seedlings at a minimum of 1 foot apart, a hypothetical 1000 square foot plot would contain a maximum of 1000 seedling blocks. Now here's the clincher, VTTM ignores seed size and weight. So if a total of 2 oz. of total seed were required and you were using 5 different species in the mix, you would simply divide 2 oz. by 5 to arrive at 0.4 oz. (approx. 11 grams) required for each species. Admittedly, this appears to give an advantage to smaller-seeded species, but the

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fear is surprisingly unfounded, in a visual sense. In fact, the only time we have altered this method has been to intentionally double the amount of sunflower seeds, when included, only because they are so large and their display was so desirable. After combining the seed mix with sand to increase the overall volume, broadcast the seed-sand mix over the moistened #801 packs, cover lightly with additional media, and water in again. This process is done about 4 weeks prior to the date of expected transplantation outside, which should definitely be after the frost-free date. Germination should be quick and obvious. After all, these are ornamental "weeds" which grow vigorously even without supplemental fertilization! We do, however, recommend that all seedlings receive a shot of approximately 400 ppm N on their way out the door. Greenhouse space is also maximized since all packs are grown edge to edge within flats, but this also means that the seedlings must be moved out at the anticipated date or you'll risk the detrimental effects of crowding.

As you can tell from my explanation, the VTTM is not an exact science and was never intended to be so. There are many opportunities for modification based on the client's expectations and budget, especially if a faster, more spectacular display is desired. In this case, one could use 4 oz. of seed/1000 square feet with the transplant spacing held at 1 foot apart. However, research has shown that a seed rate as low as 2 oz./1000 square feet coupled with seedling block spacing as far as 2 feet apart within a row (keep row to row spacing at 1 foot), will also produce satisfactory results, albeit a bit more slowly.

The general idea of the VTTM can also be duplicated through the use of "wildflower sods," and in many cases growers like yourself are already responsible for producing the sod for the parent company, given a nationwide demand. One of the pioneers in this area has been Wildflower Carpet® (1-800/247-6945), a Colorado-based company whose mats of mixed seedlings can be placed edge to edge, much like turf sod, or cut into pieces and spaced accordingly to stretch one's budget. Another company, Roxanna Farms out of Delaware (302/478-5573), produces Bloomin' Easy Wildflowers, also a seedling mat which may be planted in typical sod fashion or easily divided into multiple or single sections. As you can see, both companies forgo the use of individual cell packs as dictated by VTTM but still allow for sod division. The Bloomin' Easy product really facilitates separation by virtue of their Divide Rite reinforcement, a mesh placed at the bottom of the production flat that freely permits penetration by the seedlings' roots.

The ever-changing scenario for meadow establishment will likely continue to do just that.....change. Yet, the good news is that a potential and expanding new niche may emerge for greenhouse growers to satisfy the commercial demands for this non traditional product and landscape establishment technique, whatever it's called!

## South Carolina Home Grown Promotion Program

*by Vandy Vanderstelt, Golden Pines*

South Carolina Home Grown is a promotion program designed by the SCGGA to promote and educate consumers about South Carolina grown plants. We launched the program in spring of 1997 at the Spring flower shows at the Florence and Columbia Farmers Markets, by displaying our banners and informing customers of the benefits to buying locally grown plants whenever possible. Banners are to be displayed in businesses who are participating in the program and selling predominately South Carolina grown plants.

This program is designed to work for retailers establishing them as a seller of South Carolina grown plant material.

In 1998 to qualify for the program a retailer must:

- Be a member of the SCGGA.
- Sell at least 50% South Carolina grown plant material.
- Obtain the banner form the SCGGA.

Every year in November we will review and revise the program for the following year. This will allow us to keep the program up to date and evolving. Starting in January we will qualify and renew retailers for the program.

We intend to promote the quality of South Carolina grown plants and the Growers and Retailers who produce and sell them. If you are interested in participating, please call 803-332-6002 of additional information.

