



## Roots Are the Problem and Nyctinasty

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Increasingly I have perennials (plants that live for more than two years) and shrubs (a woody plant smaller than a tree, usually having multiple permanent stems branching from or near the ground) in my flower beds. Purchased annuals (plants that have a life cycle that lasts only one year) are relegated to pots.

When first starting gardens I mixed annuals and perennials. Annuals would fill the space with color by the end of the summer while perennials slowly grew over the years. My garden is fairly mature now and I don't have a lot of blank space. It's also easier to water a perennial garden, once established. It needs deeper, less frequent watering while annuals from the nursery have small roots and need almost daily watering initially.

All was going well until a couple of years ago when I started noticing that some of my favorite perennials were disappearing. For example, I don't have any peonies (*Paeonia*) left, only one red bleeding heart (*Dicentra spectabilis*), and the clematis (*Clematis spp.*) in one bed have been reduced to a couple of spindly sprouts. I thought maybe I had planted the peonies too deeply and perhaps the bleeding hearts in the wrong spots – never mind that they did well for several years! I had no idea what happened to the clematis.

A few weeks ago as I unhappily pulled out the remains of my last peony I noticed something I had not paid attention to before. While a circle of open soil surrounded the peony site I realized that under the surface there was a tight web of roots about a foot deep. These emanated from nearby creeping buttercups (*Ranunculus plentiflorus*), lilies of the valley (*Convallaria majalis*), and blue fleabane (*Erigeron 'Azure Fairy'*). The 'Aha' moment – these vigorous perennial spreaders had overtaken the underworld and out-competed the peony causing it to starve to death.

I dug out all of the buttercups and lilies of the valley and divided the fleabane. I then added new top soil and some compost. I've made a pledge to monitor the bed and remove any reoccurring undesirables.

This can be easier said than done! It is hard to remove all roots and some plants, such as the nasty weeds like bindweed (*Convolvulus arvensis*) and white top (*Cardaria draba* and *Lepidium latifolium*), can propagate from a root piece as short as one or two inches.

A number of years ago I purchased some purple lady bells (*Adenophora liliifolia*) and planted them in a corner of the yard near some wild roses (*Rosa* ?). The bells are now on the Colorado noxious weed species B list (goal is to stop the continued spread of these species and you can't purchase them in the state). Eventually, they took over. Last year I carefully dug out the entire bed. Guess what? They came back this spring in abundance. I did use Roundup on them this year and dug them out again. I'll remain vigilant and not plant anything new in the space this year.

I'm less optimistic about my vegetable garden -- I want to remain organic. I don't use herbicides or pesticides. I left part of it fallow last year and this year I have a healthy crop of dreaded white top -- I never had it in the veggie garden before. I've complained before how one white top plant seems to have a million seeds. Seeds blew into my garden from at least one plant and I will have to dig and re dig the garden this year to remove as many of the roots as possible. Some websites suggest using strong vinegar in organic beds. However, folks I've talked to said it only set the plants back for a while. And I don't know how continued use of strong vinegar impacts the soil. Dang.

So how has this changed how I'm gardening? I'm being more careful to relegate aggressive plants to certain beds where they can compete with one another.

I will create a new webpage on the AlamosaFlowers.net website that lists plants I find to be aggressive in Alamosa. Sometimes this is just what you want! I will also construct a page regarding noxious weeds. Meanwhile here is a link to the state's:  
<https://www.colorado.gov/pacific/agconservation/noxious-weed-species>

Nyctinasty is in the news! Six-year-old Edith Fuller of Tulsa, Oklahoma, successfully spelled the word in the recent Scripps National Spelling Bee. The moderator supplied the definition, "Nyctinasty is movement of a flat plant part as the opening and closing of some flowers that is associated with daily changes of temperature or light intensity." I wrote about the phenomenon in a 2012 column "Why Do Tulips Close at Night?" but never ran across the word nyctinasty! You can read it at the Alamosa Flowers website.

*"Gardening is an exercise in optimism."* Spanish Proverb