

# Saving Water and Boosting Bloom: One Gardener's Experience with Plastic Lined Beds

BY ROBERT TREADWAY\*

Optimal growth for Louisiana irises comes with good soil, fertilization, and abundant water. Having poor soil and a vanishing aquifer in this area of east-central Arkansas sent me on a search for alternative ways of growing Louisiana Irises. The usual beds required hours of running sprinklers to keep the soil moist and the plants green and lush. I had already learned the value of creating good soil, but I now needed to tackle the water problem. My experience with a drip system had not been a good one since the hard water from the well clogged the emitters. I began looking for a way to hold the water where it would be available for the plants in abundance. Even with all the best conservation measures, including mulch and soaker hoses, I still seemed to be losing a lot of moisture with some of it percolating down into the subsoil.

Lined beds seemed to be the answer to my problems. Before digging the first bed, I set out to read all the information I could find but most of the information concerned constructing bogs and was rather extensive. I also read the few articles in past *SLI*



Clumps of Louisiana irises are in bloom at the author's residence near Carlisle, Arkansas  
Photo by Robert Treadway

*Newsletters* covering alternative planting methods. The fear of "sour soil" had many people doubting the success of plantings without drainage holes. Many of the species that are the ancestors of modern Louisiana irises grow and flourish in the swamp so I couldn't see where overly wet soil would be a problem. I have even had success growing cultivars with a heavy

*I. brevicaulis* heritage directly in the muck of the filter system for my Koi fish pond with no soil at all.

The first lined bed I made, in 2000, was 70 feet by 7 feet. I removed the soil 2 foot deep and installed a rubber liner in the depression. Most of the soil was returned but room was left for organic amendments, including peat moss, alfalfa pellets, and cotton seed

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\*Robert Treadway is a commercial fish farmer by profession. A Society for Louisiana Irises board member, he lives and gardens near Carlisle, Arkansas.

meal which was hand mixed into the remaining soil.

The second set of lined beds that were installed in 2001 involved less digging. After a conversation with Marie Caillet, I decided to prepare some beds that would only be about 12 inches deep. I dug down 6-to-8 inches and put the soil to one side. The depression was then edged with 2 x 6's turned on edge and a liner of 2 layers of heavy black plastic was installed. The soil was returned to the depression with the addition of organic matter. This required less time and energy to implement. I am glad to report that growth in these more shallow beds is just as good as the ones where the soil was nearly twice the depth. Often cultivars dug from these beds had roots 2 feet long.

The third set of beds created in 2003 included the one pictured here and is entirely above ground. This bed is made out of treated lumber that is screwed together to make a bed approximately 6 x 24 feet. Stacking 2 x 6's on edge and adding a 2 x 4 laid flat will give an approximately 12 inches of growing medium, with room for an inch or two of mulch. The boards can either be staked on the outside bottom edge of the long sides or have cross boards installed to tie the sides together. Several top boards must also be nailed across the bed to hold the sides in place. Even though the sides seem sturdy and secure when water is added to the soil, the heaviness will cause the soil to push outward. A PVC liner was installed and stapled to the side 2 x 6's. The bed was then filled with super soil (compost and river soil blend) and organic matter. One new ingredient was the addition of cotton seed hulls—which I am finding is a great organic source that tends to fluff the soil and offer the added bonus of helping lower the pH.

I find that all these lined beds are very easy to water by allowing a hose to slowly flood the beds. They will become saturated with water and since the water doesn't percolate into the subsoil, it is much slower to dry out even in the hottest part of the summer. Regular beds here need watering at least twice a week to keep the plants from going dormant in the summer heat—but the lined beds need to be watered only weekly.

An added feature of this type of culture is the ability to grow irises near trees and large shrubs without much interference from tree roots. Tree roots will find their way through any holes in the liner and



The steps involved in creating an iris bed that retains water, include digging out all the existing soil (top photo); lining the excavated area with a plastic liner (middle photo); and re-filling the lined bed with soil and planting the rhizomes (bottom photo).

Photos by Robert Treadway



Rock-lined iris beds can be more aesthetically pleasing than landscape timbers.

Photo by Robert Treadway

one bed I have that is lined on the outside with rock allowed the roots from a nearby white oak tree to grow up and over the edge of the bed. After noticing poor growth and seeing the bed dry out quickly a search turn up a mass of tree roots which was quickly eradicated.

Although I have used heavy black plastic to line some of the beds, I suggest using rubber liners or PVC as these 2 materials will be more impermeable to tree roots and they may hold up for a longer period of time. I did find the PVC liner stiff to use but was much lighter than the heavy rubber (EDPM) liners used in ornamental fish ponds. An added advantage of the bed with the 2 x 4 top edging is that the edge comes in handy as seating during weeding. Also, remember to keep enough mulch on the beds to help protect the lining material from damage by sunlight.

Many people will think that this method of culture is way too involved in both expense and labor—but one has to look at the results to see if the end

justifies the means. In my opinion, the advantages of this culture far outweigh the difficulty and should be considered by gardeners as an additional method of growing Louisiana irises. One certainly doesn't have to go to these extremes, but one could look at perhaps adapting portions of this method. It has allowed me additional room to grow

more cultivars. I bury half barrels into regular flower beds and plant Louisiana irises into them—which is the same type of culture on a smaller scale.

The main problem with the above ground beds is finding the material to fill the beds. Currently I am using some 25 gallon tubs to hold my ever-growing collection of irises. I am filling them with a mixture of equal parts of sphagnum peat, pro-mix potting soil, and cotton seed hulls, but with no soil. Growth has been excellent up to this point and I will be interested in how the bloom will be during the upcoming season. The only problem I have observed so far with the current tub system is the mixture expands when watered and sometimes overflows the containers.

Personally, I find the rock lined beds to be the most aesthetically pleasing, but I can tolerate the treated wood edging and even appreciate the order it provides. In a year or two the clumps of irises will be so large that the edging material will all but go unnoticed. Digging in the beds is a bit of a challenge, but if the soil is kept wet and is soft enough one can use a short digging fork and pry the rhizomes out of the growing medium without damaging the liner.



This clump of 'Great White Hope' (Haymon 99) shows the advantages of lined iris beds.

Photo by Robert Treadway