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Using Drought Stress Indicator Plants in the Landscape

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Selecting plant materials with similar water demands is one of the most common and practical recommendations for designing landscape beds. Ensuring entire plantings are similarly suited to drier or wetter conditions can make it easier to plan irrigation practices accordingly. For example, a landscape bed can be designed with predominantly drought-tolerant plants, where irrigation can be applied less frequently, if at all. Similarly, a landscape bed can be designed with only plants that prefer sites on the more saturated side. While this is a best management practice that works particularly well for landscape beds with routine irrigation regimens, some landscape beds are irrigated based on observation only, with water applied on an as-needed basis.
One way to determine when water is warranted is to use drought stress indicator plants.

Figure 1. Coleus.

As the name implies, a plant that shows signs and symptoms of **drought stress** can serve as an **indicator** for when water should be applied. In practical terms, this would mean incorporating plant materials that display signs of wilting prematurely to less sensitive plants within the landscape. When these sensitive species start to wilt, that signals that supplementary water is necessary. Now keep in mind, other environmental conditions such as excessive light exposure may affect the aesthetics of the plants; however, if strategically selected and placed purposefully, these plants can be useful indicators of drought stress before the rest of the landscape languishes.

A couple examples of plants that can serve this purpose include coleus (*Plectranthus scutellarioides, Figure 1*), an annual plant with a vast amount of colorful varieties, and big leaf hydrangea (*Hydrangea macrophylla, Figure 2*), a shade-loving shrub with showy flowers. In the case of coleus, these plants get quite thirsty in the heat, even when full sun favoring varieties are chosen. In the case of hydrangea, wilt symptoms are often observed in afternoon heat, particularly in the sunniest of circumstances.

Consider implementing an indicator plant or two in your next landscape design, particularly if you plan to irrigate by observation only. This does not have to necessarily be intentional either. A mass of plants, such as the red coleus in photo above left, that has obvious patches where drought stress appears to be the culprit may indicate that a drip irrigation emitter may be clogged or working improperly, not providing water to that particular location. Noticing localized wilted plants in a large mass can provide the insight needed

to know to make that repair — even when you can't see the damage. In plantings that are scattered throughout a landscape, there may be minor micro-climate differences, particularly if shading structures are nearby. The photo of hydrangea to the right shows a plant located near the edge of a bed. While this may be water stress, you also have to consider other factors, as this specimen likely receives too much light and is therefore showing signs of stress. Underwatering may not necessarily be the issue then.

The concept of using indicator plants can be weaved into existing landscapes and new designs. This can also work in your vegetable garden. Tomatoes are notoriously quick wilters which can identify water stress for the rest of the garden before it occurs. Perhaps this concept is already present in your landscape, and this article just reframes your interpretation of an existing design.

Regardless, observing various stressors in the landscape and then diagnosing the root cause can inform better management practices.

Figure 2. Big leaf hydrangea.

For more information on planning a water-wise landscape bed, please contact your local LSU AgCenter Extension office or visit www.LSUAgCenter.com.

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