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Lackluster Lantana

Are you having trouble with lantana? Slow growth, little branching, or plants that are too big for their container? This e-GRO alert will focus on some common problems in lantana production.

Lantana is a fantastic annual plant. It grows well in the summer heat, has a profusion of flowers, and, whether in the landscape or in a mixed basket or patio container, can stand up to abuse. However, it is one of the crops that I consistently see with some sort of challenge during production. There are three main problems lantana regularly faces: 1) cool temperatures; 2) poor branching; and 3) controlling size. In this e-GRO Alert we will cover each of these and provide some helpful solutions.

Cool temperatures

One of the first challenges associated with growing

lantana is managing production temperatures. Lantana is as a crop that grows better with warmer air temperatures. When air temperatures are cool there are two problems that can



Figure 1. Cool production temperatures can induce phosphorous deficiency in lantana.

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occur: 1) phosphorous deficiency; and 2) delayed or slow growth.

The rate of plant growth, commonly referred to as the leaf unfolding rate, is primarily influenced by the average daily temperature. The optimum temperature is the air temperature at which the rate of plant development, or leaf unfolding rate, is fastest. Above and below this optimal temperature the rate of development slows down due. High temperatures slow down development due to stress, while cooler plant temperatures slow down development due to plant processes occurring slower. A 75 to 80 °F day air temperature and 62 to 65 °F night temperature are recommended for lantana production. However, it is common

to see lantana grown cooler than these recommended temperatures. When grown cooler, the leaf unfolding rate slows down and the time to produce a saleable crop of lantana increases. Don't turn down those air temperatures too low if you are in a hurry to finish your lantana crop! However, don't take this to an extreme; temperature above ~95 °F can cause flowers to abort, rendering the plants less saleable

In addition to slow development rates, cool air temperatures can also induce phosphorous (P) deficiencies in plants (Fig. 1). A P deficiency is commonly manifested with purpling of leaves. With cool temperatures, the ability of roots to take up P is diminished, thus leading to a lack of P



Figure 2. The small-leaved lantana on the left is a cultivar that branches freely, while the large-leaved lantana on the right does not branch freely.

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translocation to the leaves. When P deficiencies occur, simply increasing the air temperature can help remedy the problem. Don't bother adding P because P availability is likely not the problem- uptake is. Simply increase the temperature to get roots growing and active which, in turn, will promote P uptake.

Branching

Another challenge growers may experience with lantana is poor or less-than-desirable branching. Some lantana cultivars branch freely, whereas other cultivars require more assistance from growers to fill-out and branch well. Aside from trying to select lantana cultivars that branch more freely (Fig. 2), there are two ways growers can increase branching: 1) pinching; and 2) chemical plant growth regulators. There are pros and cons to each of these strategies and you can decide which of these techniques will work best for your lantana production.

Pinching a crop involves removing the apical meristem or shoot tip. Once shoot tips are removed, apical domi-

nance is lost and the axillary buds can develop into side branches. When pinching lantana, you will want to leave several leaf pairs below the pinch to allow for new branches to develop. Although the internode length between leaves will influence how much of the shoot will be removed, you'll want to leave at least two or three pairs of leaves on the plant after the pinch. Pinching should be done a few two or three weeks after transplanting, once cuttings have rooted into the container. The number of pinches can increase with the size of containers the lantana is grown in, with a single pinch for a 4-inch pot or two or three pinches for 6-inch containers and hanging baskets.

An alternative to pinching lantana by hand is to use a PGR that can increase branching. Two PGRs that are labelled for use on lantana to increase branching are dikegulac sodium (Augeo; OHP) and ethephon (Collate; Fine Americas). Both of these PGRs can enhance the branching of lantana; however, the recommended concentrations differ between these prod-

ucts. Solutions containing 400 to 1600 ppm Augeo can be applied to lantana as a foliar spray to increase the number of branches. For Collate, a 500 ppm solution applied as a foliar spray can also enhance branching. When using Collate (or any ethephon product), remember that applications may also result in flower and flower bud abortion. Be sure to apply any ethephon product well in advance of flowering so as not to delay the marketability of the crop. While ethephon can be used alone or in lieu of hand pinching, it may also be applied five to seven days after pinching to enhance the effect of pinch-

ing and ensure axillary buds develop into branches (similar to the “Florel sandwich” concept with poinsettia production).

lantana, identify the vigor of your cultivars, as this will help you start to get an idea of how much growth regulation will be required.

Controlling size

Another challenge with producing containerized lantana is controlling the size of plants. Similar to variation in branching, lantana cultivars vary widely in their vigor. Some series are bred for use in containers and have a naturally compact habit, whereas some cultivars are bred for landscape performance and can be a challenge to keep appropriately sized in containers (Fig. 3). When putting together a plan for producing

Foliar sprays containing chlormequat chloride (Cycocel, Citadel), paclobutrazol (Bonzi, Piccolo, Paczol), or uniconazole (Sumagic, Concise) are all recommended for controlling growth, though recommended concentrations vary among the different active ingredients. For uniconazole, 10 to 20 ppm is recommended, while up to 3,000 ppm chlormequat can be applied; paclobutrazol concentrations for sprays should be between 20 and



Figure 3. The growth habit of lantana cultivars can vary widely among series. On the left we have a cultivar that is well-suited for container culture and on the right there is a cultivar for landscapes.

40 ppm. While making spray applications is relatively simple, drench applications may result in longer lasting controls. Flurprimidol (Topflor), paclobutrazol, and uniconazole all have activity when applied to lantana though, like sprays, the recommended concentration varies with the active ingredient. For 4- and 4.5-inch containers 2 ppm flurprimidol or uniconazole

are useful in controlling growth of vigorous cultivars; cut concentrations in half for intermediate cultivars. However, always be sure to perform in-house trials to evaluate the effectiveness of PGR treatments with your cultivars under your individual growing conditions to see what will be the most effective treatment.

Take home message

Lantana provides splashes of color throughout the summer in containers and landscapes. Although producing lantana crops that are full and compact in a timely manner can be a challenge, hopefully some of the suggestions provided in this e-GRO Alert will assist you in growing the crop that you want to market.