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Guide to Successfully Evaluating Growing Media

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Frequent product evaluations are crucial to keeping current with new product offerings and achieve optimal crop performance. One effective method is through comparative product demonstrations, in which a non-biased, systematic approach is used to determine if a new product can benefit your crops and

business. However, to ensure that products are evaluated properly and results can be replicated, certain protocols must be followed. Here are some helpful guidelines for setting up a product evaluation of growing media.

Stage One: Determine the objectives

First, it's important to determine the goal(s) and objective(s) you wish to achieve when evaluating a new product. In the case of growing media, here are some basic questions you should ask:

1. How does this product differ from my current growing media? (e.g., composition or type of material used)
2. Why might this product outperform my current option? (e.g., shorter growth period, reduced shrinkage)
3. What is the return on investment (ROI) with this product? (e.g., time or cost savings)

The reality is that not all growing media options available on the market are created equal. Some options are more uniform/consistent in blend, some contain different materials (e.g., peat moss, bark, wood fiber, perlite, vermiculite), and some contain biological additives like mycorrhizae and/or *Bacillus*. It is important to analyze the pros and cons of each, as just selecting the cheapest option does not always equate to more savings.

Stage Two: Product demonstration setup

Setting up a comparative product evaluation of growing media requires precise planning and commitment by all parties to achieve accurate results. For example, variables like crop type, growing location and time of year should all be taken into consideration beforehand, as they can affect the outcome of an evaluation. Preferably, start with a crop that you understand well and have had success growing in the past, rather than introduce another variable into the equation. Likewise, devote the resources and team members necessary to track and monitor the product evaluation. Inconsistent monitoring provides inconsistent results, leading to wasted time and money.



Basil plants were tagged in the greenhouse for a “side-by-side” plant growth comparison. | Photo Credit: Premier Tech

Steps:

1. Fill up the same number of each container type with each growing media product being evaluated. To accurately assess an evaluation, a minimum of 20 plants per treatment is recommended.
2. Clearly define and label each treatment so that plants can be identified. Quickly identify treatments by using colored tags or labels.
3. Plant the **same type** of plant/cultivar into **each growing media** treatment the **same day**.
4. Move all plants into the “dedicated grow zone” within the greenhouse or nursery where plants will stay for the remainder of the evaluation.
5. Set up irrigation/fertigation schedules accordingly.

Note: Plants selected for the product demonstration should be of comparable size, and all growing conditions should be as uniform as possible between light intensity, air movement and spacing. Different growing media formulations may require separate and specific irrigation/fertigation schedules, as each treatment can have different water retention and dry-down characteristics. Product evaluations on new growing media will often fail due to over or underwatering, as treatment plants are all maintained the same. Plants should not be moved from the grow zone, as they can get lost, discarded or sold before the evaluation is completed.

Stage Three: Monitoring the product evaluation

Monitoring a growing media product evaluation requires constant organization and planning to properly assess plant growth over the duration of the growing cycle. The first step is to determine whether you are working with a fast-growing crop that can be finished in a few weeks, such as microgreens, an annual crop, or a longer-term crop, like poinsettias or perennials. Shorter-term crops will require daily monitoring, whereas long-term crops will require weekly monitoring. Since every crop is unique, parameters used to evaluate one crop may not always apply to another. However, the most traditionally tracked variables are size index/overall plant growth, grow time, flowering, rooting and survival rate.

Once all individual plant parameters have been identified, the next step is to collect data, record observations and take notes. Each monitoring interval should include any cultural notes, such as day/night temperatures, application of any chemicals (growth regulators, pesticides, fertilizer program modifications) and any environmental changes (e.g., shade applied to or removed from greenhouse). Additionally, make sure to record any changes in crop grow time, reduction of pesticides or fungicides, or observation of labor/time management. These additional details should be evaluated to determine a return on investment from a new product. Finally, pictures of plants are an excellent way to support observational data collected. Take plant photos against a white background with a ruler or tape measure to document growth accurately.



Example of SunPatiens grown in two different growing media options exhibiting different root ball structures. | Photo Credit: Premier Tech

Upon conclusion of the product evaluation, record the monitored plant's fresh weight, dry weight, root length and root mass. Also, send plant tissue and media samples to a laboratory for comparative analysis. Once results have been determined for each of the selected parameters, you can determine with certainty the best growing media for your crop.



Example of Alocasia grown for a product evaluation. | Photo Credit: Premier Tech

Note: To conduct a fair and accurate product evaluation of growing media, you, as a grower, must be honest and committed to the evaluation. The number of people allowed access to evaluated plants should be restricted to prevent or reduce variability and interference. Data collection can require several hours to complete, and technical assistance is sometimes required to interpret results or observations.

Takeaways

Whether you are evaluating a new plant variety, chemical, fertilizer or growing medium, comparative product demonstrations can be used to determine if a new product can benefit your business. Nonetheless, certain protocols, along with proper planning, are required to ensure the accuracy of the results you collect. It is best to prepare ahead of time, dedicate a specific “grow zone,” and devote people to properly monitor and collect data. Once these results have been obtained, you

can use them to determine if these benefits provide a return on your investment. By following a set protocol, you can verify if a new product provides the desired benefit for your growing environment. **IG**

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