

MANAGING IMPATIENS WALLERIANA LEAF CURL

With the introduction of downy mildew (DM)-resistant series like Beacon® and Imara™ XDR, impatiens are making a comeback. However, growers have recently reported that DM-resistant and legacy varieties of impatiens are prone to a leaf curl disorder.

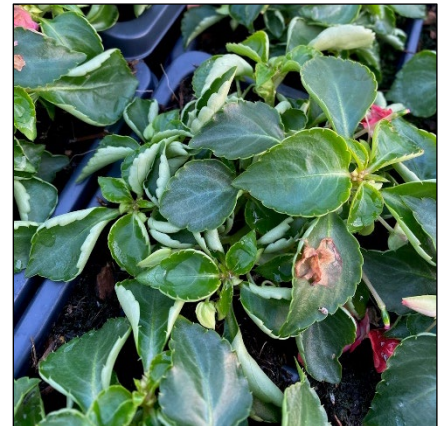
Leaf curl is not considered detrimental to plant health, nor is it a symptom of DM or other diseases, but it can impact appearance and salability of both plugs and finished crops.



Leaf curl occurs in varying degrees for both downy mildew-resistant and non-resistant impatiens series.

What Is Impatiens Leaf Curl?

- **Leaf curl on impatiens is not a new disorder.** The near-absence of *I. walleriana* from North American greenhouses for the last decade just makes it feel new.
- **Leaf curl is the plant's attempt to transpire** (release water vapor). Gas exchange sites on the undersides of leaves (stomata) strain to transpire under high humidity. Leaves curl to expose stomata to the environment as much as possible to increase transpiration.



Prevention of leaf curl in finished production is critical. Affected plants may not recover or be able to cover up curled leaves with new growth.

What Causes Leaf Curl?

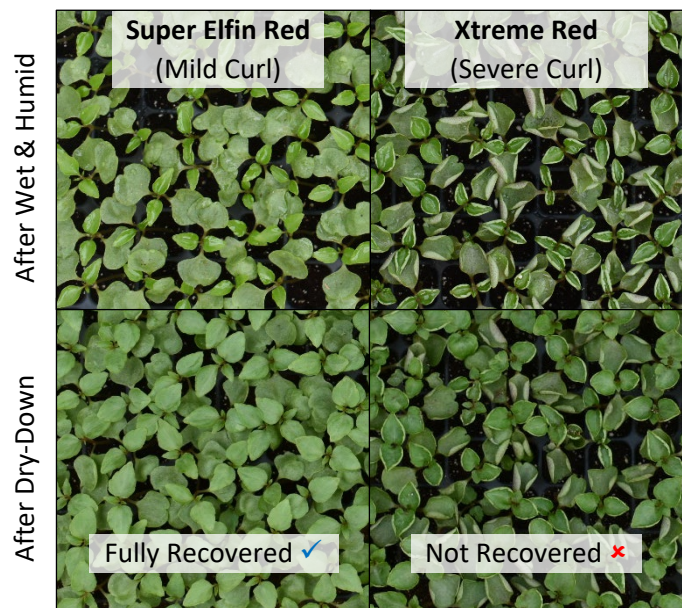
- Substrate moisture consistently above a level 4 on the 1–5 scale (1 = air dry, 5 = saturated) is the biggest factor that contributes to leaf curl.
- Greenhouse relative humidity (RH) above ~80% predisposes plants to leaf curl.
- High RH + high soil moisture amplifies leaf curl symptoms.
- Genetics are a factor, but not a guarantee that leaf curl will (or will not) occur.
 - Both DM-resistant and non-resistant legacy series of impatiens are susceptible to leaf curl if environmental and crop cultural conditions are conducive.
 - Likely all *I. walleriana* are affected by this disorder to some degree.



Severity of leaf curl depends on how wet growing media is and greenhouse relative humidity (RH).

Key Take-Home Messages

1. Some impatiens series are more sensitive to leaf curl than others.
2. Leaf curl severity within a given series varies, but follows a general trend of:
Most Severe: Red > Orange > Violet : **Least Severe**
3. Symptoms can appear within 24 hours of the environment and cultural conditions becoming conducive to leaf curl.
4. Plants can recover from mild and moderate leaf curl, but severely curled leaves may not recover – even under ideal conditions.
5. Severe leaf curl that occurs in the plug stage can be covered up by new growth after transplant.
6. Severe leaf curl that occurs after flower initiation may be difficult to mask until blooms are spent and subsequent vegetative growth can cover curled leaves.
7. Applying PGRs to affected plants may increase recovery time from leaf curl.



Curl severity affects the plant's ability to recover. Mild curl is recoverable; severe curl is often permanent.

Managing Leaf Curl

- Do not let substrate moisture exceed a level 4 on the 1–5 moisture scale for longer than 24 hours.
 - If overwatering occurs, dry crops down to a moisture level 2 or 3 within 24 hours to avoid a severe leaf curl incident.
- Maintain greenhouse RH below 80%.
 - Run dehumidification cycles before sundown to prevent RH from spiking in the evening.
 - “Burp” the greenhouse during daylight hours when RH remains persistently high.
 - Increase greenhouse air flow to break up the stagnant layer of humid air in the crop canopy (boundary layer) and encourage transpiration.

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