

Guidelines for Plants and Flowers in Museums and Historic Settings

Introduction

Whether you are introducing fresh or dried plants or flowers into the building for a special event, exhibit, into galleries or interior landscapes, there is a risk of introducing pests, and of providing a food source for museum pests. Risk factors vary depending on the type of plant, the potting medium, and the vessel. Pollen can act as an attractant, and moist soil and dead foliage can become a habitat. For long term installations and office plants, over-watering of plants and poor maintenance also poses a risk.

The risks of introducing plants into your heritage institution include:

- The introduction of powderpost beetles through wood, wicker, or bamboo baskets. Avoid these baskets if at all possible;
- Cigarette beetles will use dried flowers as a food source;
- Adult carpet beetles *Anthrenus* and *Attegenus* feed on pollen. They can be found in flowering plants.
- Mold spores can also be present
- Pollen can stain neighboring surfaces
- Dropped leaves and petals can adhere to surfaces or become a food source for insects

Additional insects that plants can harbor:

- thrips
- aphids
- scale insects
- crickets
- ants
- springtails
- psocids
- mites
- any vegetarian insect
- wireworm larvae

**The Surinam cockroach, found in tropical and subtropical regions, burrows into soil.*

Mitigation

Create an office policy that includes no plants or flowers in office spaces and have a procedure in place for when floral arrangements are delivered to staff. In dealing with external vendors or contractors, it is important to communicate your policies and procedures in advance.

Sourcing of Plant Material

If at all possible, substitute live plants with silk or other fake flowers. This will provide the lowest risk. Alternatively, use succulents or air plants in the arrangements. Terrariums could be a good alternative to a floral arrangement. Foraged/found material is discouraged or must be treated prior to use.

If your organization is considering introducing plants or cut flowers, first see if it is possible to avoid vases with standing water. Use dry foam floral bricks.

Quarantine

If you have incoming potted plants with soil, try and have the plants delivered at least two weeks prior to displaying them. Quarantine the plants and monitor for pest activity in the soil and throughout the flowers and foliage. Likewise, if you have potted plants in office areas that are showing signs of pest activity, remove it to a quarantine location, monitor, and treat as needed.

Monitoring

Inspect the underside of leaves and inside flowers. Gently shake the plants by running your hands through them. Remove loose leaves and petals. Consider removing large stamens from flowering plants such as lilies. Other problematic species could include peonies, which shed petals, and snapdragons, which drip sap. Additional monitoring activity can include:

- Look for white powder and small bite marks or trails on or under leaves.
- Look for powder or scale on the stems
- Look for webbing, or little red dots that move (spider mites)
- Run your finger over leaves and look if anything is squashed or smeared on your finger.
- Check new growth (appetizing to insects)
- If the plants or flowers arrive several days before an event (this is best if it can be arranged) check them again a few days after first inspection. Because the plants will usually be sprayed before shipping, it can take a few days for new pests to hatch

Treatments: Insecticides/Fungicides

Since fungus gnats live within the top two inches of soil, drying out the topsoil layer will inhibit growth. Remove dead flower heads and leaves. Further treatment could involve spraying an insecticidal soap.

Adequately dried plant material can be treated with low temperature, anoxic or controlled atmosphere treatments.

Please note that fumigation is not an option to anything living, including plants. The fumigation process will kill live plants. Heat and low temperature treatments are not an option for anything living.

Disposal

If plants or floral landscapes become infested disposal may be the best option. Replace with new soil and new plants as needed.

Bibliography and Sources

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