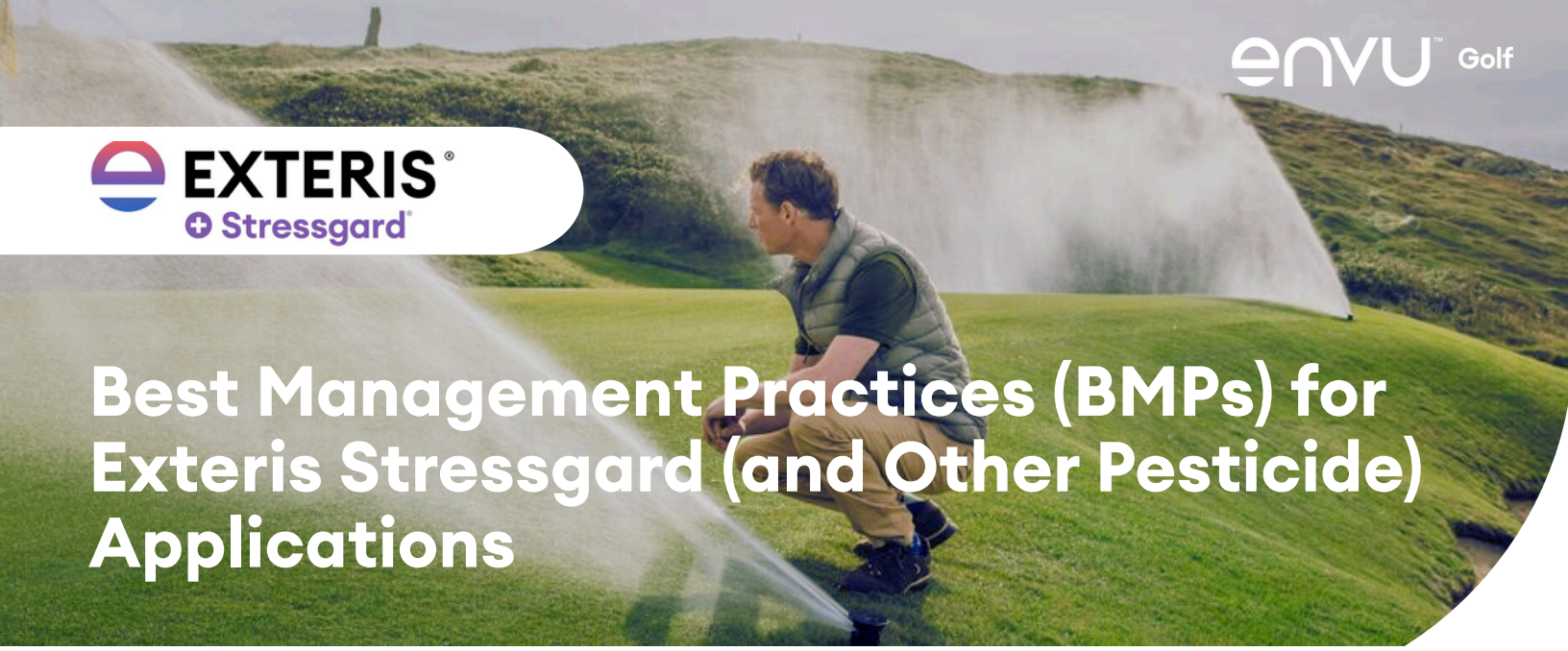

Best Management Practices (BMPs) for Exteris Stressgard (and Other Pesticide) Applications

Exteris Stressgard fungicides are an important tool for golf course superintendents across the globe, protecting turfgrass from troublesome diseases and improving plant quality. The following guide provides best management practices for handling and applying Exteris in a manner that minimizes risk of adverse effects to the applicator, aquatic systems and those that enjoy the golf courses it protects.

1. General Principles

- **Label is the Law:** Always read and follow the pesticide label. It specifies legal requirements for use, including application rates, timing, and protective equipment.
- **Trained Applicators Only:** Ensure that only trained applicators mix, load, or apply pesticides. All applicators should understand site-specific risks such as water hazards and nearby residential areas.
- **Timing is Key:** Follow label instructions regarding re-entry timing. Schedule applications outside of peak times–early morning or after closure.
- Calibrate Equipment Regularly: Sprayers and other application tools must be calibrated regularly to ensure accurate rates and coverage.

2. Site-Specific Considerations for Golf Courses

2.1 Buffer Zones

- **Water Features:** Maintain buffer zones as directed by the label around ponds, lakes, streams, or drainage swales. Use low-drift nozzles and spray shields when working near water. Where possible and practical, extend buffer zones further than the label-directed distances to further protect water bodies.
- **Designated No-Spray Zones:** Establish permanent no-spray zones around particularly sensitive areas (e.g., wetlands, water bodies, out-of-play roughs with protected vegetation).

2.2 Wind Speed and Direction

- **Wind Monitoring:** Use local weather forecasts or on-site weather stations
- **Wind Monitoring:** Use local weather forecasts or on-site weather stations to get local wind conditions. Only apply when wind speeds are allowable in accordance with the label.
- **Wind Direction:** Ensure wind direction is away from people and sensitive areas to or off-target exposure.

- **Avoid Drift Conditions:** Consider making applications another time or day during dead calm (risk of inversion) or gusty periods (risk of drift).

2.3 Temperature and Humidity

- **Apply During Optimal Conditions:** Schedule applications during early morning or late afternoon when temperatures are <30°C (86°F) and humidity is moderate (>40% RH).
- **Avoid Volatile Conditions:** High heat and low humidity increase vapor drift and degradation of products like ester-based formulations–avoid during such times.

2.4 Leaf Wetness and Evapotranspiration

- **Apply When Conditions Favor Evapotranspiration:** For foliar absorbed products apply during periods of optimal drying conditions to ensure product uptake and prevent runoff. Avoid prolonged leaf wetness.
- **Use Weather Data:** Monitor evapotranspiration and dew point data to guide application timing.

2.5 Sloped Areas

- **Minimize Spray on Slopes:** Avoid applying pesticides to steep slopes (>15%) adjacent to drainage areas unless using drift- and runoff-reduction practices (e.g., buffer strips, targeted application).
- **Apply Cross-Slope:** When necessary, apply across slopes to reduce movement and improve product retention.

2.6 Saturated Soils

- **Do Not Spray on Wet Soils:** Postpone applications if recent rainfall or irrigation has left soils saturated. Applications on saturated soils increase risk of runoff into storm drains or water features.
- **Assess Drainage Areas:** Know which areas on the property drain into environmentally sensitive areas, and use caution when treating these sites.

2.7 Rainfall and Irrigation

- **Follow Rainfast Intervals:** Avoid application if rainfall is expected within the specified rainfast period (usually 1–24 hours).
- **Delay Irrigation Appropriately:** For soil directed treatments, follow the label for irrigation instructions regarding when and how much irrigation to apply after application. For foliar-absorbed products, avoid irrigation altogether until product has dried.

3. Application Practices

3.1 Boom Sprayer Use on Golf Courses

- **Use Turf-Specific Nozzles:** Install low-drift flat fan nozzles or air induction nozzles to reduce drift and ensure uniform coverage.
- **Boom Height and Speed:** Maintain a boom height of 18–24 inches or 45-60 centimeters above the turf. Operate at consistent ground speed to avoid over- or under-application. Consider shrouded booms if in a perennially windy environment.
- **GPS/GIS Tracking:** If possible, use GPS guidance or mapping software to track treated areas, reduce overlaps, and improve recordkeeping.

3.2 Spot and Targeted Applications

- **Spot Application When Possible:** Reduce total pesticide use and protect non-target turf by conducting spot treatments on localized infestations or disease patches.
- **Rotate Chemistries:** Use an Integrated Pest Management (IPM) approach with tank-mixing and/or rotating multiple modes of action to prevent resistance development.

4. Spray Rinsate and Wastewater Management

4.1 Equipment Rinsing

- **Designated Wash Areas Only:** Rinse sprayers and equipment only at designated wash pads with containment and recovery systems. Never rinse near storm drains or water features.
- **Never Rinse on Turf or Soil:** Avoid field-rinsing unless label allows for rinsate reuse and the site is appropriate for disposal.

4.2 Rinsate Reuse

- **Reapply Rinsate on Turf:** If the product label allows, apply rinsate to previously untreated turf at label-approved rates. Do not exceed cumulative maximum application limits.
- **Mix Only What You Need:** Estimate tank mix volumes accurately to avoid leftover spray and minimize rinsate generation.

4.3 Rinsate Containment and Filtration

- **Capture and Store Rinsate:** Containment pads should direct runoff to a sump, tank, or dedicated waste management system.
- **Filter Before Reuse or Disposal:** If reapplying is not feasible, filter rinsate or dispose of through a licensed hazardous waste handler, following local regulations.

5. Personal Protective Equipment (PPE)

5.1 PPE Requirements

- **Follow Label Instructions:** Use the label specified PPE required to use the product safely.

5.2 PPE Selection and Fit

- **Ensure Proper Fit:** PPE must be correctly sized.
- **Chemical Resistance:** Select gear appropriate for the chemicals being handled.
- **No Substitutions:** Only use PPE approved for the task and product.

5.3 PPE Use and Maintenance

- **Inspect Before Use:** Check for damage or contamination.
- **Decontaminate After Use:** Clean reusable PPE after each use. Dispose of single-use PPE properly.
- **Do Not Wear Home:** Prevent secondary exposure by removing PPE before leaving the work area.

5.4 Respirator Use (if required)

- **Medical Clearance Required:** Applicators must be cleared to wear respirators.
- **Fit Testing and Training:** Required annually for tight-fitting respirators.
- Filter Replacement: Follow manufacturer guidance.

5.5 Emergency PPE Readiness

- **Spill Kits with Extra PPE:** Stock extras in each spray rig.
- **Emergency Washing Station:** Provide eyewash and water source near mixing areas.