

## **Diquat Dibromide Fact Sheet – Aquatic Herbicide**

- Diquat dibromide, also known as “diquat,” is an important aquatic herbicide and algaecide registered for use in aquatic, landscape, and agricultural settings.
- It is used as an aquatic herbicide for the control of invasive and nuisance weeds in ponds, lakes, and other waterbodies.

### **Aquatic Weed Management**

- Aquatic weed management is a site-specific, integrated approach that may include prevention strategies, cultural controls like water level management, mechanical methods such as manual weed removal, and the application of chemical treatments.
- Chemical aquatic weed control, using herbicides such as diquat, is often a necessary component of aquatic weed management programs throughout the United States.
- Herbicides can be used to treat water bodies for nonnative, invasive plants such as hydrilla, which is a rapidly growing, submerged aquatic weed.
- In 2022, hydrilla was one of the top three aquatic weeds targeted in terms of sales of all aquatic herbicides.<sup>1</sup>
- Effective and timely control of hydrilla is critical because this species can grow up to a foot per day in certain conditions and it can quickly recolonize an area from small plant fragments.
- Hydrilla can form dense mats of vegetation in water bodies that can limit light availability for native plants, creating changes in river flow, water temperature, and dissolved oxygen that can have negative effects on the aquatic ecosystem.
- Blue-green algal “blooms” can occur in areas with dense infestation of aquatic weeds (e.g., hydrilla). These algae produce a toxin which affects the nervous system of some birds that ingest the algae by, for example, eating contaminated hydrilla or drinking contaminated water. Hydrilla serves as a host plant for the algae. Algae produced toxins have been linked to the death of waterfowl and eagles in the southern United States.<sup>2</sup>
- Hydrilla can also impede boat traffic in waterways, create entanglements at water infrastructure facilities, and create recreation hazards.

### **Aquatic Uses of Diquat**

- Diquat dibromide is fast acting and can be used to quickly control free floating and submerged weeds.
- Diquat dibromide effectively controls a wide range of aquatic weeds including hydrilla, duckweed, watermeal, water lettuce and salvinia. It is also used to a lesser extent for algae control.

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<sup>1</sup> Nonagricultural Market Research Data (NMRD). 2024. Study of Industrial Vegetation Management in 2022. [Accessed July 2025].

<sup>2</sup> USGS NOAA Great Lakes Aquatic Nonindigenous Species Information System. Hydrilla verticillata (hydrilla): impact type Disease/Parasite/Toxicity. <https://nas.er.usgs.gov/queries/greatlakes/Impacts/ImpactsInfo.aspx?speciesID=6&type=1> [Accessed July 2025]

### **EPA's Risk Assessment of Diquat**

EPA evaluated the human and environmental risks from the uses of diquat, including its use as an aquatic herbicide. EPA found:

- There are no dietary or residential post-application risks of concern for diquat dibromide including those resulting from aquatic (swimming) exposures.
- The chronic dietary toxicological point of departure used in the human health risk assessment is based on the most sensitive adverse effect (toxicity to eyes) and is protective of any potential intestinal effects.
- Several worker exposure scenarios presented inhalation risk estimates of concern for many uses, including handlers treating aquatic weeds, assuming the level of personal protective equipment (PPE) specified on labels at that time.
- Diquat is persistent in aquatic environments but strongly binds to sediment. Risks to aquatic animals in the water can be reduced as a result of binding to sediment; however, EPA has previously concluded that the aquatic uses present potential risks to fish (surrogates for reptiles and aquatic-phase amphibians), aquatic invertebrates and aquatic plants. Additionally, some aquatic applications of diquat that are sprayed on the surface could result in drift onto terrestrial animals and plants, but the exposure may be limited. For the control of hydrilla, applications are likely to be made subsurface.

### **EPA's Risk Management of Diquat**

- EPA completed an [Interim Registration Review Decision \(ID\)](#) in 2019.
- Due to diquat being a severe irritant, EPA required the use of protective eyewear to address potential damage to the eyes following exposure to diquat for occupational handlers.
- EPA also required respirators to address potential inhalation risks to occupational handlers (workers) and prohibited backpack sprayers for both terrestrial and aquatic applications.
- EPA required application rate reductions for several uses (burndown uses on agricultural sites, production ornamentals, and use on aquatic surface weeds) to reduce ecological risk to non-target organisms. Use on cattails that grow on the edge of waterbodies is also now prohibited.
- In a 2020 update to the ID for diquat, EPA clarified the restriction to wait at least 7 days between diquat dibromide applications to adjacent treatment areas within the same waterbody. This minimizes the chance of anoxic conditions from the decomposition of dead biomass after the treatment of aquatic weeds.
- For more information about EPA's review of diquat, please visit the docket for [Diquat Dibromide Registration Review](#).

### **US Army Corps Connecticut River Hydrilla Research & Demonstration Project**

- The USACE is performing a multi-year study to compare the results of multiple herbicides to see which work best on this new unique and highly invasive strain of hydrilla that originated in the lower Connecticut River, and to assess how well native species survive the selective treatments for hydrilla.

- USACE used diquat last year in two locations as part of the ongoing Connecticut River Hydrilla Research & Demonstration project.
- USACE applied for local CT Department of Energy and Environmental Protection (DEEP) pesticides permits for 12 new sites to be added to the demonstration project site list. The 30-day public comment period (ends on 7/13/25) for the supplemental Environmental Assessment.
  - The public comment period was only for the environmental assessment, not the application.
  - Several CT application permits are pending approval currently, with the intention to possibly make applications at only one new application site in 2025.
  - Other applications *may* occur in 2026, pending approval of additional permits.
- To learn more, click [here](#).