General Product Information Sheet

SubmerSeed®

Composite Seeding Technology (SCST)

Technology Overview

General Description

SubmerSeed® is a composite material consisting of a dense aggregate core and viable wetland seeds held in place with clay or clay-sized material and organic polymers (Figure 1). The technology provides an alternative to traditional means of plant propagation in wetland/aquatic settings, especially when confronted with the challenges of establishing a favorable vegetative community in habitats prone to fluctuating water levels.

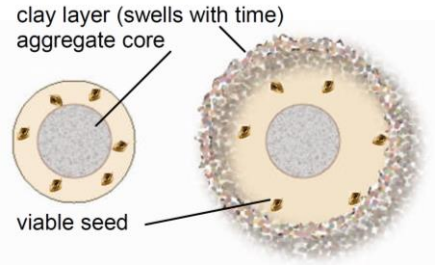

Figure 1. Configuration of Typical SubmerSeed® Particle.

The typical formulation of dry product relies on the nutrients available in the surrounding water and/or underlying sediments to support germination and nourish sustained growth. However, fertilizer-amended product formulations can also be made available.

Typical Product Usage

For most projects, SubmerSeed use generally involves broadcasting dry masses of the product through water (or in areas adjacent to water) across the surface of the sediment. SubmerSeed can be applied using commonly available equipment and technologies and, in smaller-scale installations, can simply be dispersed by hand.

Product coverage rates will vary depending on the species composition incorporated into the material and the site-specific requirements for the project. However, a rate of 1,500 to 2,500 pounds of dry product per acre (0.03 – 0.06 lbs/SF) is a reasonable approximation of the quantity of material needed for a typical application.

Photograph 1. Close-up of typical SubmerSeed particles (approximate size: ¼ - ½")

SubmerSeed Advantages Over Existing Propagation Methods

SubmerSeed can out-perform vegetative plug installation (the planting of seedlings, cuttings, or other established plant materials) through cost savings in both materials and labor. The competitive advantage of SCST is particularly striking when costing large-scale (> 1 acre) installation projects. Additionally, contrary to plug installation, SCST readily allows for both the introduction of a single species or a suite of desired species (a "mix") without significant labor in the field.

SubmerSeed can out-perform traditional seeding (broadcasting, drilling, hydro-seeding, etc.) in some applications in that SCST insures reliable, accurate seed placement – thus reducing the risk of seed loss by wave action, currents, or tidal forces. And unlike traditional seeding methods, SubmerSeed is appropriate for seed introduction in inundated environments (provided the species selected is well adapted for germination and growth at depth).

Species Selection

While current product development efforts have placed emphasis on freshwater emergent species, future development aims to encompass a wider breadth of herbaceous perennial plants. Special attention will be paid to submerged species (SAVs), estuarine species, and marine (saltwater tolerant) plants.

NOTE: SCST also has application for woody species and seeds of grasses and flowering plants (forbes) at home in more **upland settings**. The land-based companion product – called **SeedSet™** – provides the same accurate and reliable seed delivery, allowing for minimal seed loss (waste), even seed dispersal, and the consistent seed-to-soil contact that is so crucial to successful seedling establishment and development.

Potential Applications

Possible uses of the SubmerSeed technology are numerous and include:

- Wetland Construction, Restoration, Mitigation & Enhancement Projects
- Farm Ponds and Borrow Area Shorelines & Littoral Shelves
- Stream Bank Stabilization Projects
- Habitat Reclamation Areas
- Invasive Species Eradication Areas
- Waste Water Facilities
- Confined Disposal Facilities (CDFs)
- Storm Water Retention Ponds
- Aquaculture
- Golf Course Waterways
- Native Nurseries
- Hunting and Fishing Clubs
- Water Gardening and Landscaping

Photograph 2. Close-up of early germination

submerseed®

For more information, including a list of available species, performance reports, and field pilot studies, please contact AquaBlok, Ltd. at:

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