High Efficiency Bioreactor

Opportunity

The University of Guelph is seeking a partner interested in commercializing stock products for the agricultural sector. The invention is a high efficiency bioreactor for wholesale producers of plants/seeds serving the horticulture industry. The bioreactor directly competes with traditional gel-based systems by improving operational efficiency in the following ways:

- Accelerates growth rates to shorten production cycles,
- Eliminates labor and damage associated with root washing,
- Reduces media costs by as much as 25% by eliminating agar.

Central to the system’s design is a vessel that contains ridges with abutments around the outer walls. This feature allows the easy and secure installation of modules, including:

1. **LED light lid** for uniform light and spectrum control,
2. **two-piece grid** for holding plants upright during rooting,
3. **air scrubber** to balance humidity and CO2,
4. **media dispenser** for maintaining a thin layer of oxygen-rich liquid media.

Advantages

- **Patent rights** to the vessel and rooting grid. These form the foundation of the bioreactor and creates a unique opportunity for additional product launches (modules) and brand loyalty.
- **Innovation support** from **GRIPP**, a premier research institute at the University of Guelph working to improve the efficiency of propagating disease / virus / pest free plants and seeds for domestic and international markets.