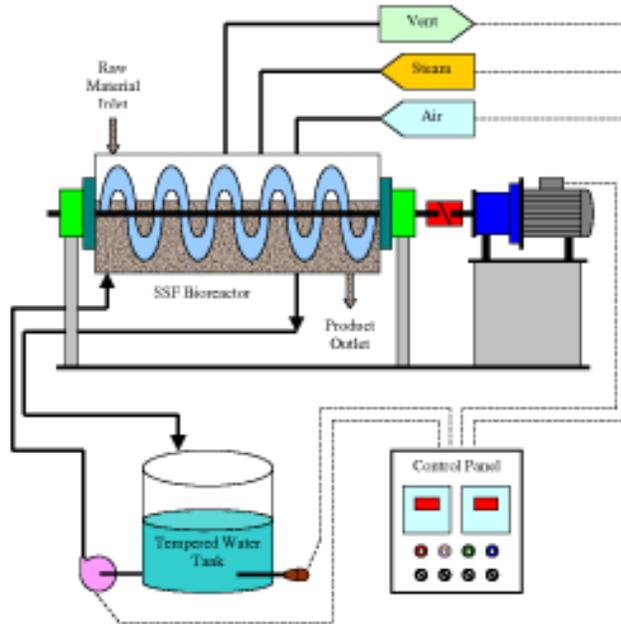


## SOLID STATE FERMENTOR



We offer a range of sophisticated solid-state fermentation systems.

Solid-state fermentation (SSF) holds tremendous potential for the manufacture of several products. It is of special interest in those processes where the crude fermented products may be used directly.

It offers numerous advantages over submerged fermentation (SmF), including high volumetric productivity, relatively higher concentration of the products, less effluent generation, requirement for simple fermentation equipments, etc. It is an eco-friendly process since it utilizes agro-industrial residues as substrates.

SSF processes are distinct from SmF culturing, since microbial growth and product formation occurs at or near the surface of the solid substrate particle, which has low moisture content. It is therefore crucial to provide optimized water content, and control

the water activity of the fermenting substrate.

Over the years, different types of bioreactors such as pan, tray, drum & deep-trough have been employed as SSF systems.

We offer a simple and practical fermenter with automation. Factors considered in our design include :-

1. Pre-treatment of the substrate
2. Maintenance of uniformity in the environment of the SSF system
3. Monitoring & control of relative humidity
4. Monitoring & control of temperature of fermenting matter & removal of metabolic heat
5. Monitoring & control of pH
6. Monitoring & control of the gaseous atmosphere, i.e. oxygen consumption rate and carbon dioxide evolution rate

Some other design considerations include :-

1. Capital investment
2. Achieving high yields
3. Suitability for high temperature cultivation
4. Suitability for use with genetically improved strains

**Wide range of systems are available to suit the lab scale, pilot plant scale & commercial scale.**

Manufactured in India by :-

**NAVIN PROCESS SYSTEMS**

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