

Seed Treatment

Superabsorbent Polymer (SAP)

Water management for improved seedling success



The Benefits of Superabsorbent Polymer (SAP)

Developed exclusively for the agriculture and horticulture industries, Superabsorbent Polymer (SAP) is a proven water management tool for growing plants. Field and laboratory tested hydrogels have been proven effective in absorbing many times their mass in water for optimal plant growth. As a seed treatment, SAP can improve seedling germination, survival and growth while delaying seedling stress from drying field conditions.

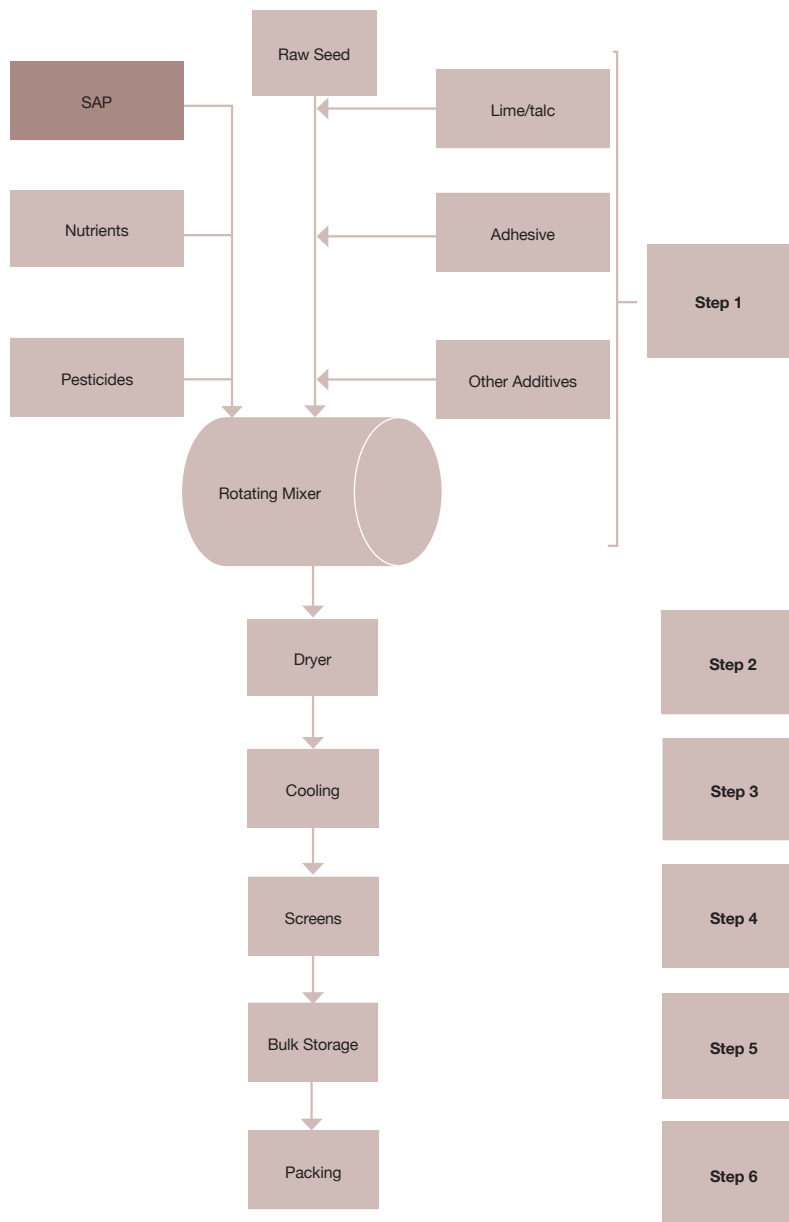
Generalized Manufacturing Procedure

Uniformly treated, dust free seeds are necessary for modern precision planting equipment. Thus, most seed processing is conducted on a batch basis in which a rotating mixer has all constituent materials uniformly metered into the system. The sequence of presentation and combination of constituent materials will vary. Thus, the information provided herein is a general guide that should aid in process development.

In dealing with SAP, it is critical that little to no water be used so as to avoid excessive hydration, which will clump the seeds and gum up the system. Whenever possible the product should be blended in as a dry powder. SAP powder products are readily available in a particle size of less than 200 microns, but finer milling can be conducted if necessary. Temperature control is important to preserve seed viability and will suffice to assure polymer stability. If it is possible to delay introduction of a sticker, such as polyvinyl alcohol, it should be considered as a final component to provide a protective covering of the finished seed. Any consideration that will delay in-field hydration will promote success for the finished, treated seed. Our team of technical experts is available to assist in determining proper formulation and process development.



Generalized Manufacturing Flow Chart



Variables for development of a SAP seed treatment:

- SAP particle size
- Seed surface chemistry compatibility with SAP
- Additional flow, production, and application chemistries
- SAP attributes: absorption, retention, absorb release cycles, etc.
- Seed capability to accept 1-2% SAP load
- Product registration
- Dust mitigation/elimination in production
- Hygroscopic concerns
- Packaging and long-term storage consideration
- Seed treatment timing as related to sales & use proximity
- Production efficiencies and overall economics