SEED COATINGS WITH MOWICOLL® SC

ARA - Product Management & Marketing, CAS

Summary

- Seed Coating Technology
- Coatings Process
- Application Methodology
- Main Advantages
- Polymers: Mowicoll® SC – Use and features

Seed Coating Technology

- Seed coating technology is at the top of the seed industry due to concerns regarding job safety and environmental protection as well as precision sowing as this process improves seed plantability.
- Seed coating is the use of pre-crop applications and processes to provide protection and improve the establishment of healthy crops. It is a process designed to create a nutritious environment in the immediate vicinity of the germinating seed.
- This process consists in the deposition of a thin and uniform layer of a liquid polymer (adhesive) on the surface of the seed.
- In general, the coating represents one-third coverage and the seed two-thirds.
- This process should allow easy degradation of the pellet and be biodegradable in nature.
- Coating cannot alter the inherent genetic characteristics of the seed such as yielding capacity.
- This technology is highly efficient in protecting seeds against diseases and insects because it allows to combine nutrients, micro elements, fungicides and insecticides, modifying the gas permeability and moisture of the seeds.

Coating Process

PELLETIZING

- Use of inert materials to improve plantability
- Transforms bare seeds into uniform, round or oval pellets, increasing the size.
- The layer that covers the seed does not prevent the passage of oxygen thus maintaining the germinative power.

INCRUSTATION

- Apply a minimum amount of material to fill irregular shapes and surfaces of the seed
- Facilitates planting and handling in mechanized sowing equipment
- Promotes pest attack protection before germination

FILM COATING

- Application of a thin water permeable polymer based coating onto the seed and its used for various purposes:

1- Apply active ingredients

2- Reduce dust emission during treating, bagging and sowing,

3- Generate flow in sowing

4- Identify seeds by colors

Application Methodology

- Coating is considered the simplest, safest and most effective way to treat any seed with virtually any seed treatment.
- The seeds are mixed with an **aqueous adhesive** so that each seed is covered.
- The adhesives should be water soluble and **organic polymers** , natural starches, sugars, gum arabic, both dispersed in water to produce a sprayable liquid are generally used.
- The polymers act as an extra layer, forming a "**encapsulation**" of the seed.
- The coating solids are then added.
- As polymers are slightly more viscous materials than most chemicals used as defensive agents in seed treatment; therefore its use requires the use of seed treatment machines (rotary coater) able to apply the product with uniformity and exactness in the dosage.

Seeds → **Adhesive** → **Binders***

*Binders : Additives, pigments and polymers

Seed coatings advantages

- Improves planting conditions, especially under adverse conditions
- Excellent coverage and adhesion of the active ingredients in the seed
- Reduces the leaching of treatment products in the field

- Reduction in dust exposure
- Uniformizes the shape of the seeds
- It allows the adhesion of products necessary to the germination as the absorption of water and gases

- Helps protect seeds stored under high humidity conditions
- Improves and protects seed from mechanical damage in handling
- It improves the appearance of the seed, with attractive colors that can identify high quality seeds, the producer or the treatment applied.

POLYMERS : Mowicoll® SC

Provide high quality and high performance seed technology solutions that result in the growth of a successful crop.

Mowicoll®
SC 450

Aqueous dispersion based on modified vinyl acetate

Specification	Unit	Value
Solids content	%	53,5 – 56,5
Viscosity Brookfield RVT	mPa.s	1.200 – 3.800
pH		4,0 – 5,0

Use and Features

- Process of incrustation and pelletizing of forage seeds
- Binder function and excellent compatibility with other components of the composition: inoculant, fillers and pigments
- Product formulated with preservatives compatible with the microorganisms that are usually used.
- High adhesion to seed surface
- Compatible with *Rhizobia* bacteria

Mowicoll®
SC 451

Aqueous dispersion based on modified vinyl acetate

Specification	Unit	Value
Solids content	%	53,5 – 56,5
Viscosity Brookfield RVT	mPa.s	7.000 – 9.000
pH		4,0 – 5,0

Use and Features

- Process of incrustation and pelletizing of seeds for pasture
- The high viscosity of the product favors dilution in water for formulation adjustments
- It has good water solubility and excellent vapor permeability
- High adhesion to seed surface
- Binder function and excellent compatibility with other components of the composition
- Compatible with *Rhizobia* bacteria

Mowicoll®
SC 416

Aqueous dispersion based on vinyl acetate and derivatives of versatic acid

Previous denomination : Mowilith® LDM 2116

Specification	Unit	Value
Solids content	%	49,0 – 50,0
Viscosity Brookfield RVT	mPa.s	3.000 – 4.000
pH		4,0 – 5,0

Use and Features

- Process of seed coatings of large crop (corn, soybeans and vegetables)
- Excellent dust control and improved drying efficiency
- It presents suitable dissolution of the dry film when in contact with water
- Binder function and excellent compatibility with other components of the composition: inoculant, fillers and pigments.

Mowicoll®

SC 800

Aqueous nanodispersion based on acrylic esters and derivatives of versatic acid

Specification	Unit	Value
Solids content	%	30 - 35
Viscosity Brookfield RVT	mPa.s	Max 100
pH		6,0 – 7,0

Use and Features

- Process of seed coatings of large crop
- Due to its low particle size, it shows high adhesion to the seeds surface
- Excellent dust control efficiency
- Optimum compatibility with pigments and active ingredients
- It presents suitable dissolution of the dry film when in contact with water

www.archroma.com

info@archroma.com

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