AQUAHOLDER

TESTING REPORT

"Successful one-step application process on the FDM Rotary Dryer Coater"

Prepared in collaboration between Seed Processing Holland (FDM) and Pewas (Aquaholder)

SEED PROCESSING HOLLAND
Powered by Fowler Westrup

PEWAS

Description of the activity:

Pewas has introduced Aquaholder Biosafe, a superabsorbent polymer suspension specifically engineered for hydrostimulation in seed treatment. This product is applied on seeds as soil conditioner to improve moisture retention, which is particularly advantageous in regions experiencing irregular rainfall.

At Seed Processing Holland (SPH), Pewas has found a trusted and innovative testing partner. SPH is a globally recognized leader in seed technology solutions, serving the vegetable, field crop, and other seed market segments.

Pewas specifically selected SPH for their **advanced one-step coating and drying process**, setting them apart from traditional two-step methods (coating – drying separately – coating again). This streamlined approach enhances process efficiency while maintaining the highest standards of quality.

Testing was conducted using Seed Processing Holland's FDM Rotary Dryer Coater across a range of crop types, including oilseed rape (OSR), sunflower, and maize.

Two distinct formulations of the Aquaholder suspension were utilized: one for maize seeds and another for OSR and sunflower seeds, resulting in three unique formulations tailored to the specific needs of each crop.

Main features:

- Two PEWAS formulations applied through a unique one-step coating process
- Certified biodegradable products
- Safe, alcohol-free formulations ensuring a secure process
- Secure application for operators

The testing took place over two days, December 4th and 5th, 2024, at Seed Processing Holland Headquarters. A total of 34 batches were coated with Aquaholder:

OSR:	12 batches were coated, with 4 of them using a one-step coating
Sunflower:	9 batches, with 7 of them using a one-step coating
Maize:	13 batches, with 2 of them using a one-step coating

On the first day, "pre-treated" seeds underwent coating with the Aquaholder Biosafe suspension to assess conditions for achieving completely dry seeds (overcoat), thereby preventing moisture-induced sticking. The following day involved a **one-step coating** procedure where seeds were treated with a liquid product that acts as a carrier for protective agents, followed by the application of Aquaholder Biosafe.

Key findings

The testing yielded positive results, with the quality of coatings during overcoat testing matching standards achieved at Pewas. **The one-step coating technique proved** effective across all crops, leading to high-quality coatings. Notably, the superabsorbent polymer in Aquaholder remained inactive during the coating process. Its presence was confirmed through FSC measurements conducted at Pewas laboratories. Microscopic analyses revealed distinct characteristics in seed coating quality for each crop.

- **Dry Seeds**
  - Seeds coated with Aquaholder and finishing powder on the FDM Rotary Dryer Coater were found completely dry after testing, with specific conditions established for each type of test (overcoat or one-step) and crop. No hydrogel creation was observed during coating process.
- **Coating Quality Evaluation**
  - Seeds coated with Aquaholder and finishing powder on the FDM Rotary Dryer Coater fulfil requests on coating quality standards, resulting in uniform distribution of Aquaholder layer and effective moisture retention.

Conclusion

The successful integration of Aquaholder into existing seed treatment processes underline its potential for widespread use in agricultural practices aimed at enhancing seed germination and improving crop yields under variable environmental conditions. Further evaluations, including external tests for germination rates and dust-off, are recommended

Aquaholder testing conducted by the Pewas team at Seed Processing Holland was highly successful, providing significant insights into its future applications.

More information:

In Enkhuizen/Bratislava on March 6, 2025

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