CASE STUDY:

Product Flowability Testing

Date: *April 2021*

PAMI's Capabilities:

PAMI supports agricultural product developers with:

- *Year-round testing in flexible facilities.*
- *Access to air seeder test equipment, material handling equipment and certified instrumentation.*
- *Proven test set-ups and analysis methodologies.*
- *Third-party testing.*
- *Convenient locations at our facilities at Portage La Prairie, Manitoba, and Humboldt, Saskatchewan.*

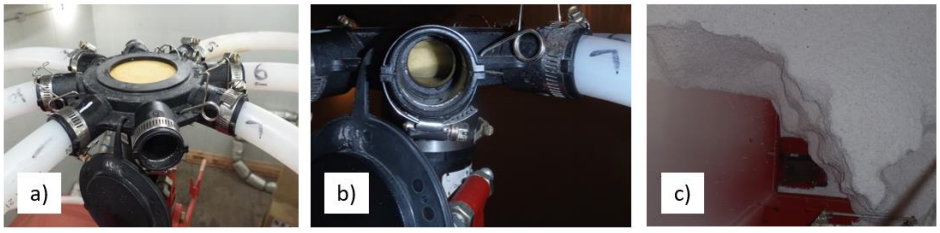
Client's Challenge:

Identify potential risks at varying environmental conditions associated with

- applying granular fertilizer using an air seeder, and
- storing granular fertilizer in bins.

Project Scope:

- Conducted tests in PAMI's Crop Processing Development Centre (CPDC) and environmental chamber, using representative air seeder test equipment.
- Conducted tests at ambient conditions (19°C, 13% RH) as well as elevated humidity ranges (44% and 70% RH).
- Preconditioned fertilizer product to 0°C.
- Monitored product outlet flow for plugging.
- Inspected for residue build-up/wear (a, b, and c); measured and recorded.
- Conducted a sieve analysis on the inlet and outlet material samples to quantify the level of fertilizer breakdown experienced (ANSI/ASAE S319.4).
- Generated a PAMI technical report outlining the project methodology, results and recommendations.



Value Created:

- **Product Understanding:** Increased confidence of fertilizer product handling performance under average seeding conditions.
- **Risk Management:** Enhanced understanding of fertilizer product, thereby reducing risks associated with new product introduction to market.
- **Documentation:** Technical report summarizing the test methodologies and results.
- **Confidentiality:** PAMI maintains strict confidentiality of products and test results.
- **Quality:** PAMI operates under an ISO 9001 quality system and maintains complete test and certification records.

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