








Science For A Better Life

The ‘Zero’ Dust Project at Bayer CropScience – An Overview

Deutsche Phytomedizinische Gesellschaft e.V.
@ Bayer CropScience
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Bayer CropScience




Overarching goal ‘Zero’ Dust:
*Keep the seed treatment where it belongs
- on the seed, in the field*

‘Zero’ in this context does not denote a “scientific 0.000...” for dust.
It refers to all measures which can help to reduce dust emergence and emission.
Targets for mitigation levels depend on various factors such as crops, markets,
treatment & sowing machinery types.

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Dust Need for Integrated Solution



Products	Crops
Film-coatings	Sowing machinery types
Formulation compositions and type	Treatment machinery types
Sources of dust (organic, abrasion, quality of seed)	Exposure type (honeybee/human, being/non-target organisms...)
Treated seed logistics – transportation, handling, storage	Regulatory/legal requirements, mandatory precautionary measures
General market situation	Customer acceptance factors (agricultural, financial, technological)

One-size-fits-all solution is not possible

Need for integrated solution based on a “toolkit”

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Dust

Quantitative and Qualitative Aspects

- Total mass of dust – evident first target
- Fraction of active ingredient in dust
- Particle size distribution of dust
- Agricultural conditions
sown & neighboring crop
field size & edge effects
weather

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Solutions & Improvements

Formulations & Film-coatings

Use of suitable and efficient de-dusters (polymers, surfactants, oils & their combinations) for formulations and film-coatings.
registration for formulation needed → long term ; short term for film-coatings

Use of Peridiam® film coatings, available for most crops.
short term, usage decided by breeders and treatment companies

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Solutions & Improvements

Drying & Increased Coating Rate

Additional drying and increased coating rate during treatment.
short to mid term, usage decided by breeders and treatment companies

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Solutions & Improvements

New technology: End-point Determination

Developed algorithms for acoustic and power measurements to predict the optimal end-point of the seed treatment process

- too short & too long treatment can lead to higher dust levels

40s drying (optimum)
Low Dust SG = 98%

50s drying
+30% Dust SG = 92%

60s drying
+50% Dust SG = 88%

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Solutions & Improvements

In-field Solutions

Deflector

-90% dust

AirWasher

-97% dust

SweepAir

-99% dust

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Overview

Solution "Toolkit"

Formulations with in-built de-dusters

Further improved film-coatings

Formulation properties

Increased coating rate & drying

Sequential application

Certified seed treatment plants

SweepAir

AirWasher

Deflectors

Planter lubricant - Bayer Fluency Agent

Seed bag tags and other stewardship activities

Dust limits / standards

... and many more

Several solutions available or in work

Often need for collaboration to implement solutions

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Mission: 'Zero' Dust¹

A journey to keep seed treatment where it belongs – on the seed, in the field

Click on the image above to open the [Zero Dust Newsletter](#) PDF



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Thank you!

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