



incotec

the seed enhancement company

Part of Croda International Plc



Quality Seeds for Improving Crop Yield

1st BANGLADESH SEED CONGRESS

**DATE: TUESDAY 11 -13 FEB 2023
DHAKA, BANGLADESH**

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President – APSA , Singapore - Thailand



Content



Organization Introduction



Seed Quality Understanding



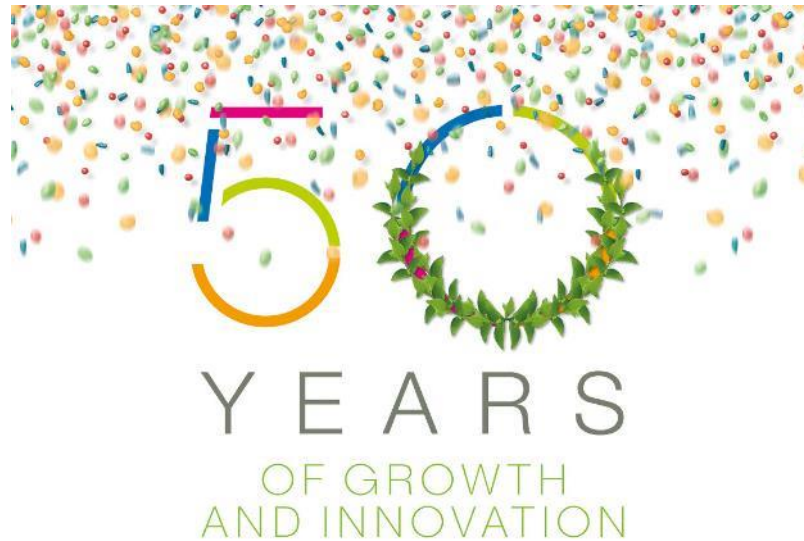
Seed Quality Vs Crop Yield



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1968 – 2023
Incotec 55 year



IT ALL STARTED
BACK IN 1968 WHEN
A DUTCH PHARMACIST
SUCCEEDED IN COATING
ONE LETTUCE SEED



THE WORLD OWES YOU ONE, DAVID!



Incotec in short

Incotec is *the* seed enhancement company, **independently** providing solutions through **innovative** technologies and services, focusing on **customer** needs. Our purpose: contributing to feeding the world.



Incotec's Global Presence



Why Seed Quality for Crop Yield ?

- **2012 over 7,000,000,000 people to feed**
- **2050 over 9,000,000,000 people to feed**

Consequence of this:

in the coming 27 years the same volume of food needs to be produced as in the last 100 years, with less availability of land, PPP, fertilizers, water

To achieve this:

new technologies/sustainable innovations needed to derive best of the best genetics with BEST SEED QUALITY

30/01/2023



“Agriculture feeds the nation, and seed feeds agriculture”

Seed is the first determinant of future plant development.

**Seed is the master key to success in YIELD
with the food Production**



Trends - Global Seed Market

- Highest Seed Quality Standards (above then Indo-Bangla Std.)
- Assured Claim to meet growers' expectations
- Highly mechanized , Automized and Controlled farming
- Need 'More from Less'
- Environment Friendly–Green Technology preferable
- More usable plants and more growth vitality
- Unique Genetics

Highly Mechanized , Automized & Controlled condition Farming



SEED QUALITY UNDERSTANDING



30/01/2023

SEED

- THE basic input in Agriculture
- Seed Quality ensures harvest and yields

- *Genetics*
- *Purity*
- *Physiology*
- *Environmental conditions*
- *Biotic stress (diseases pests etc)*



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SEED QUALITY

Control	Control – Assurance – Management
Assure	Assure Vs Insure Vs Ensure
Seed	Seed Quality Enhancement Technologies



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Assure Vs Insure Vs Ensure

Assurance - ?

Feeling of confidence and Certainty

Promise of Certainty

Insurance - ?

If something goes wrong we are there

To assure against unpleasant situation

Ensure ? Synonyms of Assurance almost



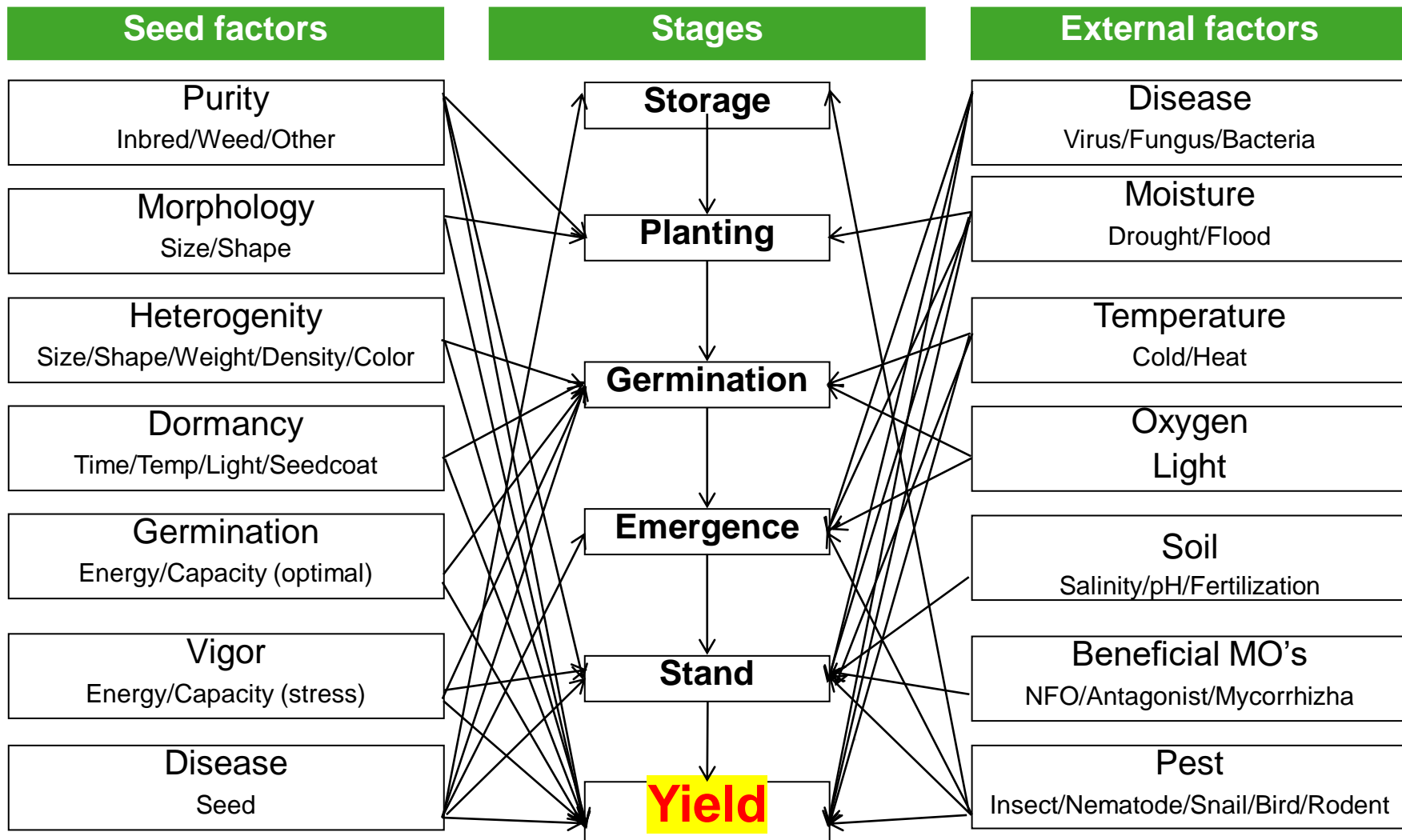
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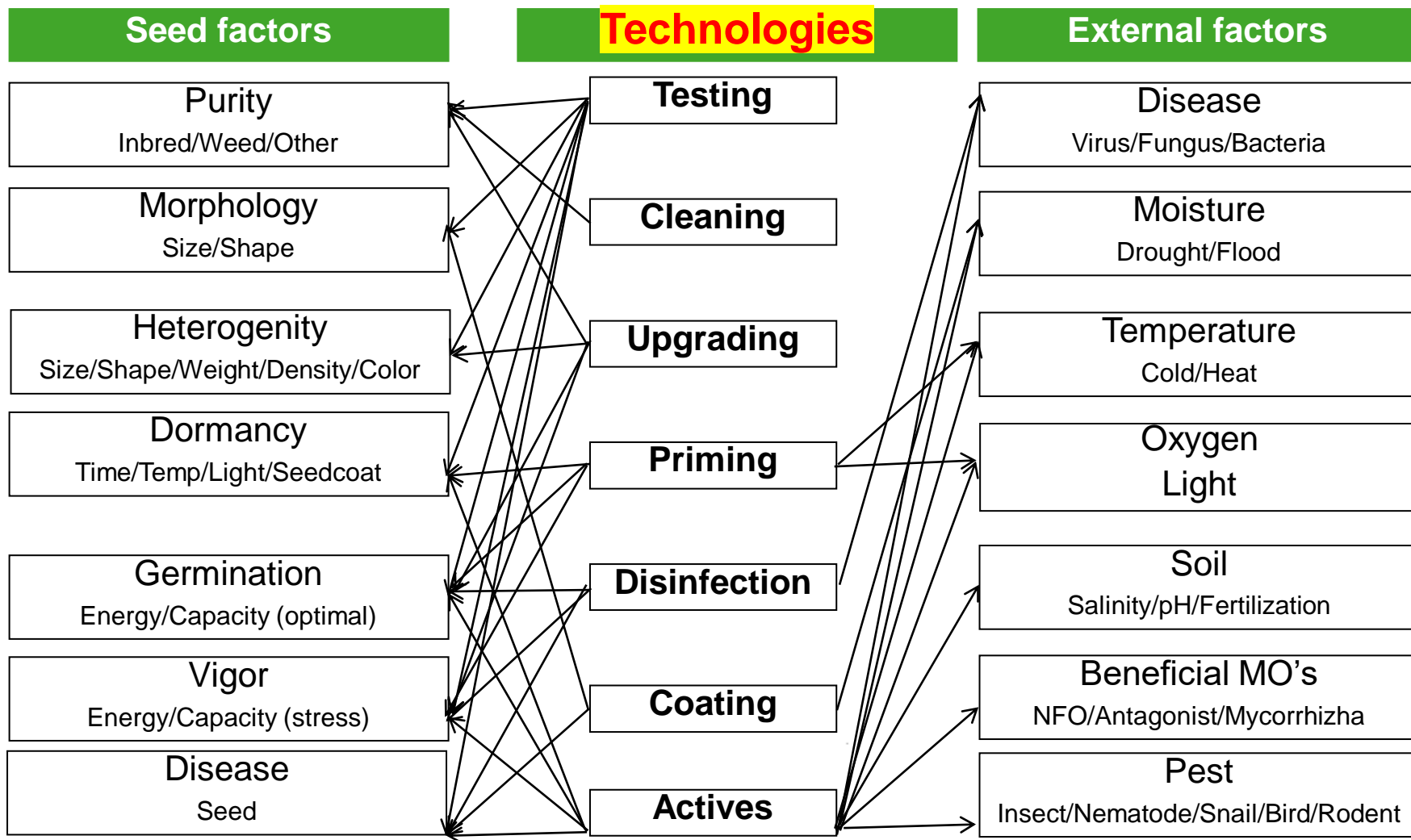


How to Assure Basic Seed Quality ?

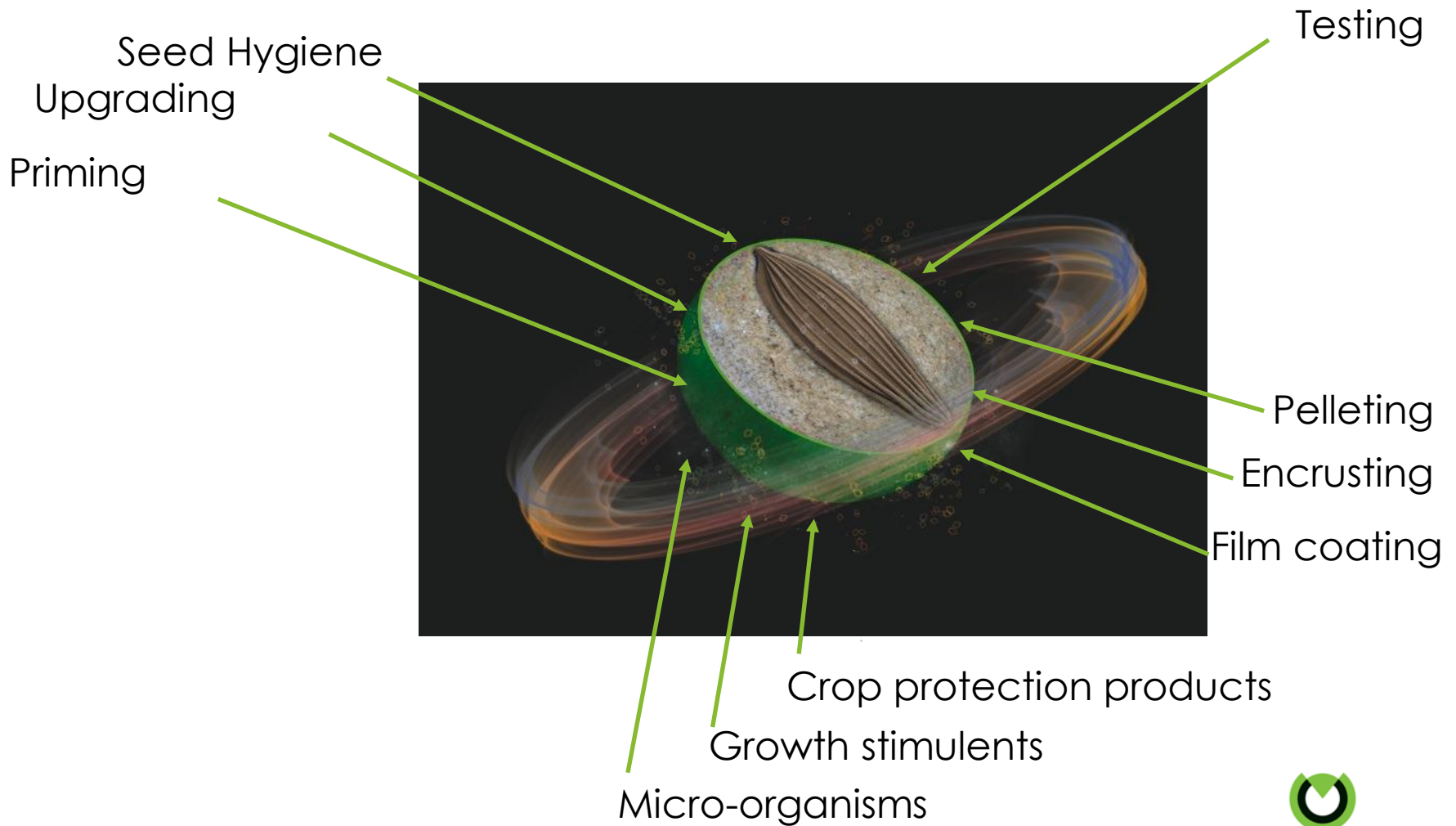
Mainly on raw seed before enhancement.....

- Genetic Purity – hybrid , Inbred , Off types
- Physical Purity – Size, Shape, Color, Texture etc
- Health Test – Pathogen free
- Germination Test
- Usable Plant Test in Soil
- Germination Energy (GE)





Seed Quality Enhancement – Visual Dimensions



How to Assure Enhance Seed Quality ?



Film coating

- Application of a very thin layer of polymer, possibly mixed with an active or additive, with virtually no change in size or weight
- Objectives:
 - Improved application of treatment chemicals, addition of nutrients or strengtheners, inclusion of colorants

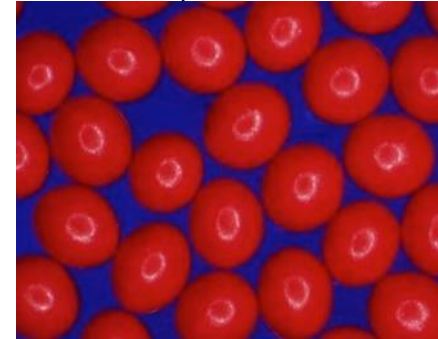


Encrusting and Pelleting

- Adapting the shape of seeds by putting a layer of coating material on it. More uniform shape and size of the seeds
- Objectives
 - Higher planting efficiency by allowing use of mechanical and pneumatic sowing machines
 - No doubles or empty cells
 - Higher productivity and easier to plant



Lettuce
pellet



Encrusted
onion

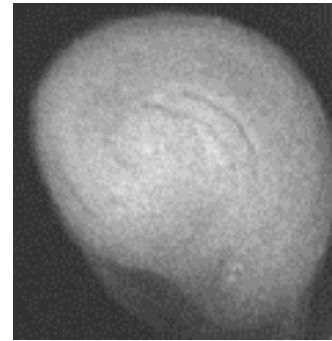


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Priming

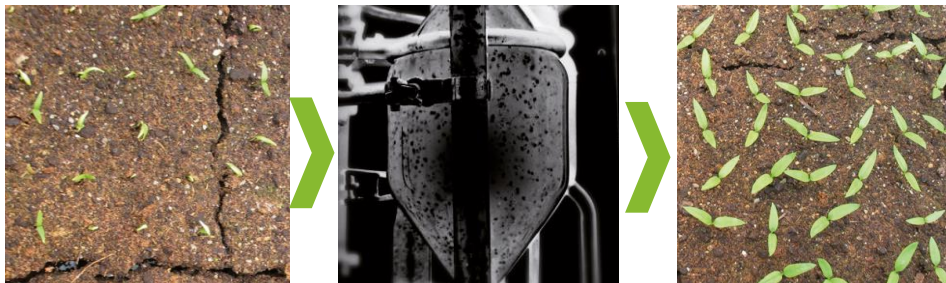
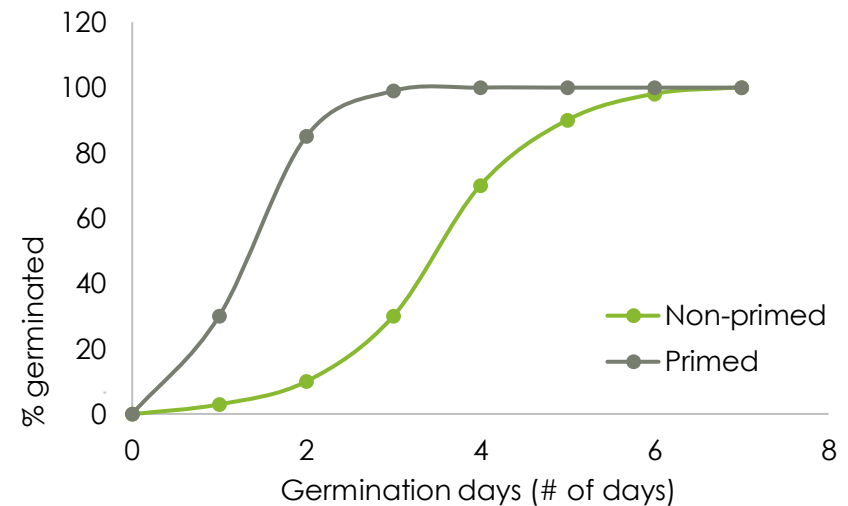
- Under controlled conditions germination is triggered and then brought to a standstill at just the right stage
- Objectives:
 - Improve uniformity of germination at a range of temperatures
 - Increase speed of emergence
 - Overcome types of dormancies
- Result: higher number of good plants



Unprimed

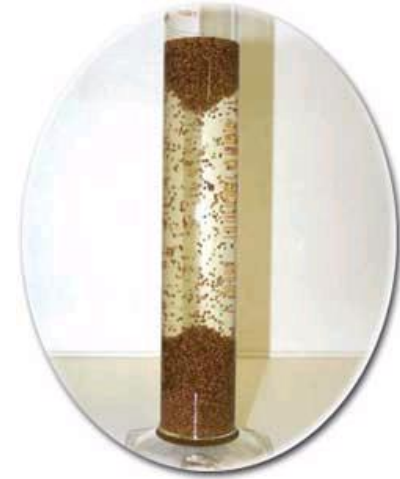


Primed



Upgrading

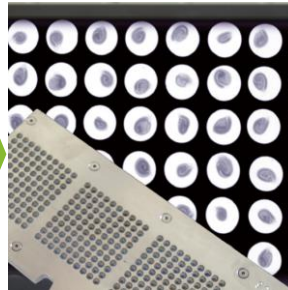
- Upgrading:
 - Removing seeds of lower quality raises the overall quality of the seed lot
- Examples of upgrading:
 - Chlorophyll Fluorescence sorter
 - Liquid density separation
 - X-ray image sorter



seed

selected seed

rejected seed



Seed hygiene

- Treatments that reduce or eliminate micro-organisms (e.g. fungi, bacteria) in/on the seed
- Examples
 - Chemical treatment
 - Radiation treatment
 - Hot water treatment
 - Dry air treatment
 - Hot humid air treatment (ThermoSeed)



Treated



Not treated



Actives, Additives and biologicals

- Actives, additives and biologicals
 - Application of actives, additives and biologicals integrated in the seed coating
- Major groups of actives
 - Plant protection products
 - Growth promoting agents
 - Plant strengtheners



CONTRIBUTING TO FEEDING
THE WORLD, BY GETTING
THE UTMOST OUT OF SEED



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Thank you for
your attention!

Any
Questions?



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