



DOBMAC AGRICULTURAL MACHINERY

AUSTRALIA AND NEW ZEALAND



WELCOME TO DOBMAC

Dobmac Agricultural Machinery is an innovative, **market leader with a focus on total solutions** in design, manufacture, supply & maintenance of specialized agricultural machinery **in a changing global market.**



DOBMAC AGRICULTURAL MACHINERY AUSTRALIA AND NEW ZEALAND



Companies represented at the 2018 Hort connections
event, Booths 025-028

AgroVent[®]
Storage Systems



Eqraft
EMBRACING THE FUTURE

MODESTA
EMPOWERING CLEAN AIR

TONG

Verbruggen
Palletizing Solutions



Eqrader & Total solutions

Proud Member of
**Onion Tech
Alliance**



Eqrraft

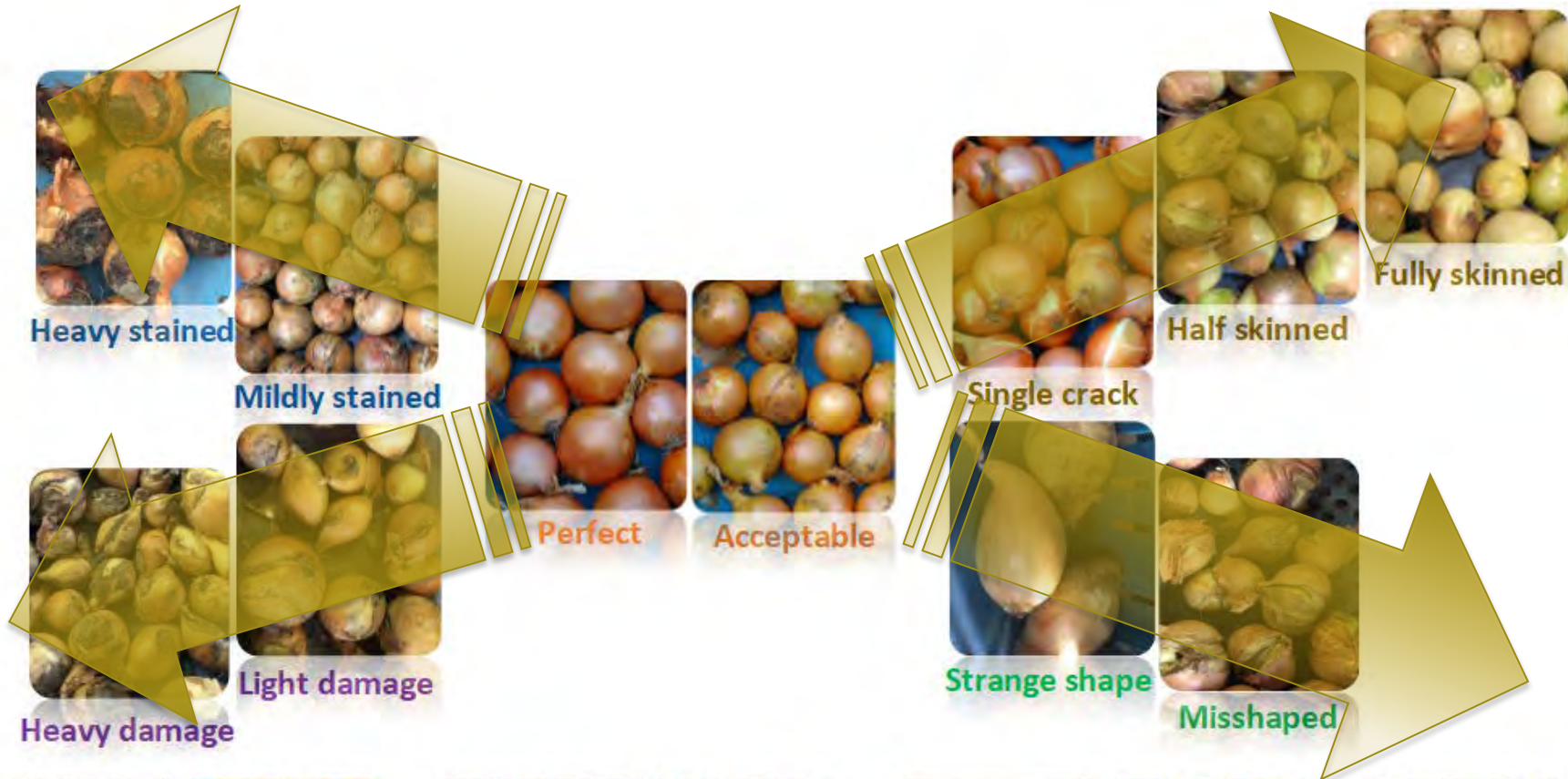
EMBRACING THE FUTURE



Eqrader capabilities and features

- NIR Spectroscopy
- User can calibrate the system, detection of:
 - Internal rot
 - Translucent skin
- External visual defects
 - 18 categories separation in quality
- Size grading mm accurate
- Weight grading +/- 2 gram (per bulb)

- Robust solid design of frame and parts, suitable for dusty environment with a focus on low and easy maintenance
- Blower beam dust and shale extraction special design
- Positive ventilation (pressurized) camera boxes to keep lenses clean
- Integrated washing system



Clod / Stones



Sprouts



Dead



Skin disease



Rotten



Seeder



Root disease



Eqraft

EMBRACING THE FUTURE

Onion Drying



Huub Kasius

CEO Agrovent BV



**Based in Emmeloord, The
Netherlands**

**Building drying facilities and storages for
onions and potatoes since 1992**

www.agrovent.nl

We're sorry.....A storage is NOT a hospital

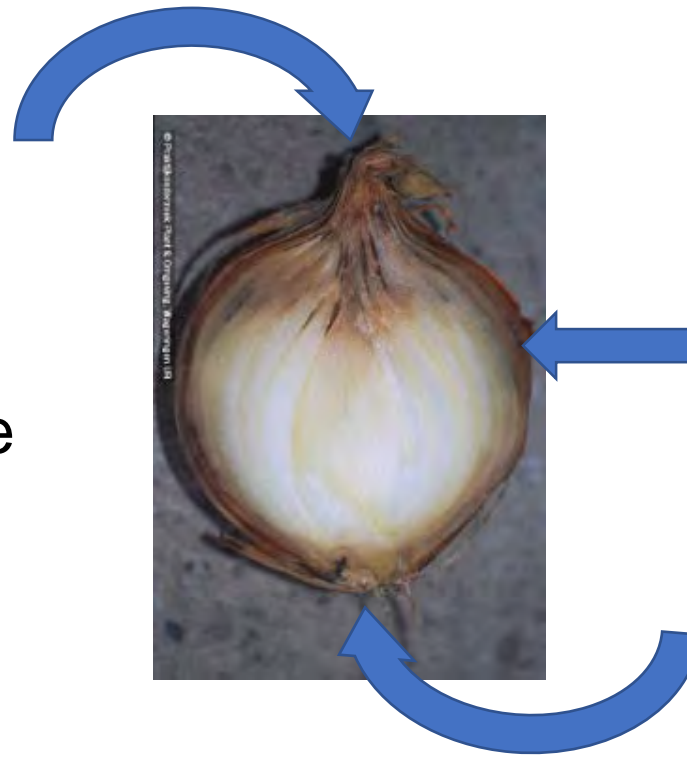
At best it is a good hotel.....

**What has already infected the onion, cannot be taken
out again**

We can only prevent it from spreading any further

Where do mould and bacterial rot come into the picture?

Moulds
enter
through the
neck



Bacteria
and fungi
enter the
skin when
damp

Bacteria
enter
through the
root
channels

Onions drying and storage is a process!

1st : extensive drying to close the neck

2nd : remove excess water from under the skin

3rd : cool to storage temperature

4th : prepare for processing

**1st : extensive drying to close the neck
AND to keep outside dry**

**Should be done as quickly as possible,
preferably within 3-6 days!**

- **Removes 4-7% of the weight in water
Can be done on the field or in a
storage**
- **Prevents diseases entering the onion
through the neck, which is a wound..**
- **Dries the external skin and roots and dries
away bacterial liquids**

2nd : remove excess water close under the skin

- **Is a slow process of gentle drying...**
- **Can take up to two weeks depending on variety**
- **Removes another 2-4% of the weight**

3rd : cool to storage temperature

- Prevents sprouting
- Freezes bacterial growth !

4th : prepare for processing

- Warm up above dewpoint
- Keep skin dry to prevent new infections

This will start dormant bacteria inside the onion to grow again!

Onions cooled down too quickly after drying will show this hidden defect when out of storage.....

Conclusion:

**the drying process is critical for your
storage result !**

Let's focus on the first stage of drying..

Some facts to start with:

Spores of moulds do not germinate in a relative humidity lower than 65%

Neck rot will accelerate at temperatures between 22-26 degrees C

Bacteria will grow exponentially with any increase in temperature and has no practical upper limit

So what do we need to do?

Apply as much dry air with the lowest possible humidity, at the highest possible temperature

Recommendation: air of 34 degrees and RH < 65%

This will:

Close the neck faster

Prevent moulding to spread

Dry-off any exterior liquid

Induce accelerated rot of bad onions

Induce accelerated rot????



So...yes. !

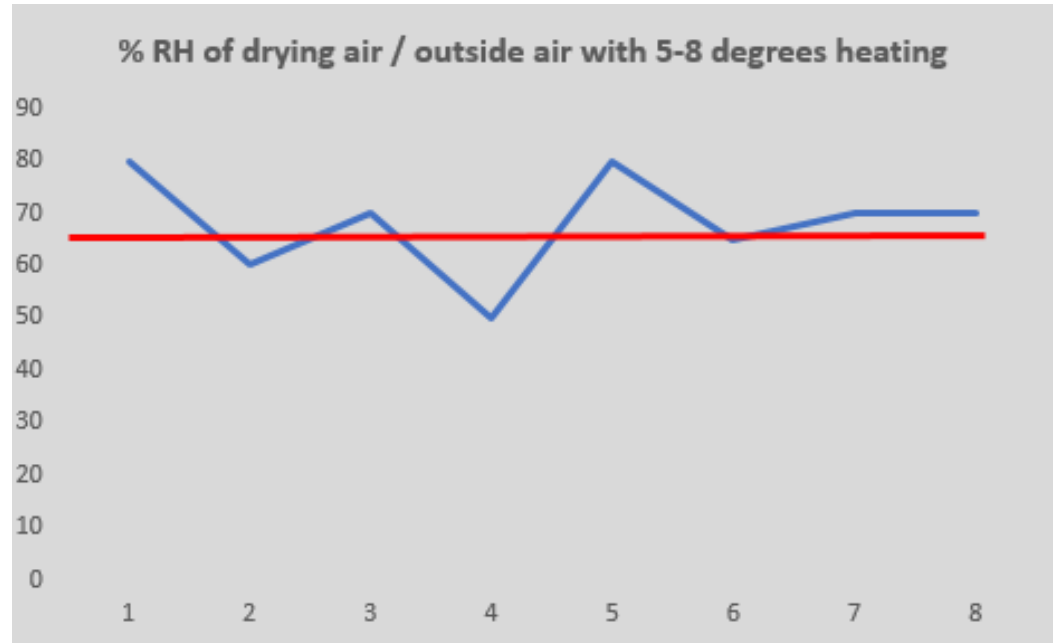
**As long as we
prevent leaking
onions infecting
its neighbours**

Drying methods:

Classical, with outside air



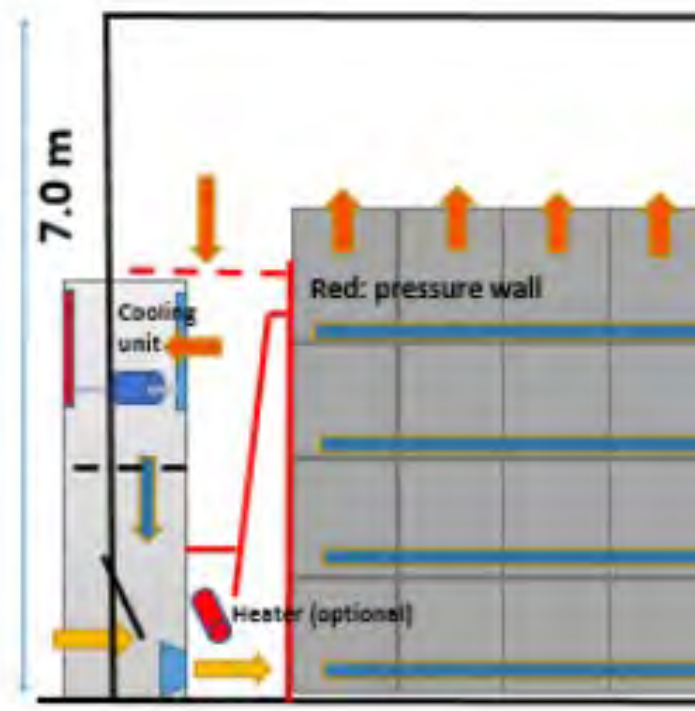
Classical, with heated outside air



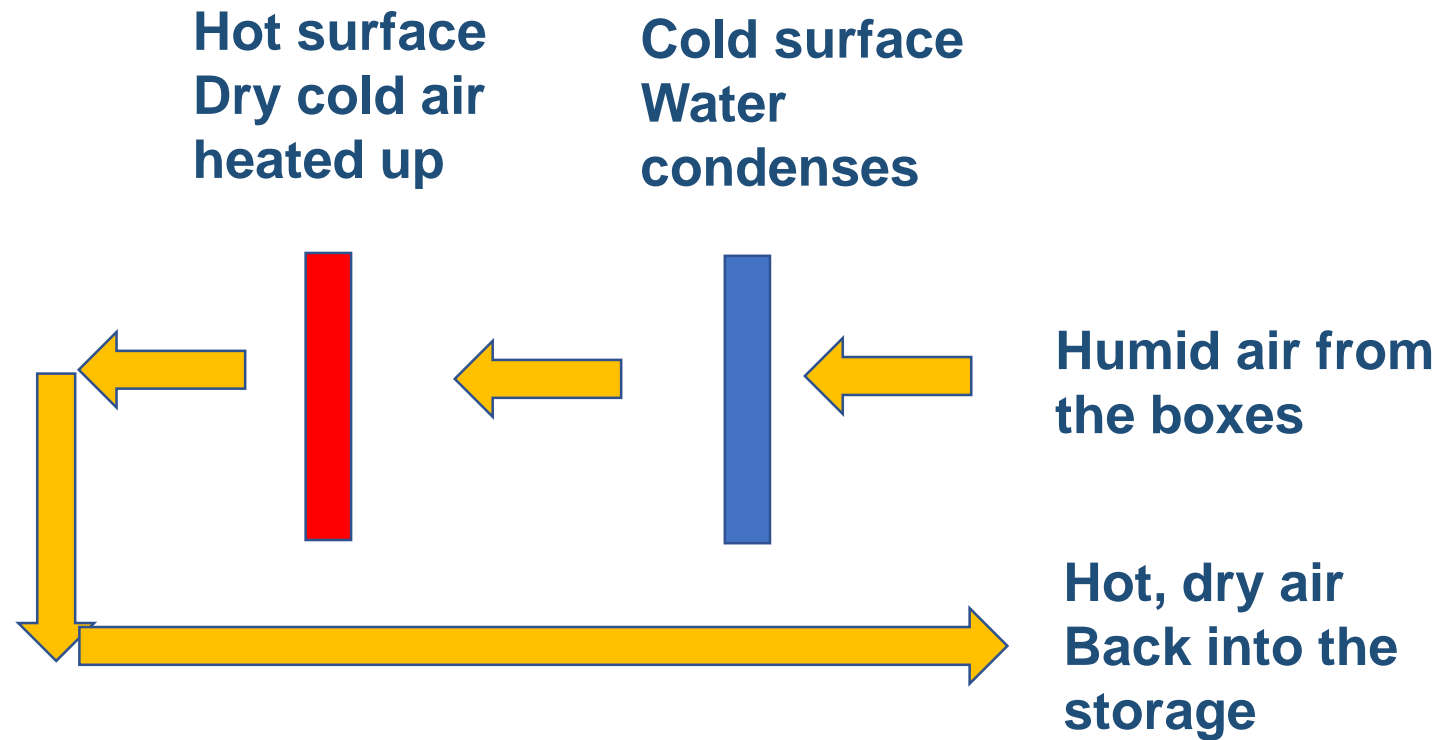
Drying power is unpredictable, depending on the weather! No guarantee we meet the desired drying conditions

New:

Agrovent VaccTek condenser drying, without outside air



Instead of heating up outside air, we extract humidity from the internal, circulating storage air flow



**VaccTek Technology =
Using advanced cooling technology with heat-
recovery to dry and heat up circulating air**



The result:
Always dry air, from hour one



The result:

- **On average 50-100% more drying power**
- **50-70% less energy consumption**
- **Shorter drying times**
- **No more 'hidden' infections, easier sorting**
- **Less waste**
- **Better colour of the onions**
- **Fully electrical, no gas required**

Thank you!

www.agrovent.nl
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THANK YOU AND WELCOME TO DOBMAC!
Please come and see us at our booths no. 025 - 028