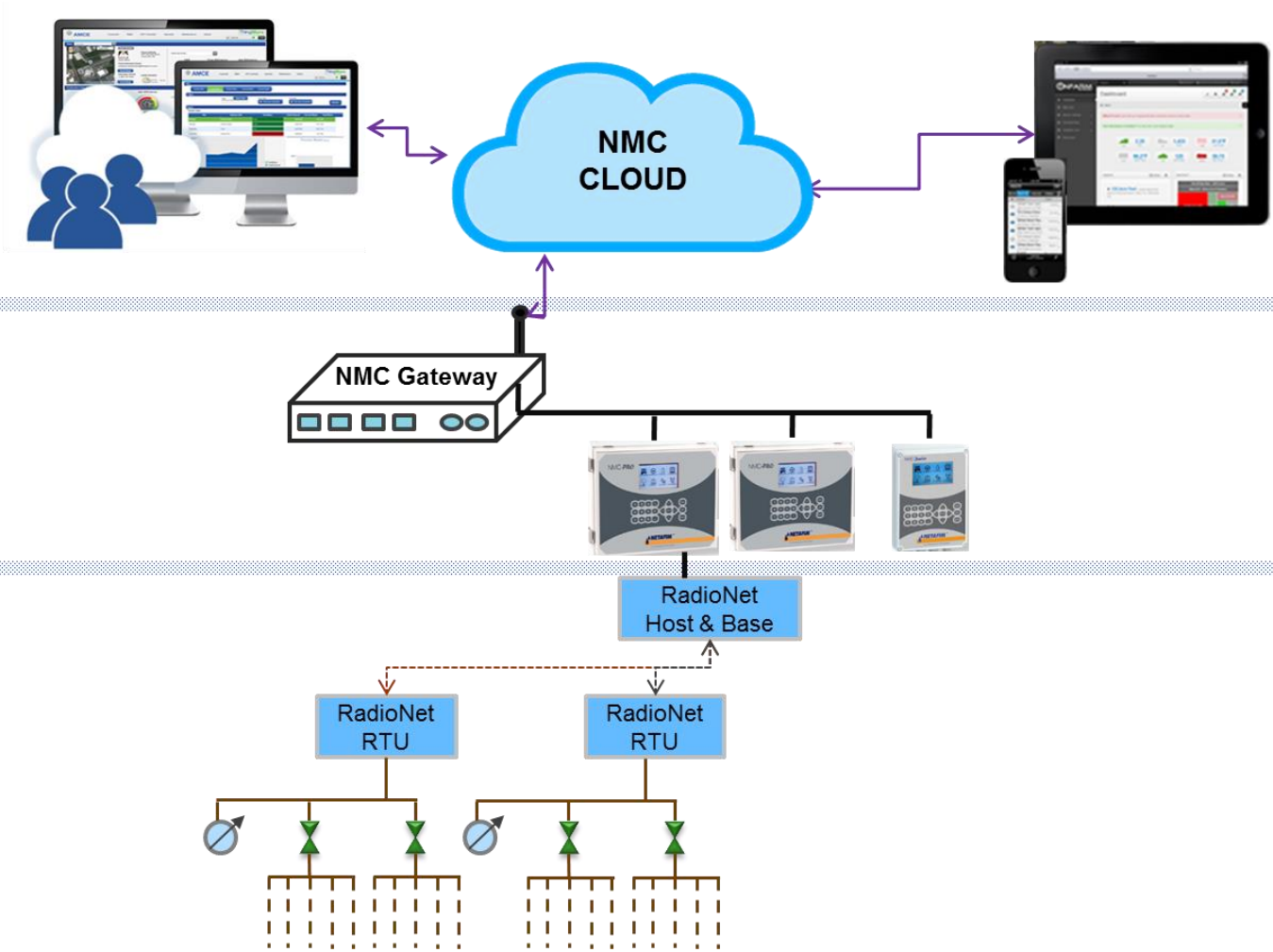


# NEW IRRIGATION TECHNOLOGIES AND TECHNIQUES FOR THE SOFT FRUIT SECTOR

Julian Gruzelier



# CONTROL VIA THE CLOUD



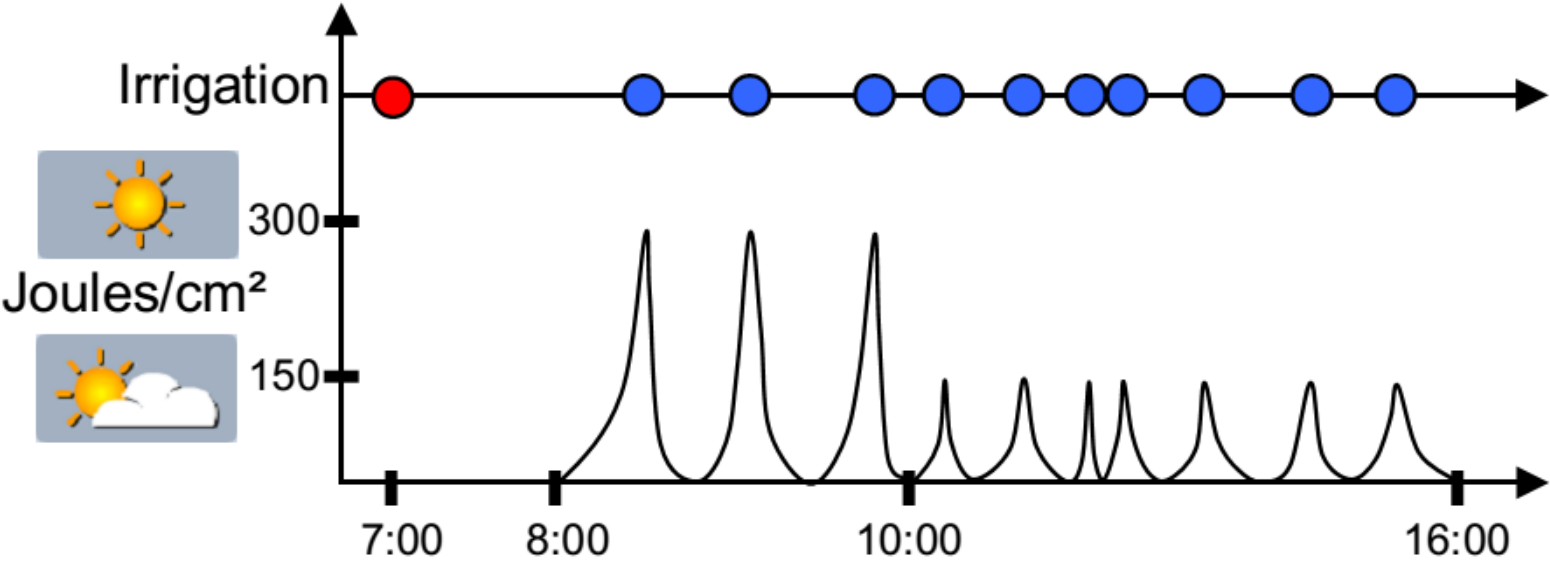
# RAD SUM



**Rad. Sum  
limit 300**

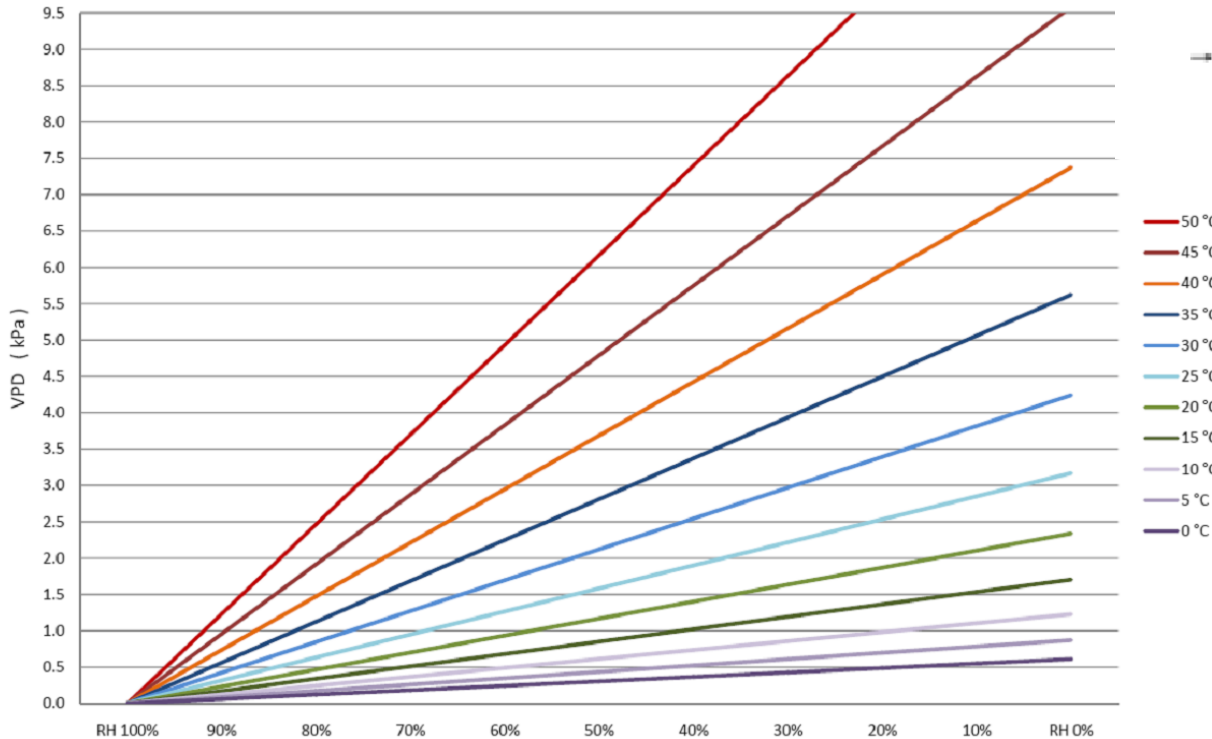


**Rad. Sum  
limit 150**



# VPD

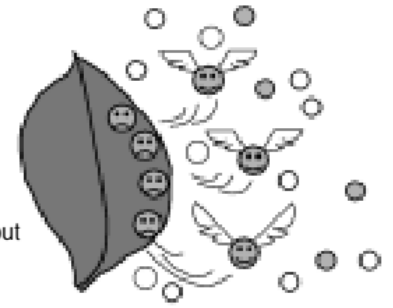
## Graph 1: VPD (kPa) : Temp (°C) : RH (%)



- Dry air
- Water vapor

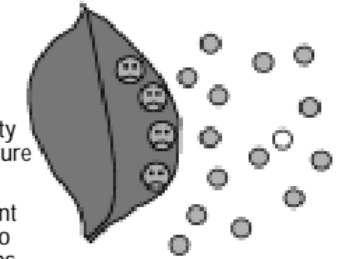
### Higher VPD

- Transpiration is unhindered
- Plants can dry out

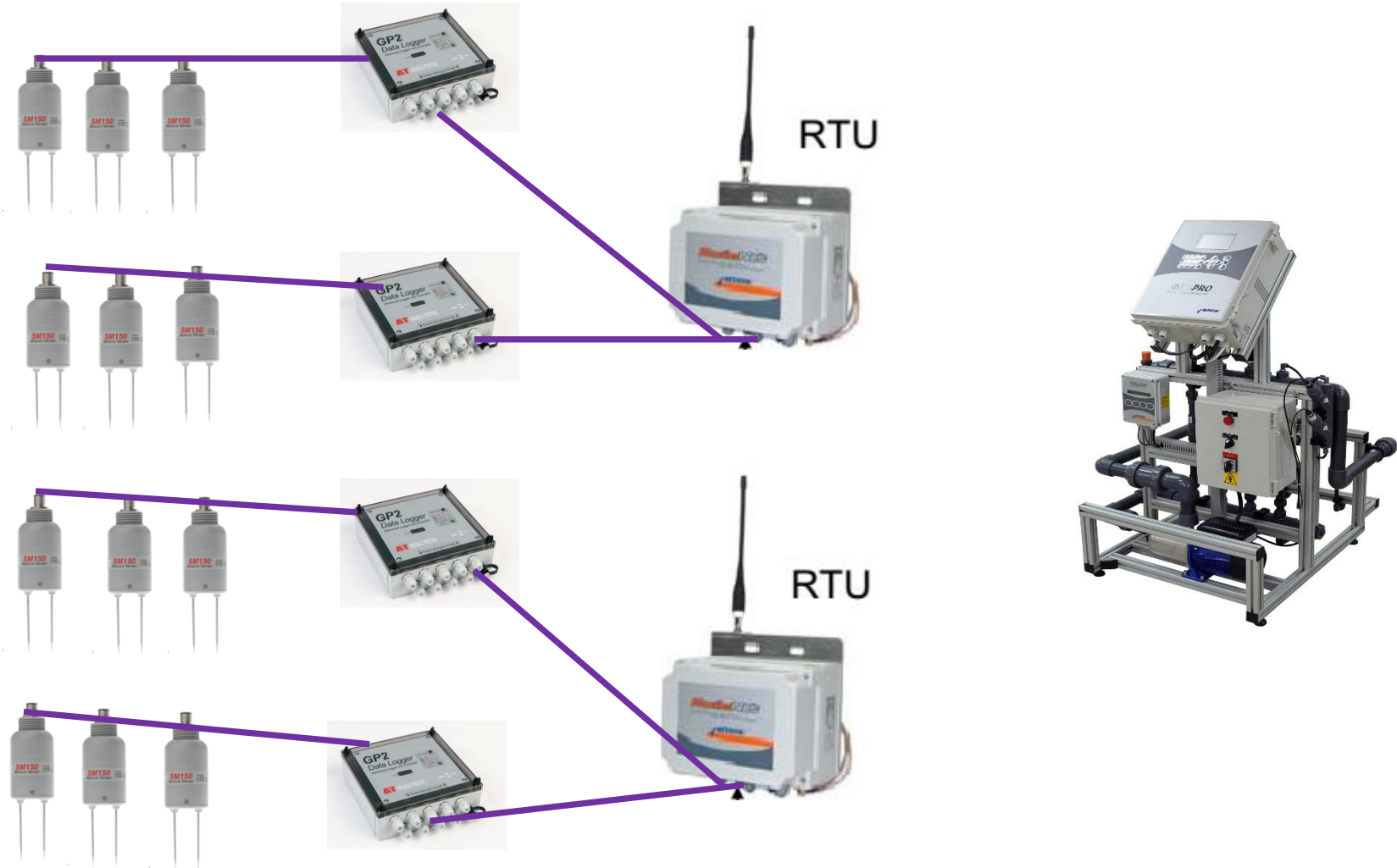


### Lower VPD

- Transpiration is stifled by inability to release moisture to the air
- Moisture on plant surfaces leads to disease problems



# SYSTEM ARCHITECTURE



# SITE LAYOUT

20m

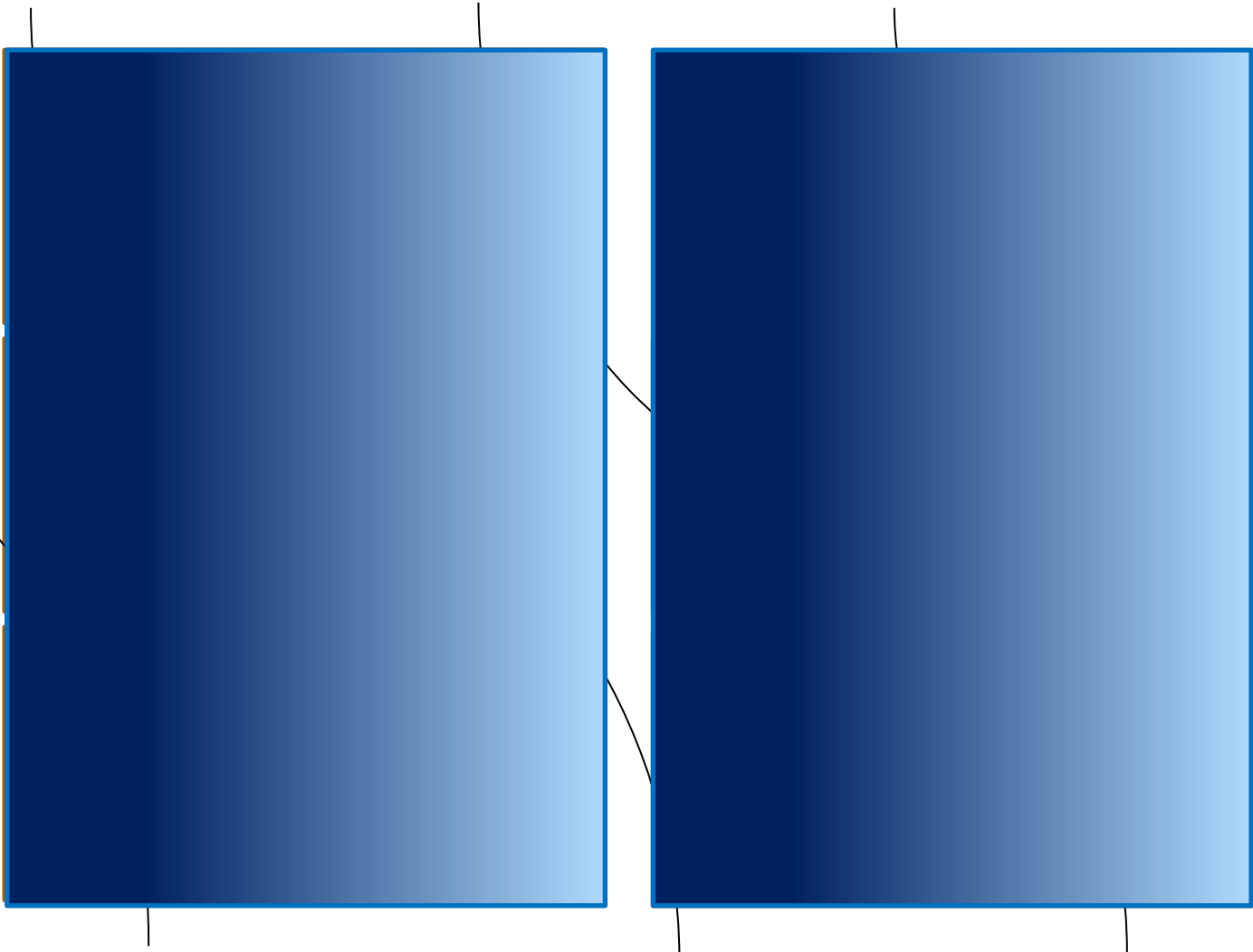
5m



# ANTICIPATED IRRIGATION UNIFORMITY

20m

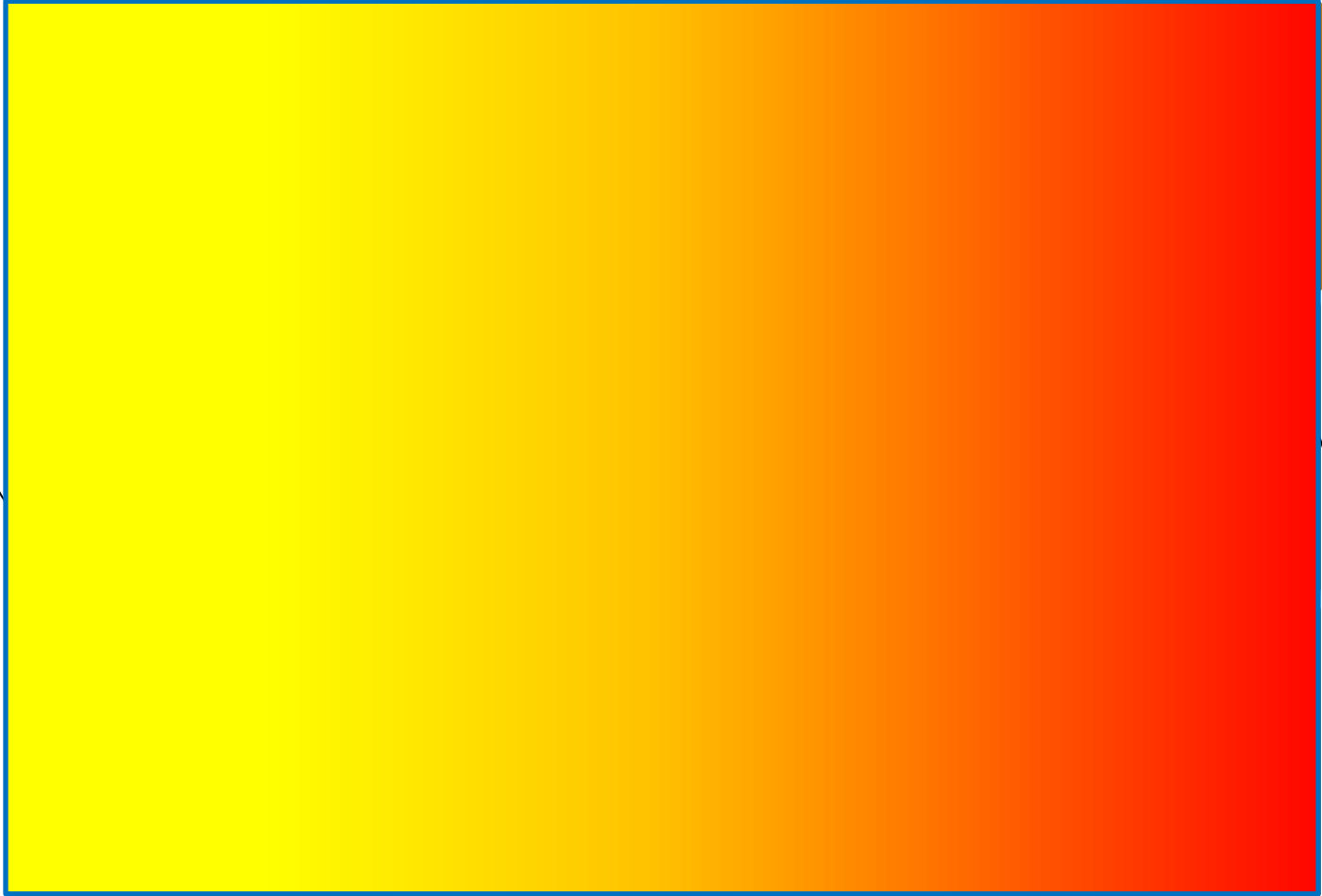
5m



# TEMPERATURE MAP

20m

5m

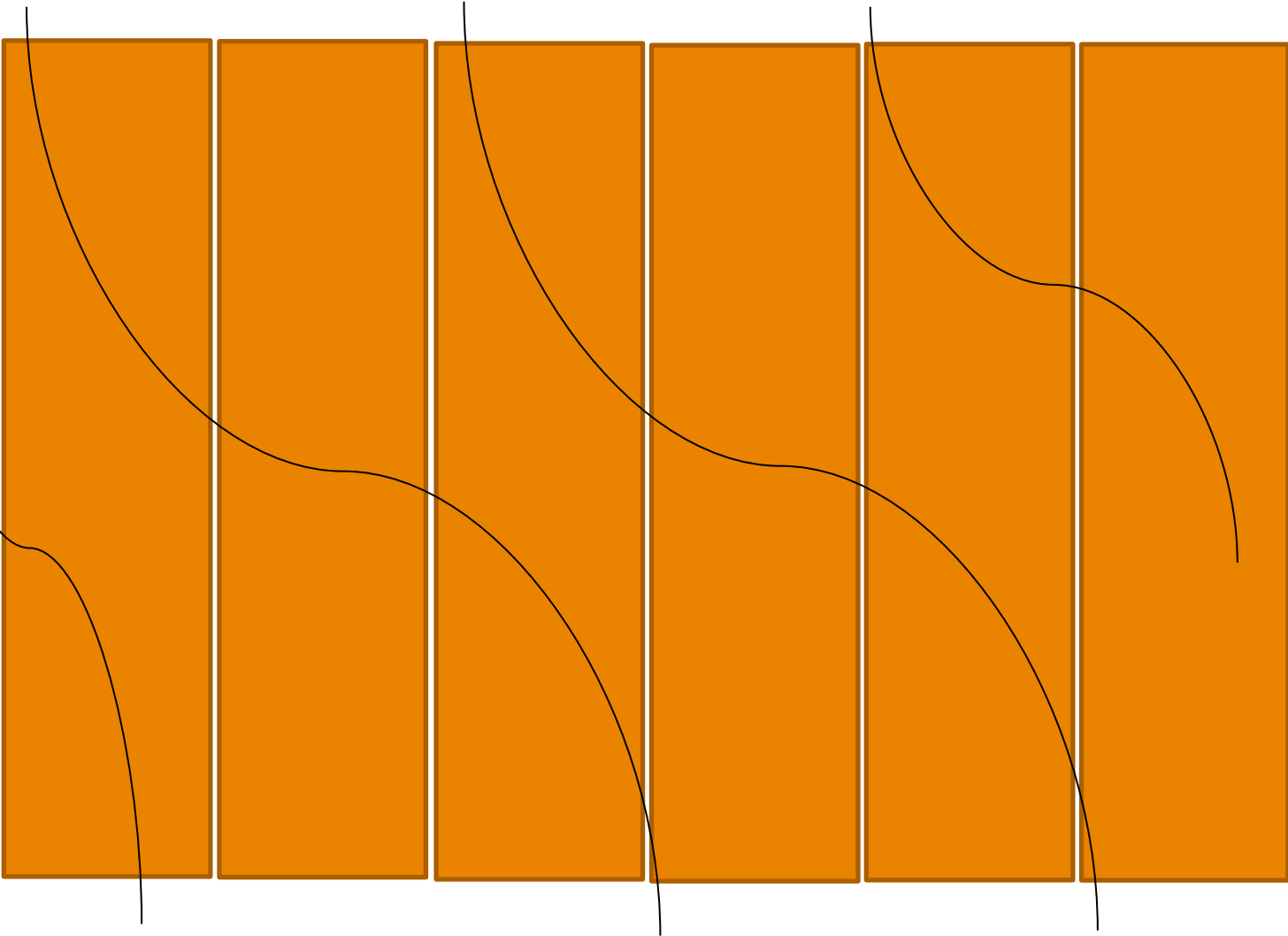




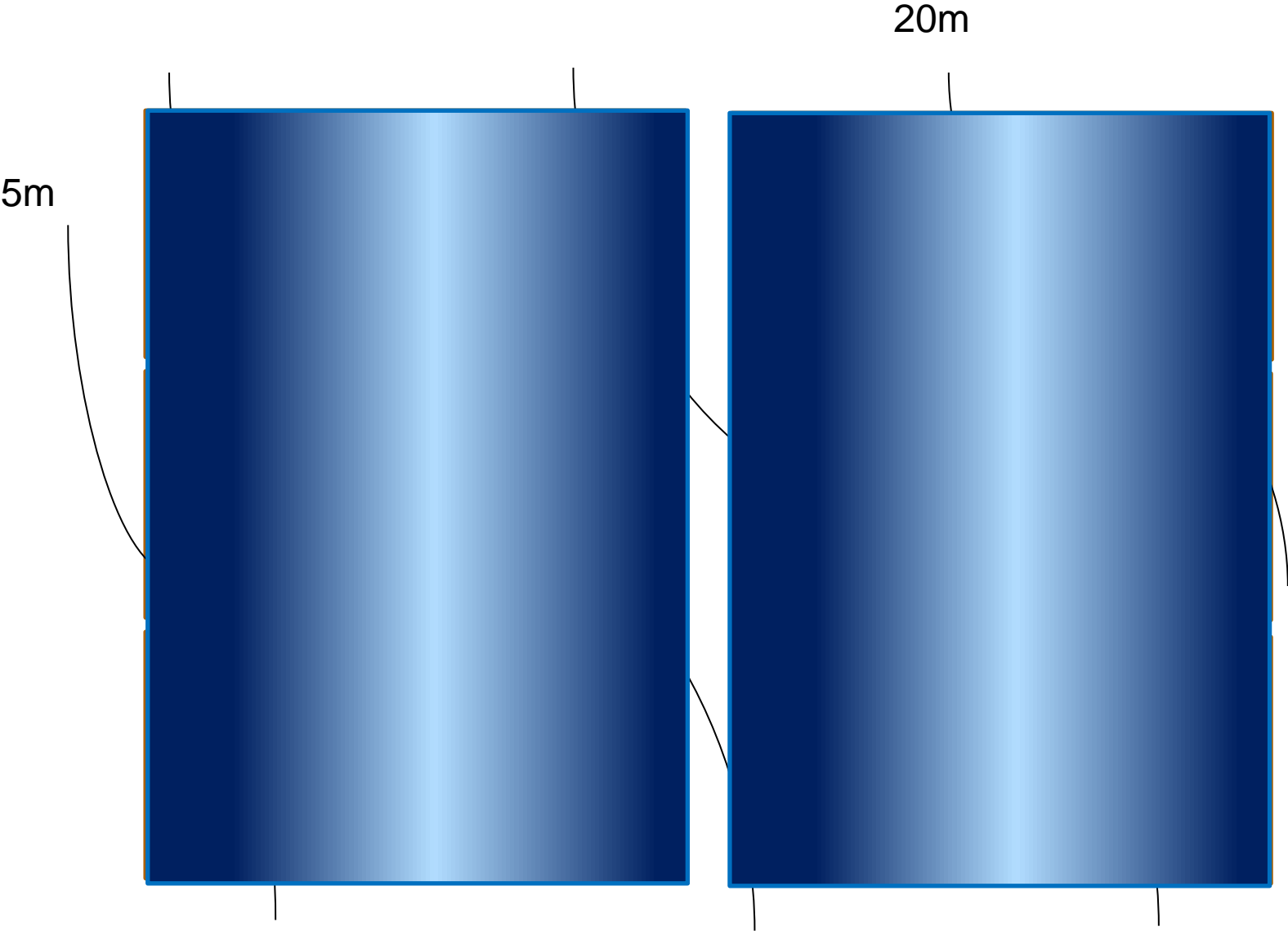
# REVISE IRRIGATION LAYOUT TO IMPROVE EFFICIENCY

20m

5m



# FILL UP MAP



# CAN WE MAKE BETTER USE OF WHAT WE HAVE?

A substrate drip system that takes 20 seconds for all drippers to be at operational pressure.

If run on 3 minute operation introduces 12% variation.

If run for 5 minute operation introduces 7% variation.

## Why would it take 20 seconds to fill up?

- Topography
- Design
- Material Selection
- Assembly

# CAN WE MAKE BETTER USE OF WHAT WE HAVE?

An orchard system that takes 5 minutes for all drippers to be at operational pressure.

If run on 60 minute operation introduces 12% variation.

If run for 180 minute operation introduces 3% variation.

## Why would it take 5 minutes to fill up?

- Topography
- Design
- Material Selection
- Assembly

# LEADING SUBSTRATE GROWERS?



