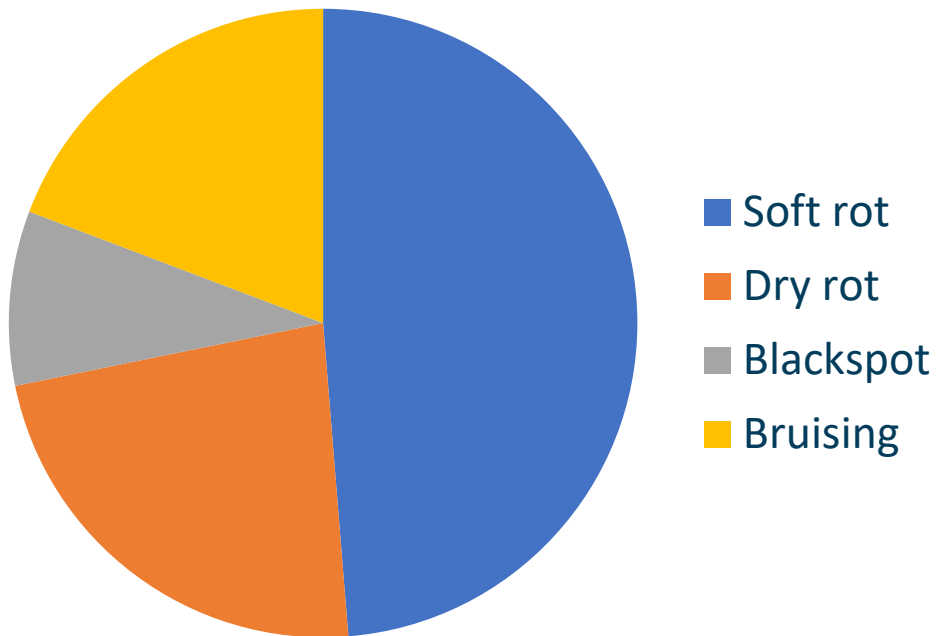
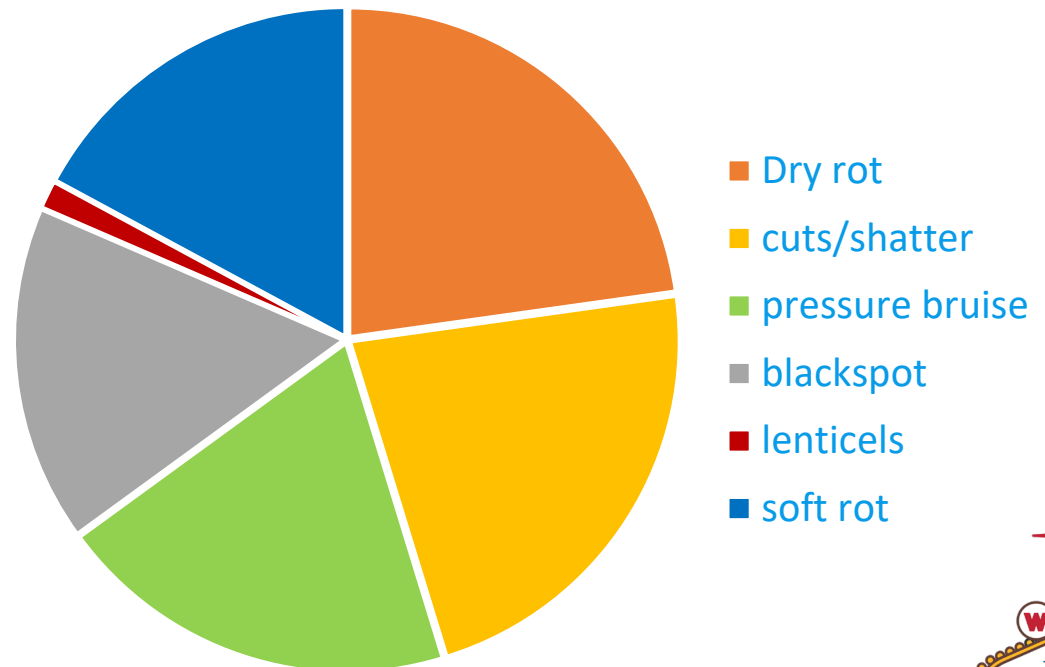


What issues are we dealing with at delivery?

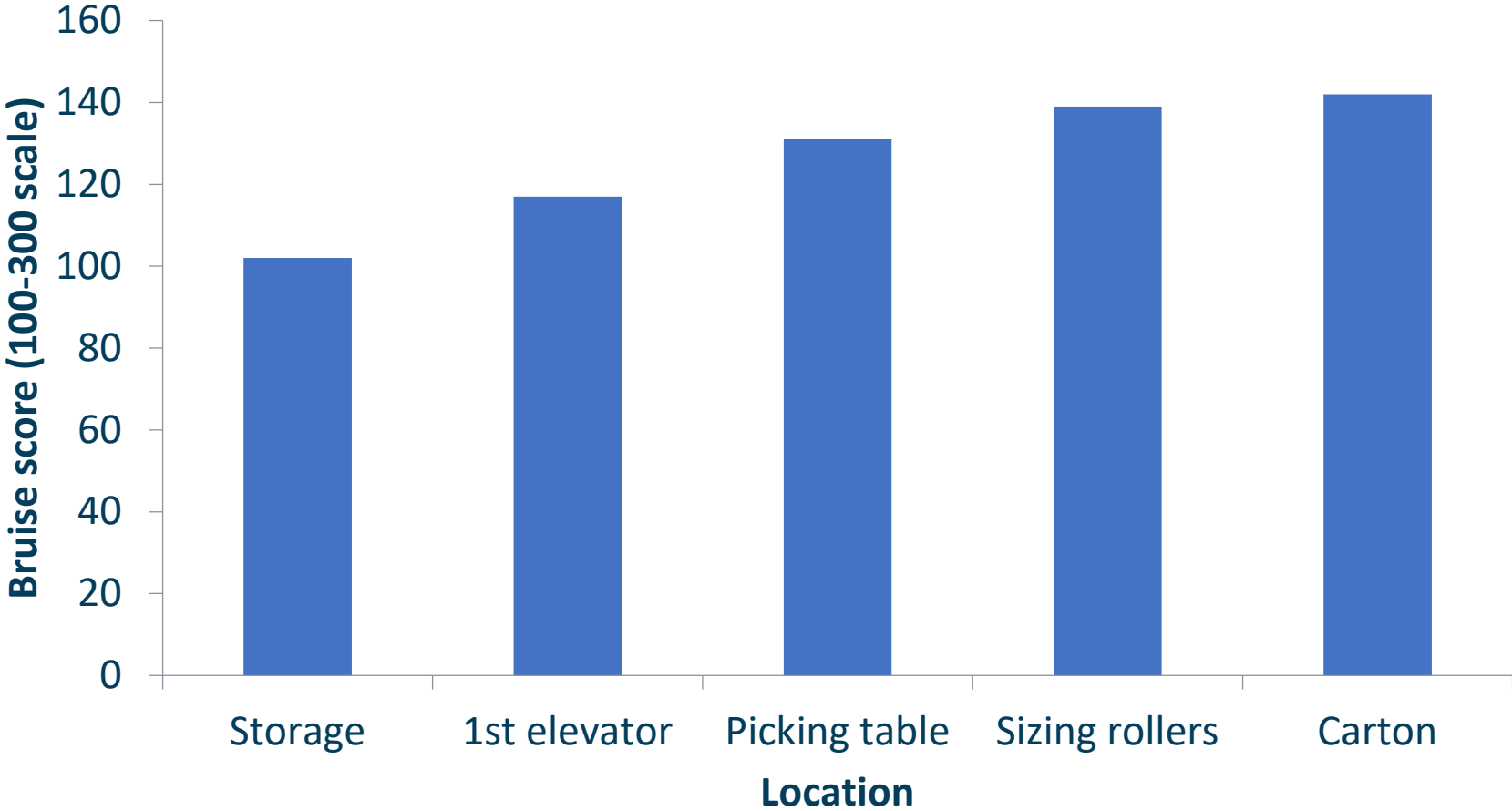
Incidence in shipments to NY between 1972 - 1980



Incidence in shipments in US between 2017 - 2019



Cold chain management starts at the packing operation



Survey of 16 packing sheds in 1980's



Quality of potatoes- blackspot, shatter and dry rot

South Carolina

	Blackspot bruise (%)	Shatter (%)	Dry rot (%)
Packing	58	74	7
Distribution Center	81	84	36

New York

	Blackspot bruise (%)	Shatter (%)	Dry rot (%)
Packing	29	52	19
Distribution Center	84	71	29



~2 X more potatoes with blackspot bruise
 Add 2 blackspot bruises per potato from hauling/packing
 Add ½ to 1 shatter bruise from hauling/packing

Scorable defects same at packing and DC (~4%)





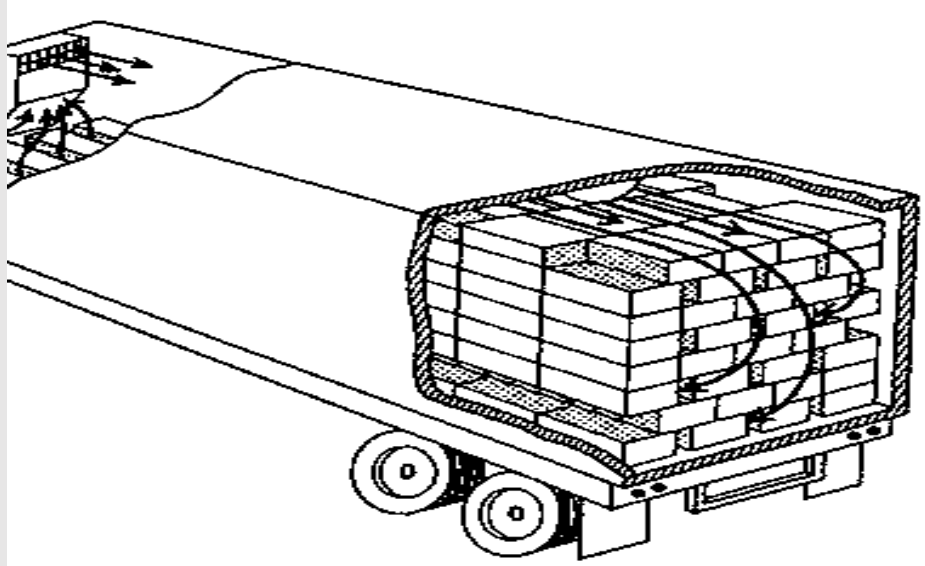


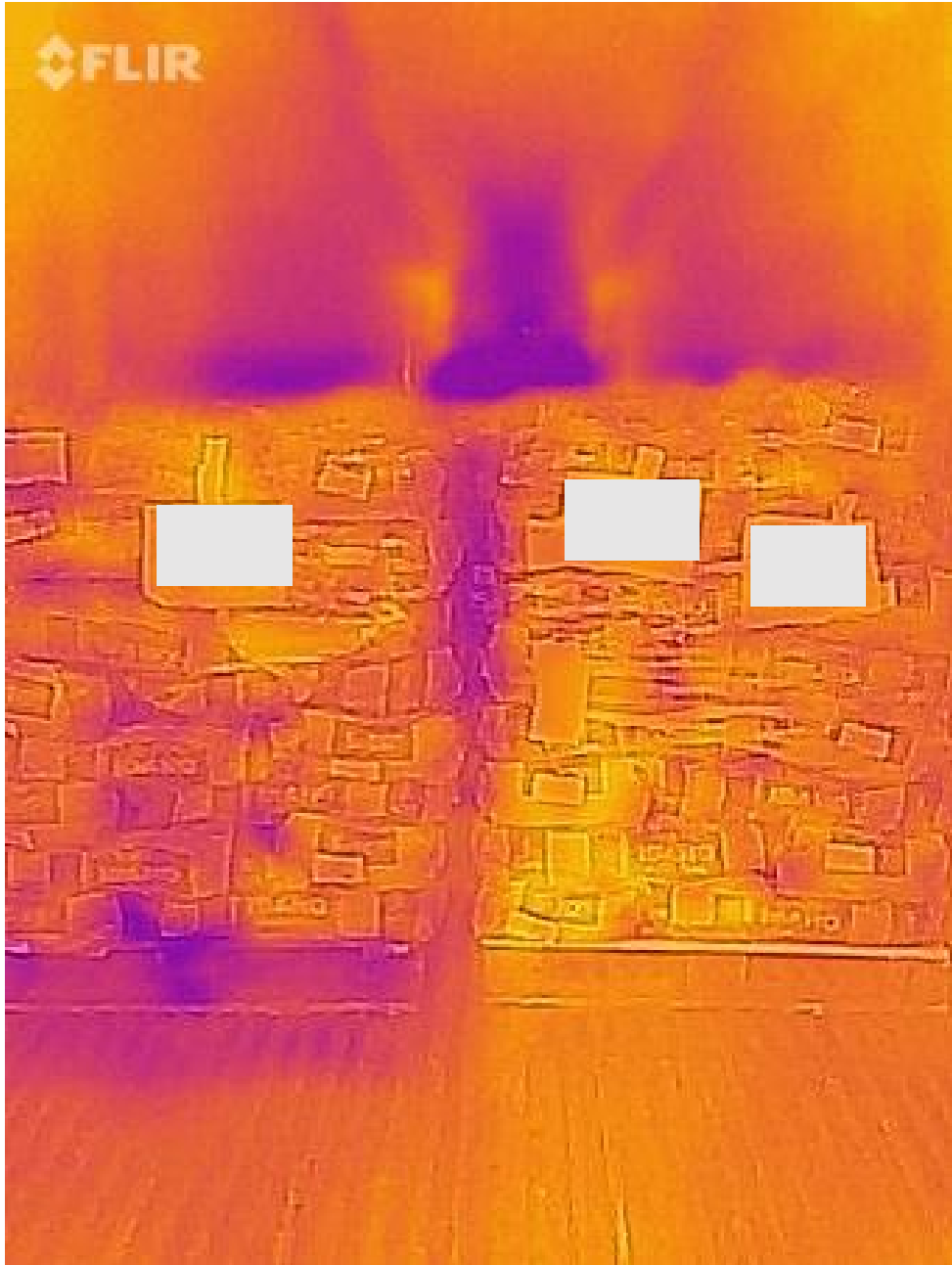


Reducing bruise is about temperature, drops, and padding

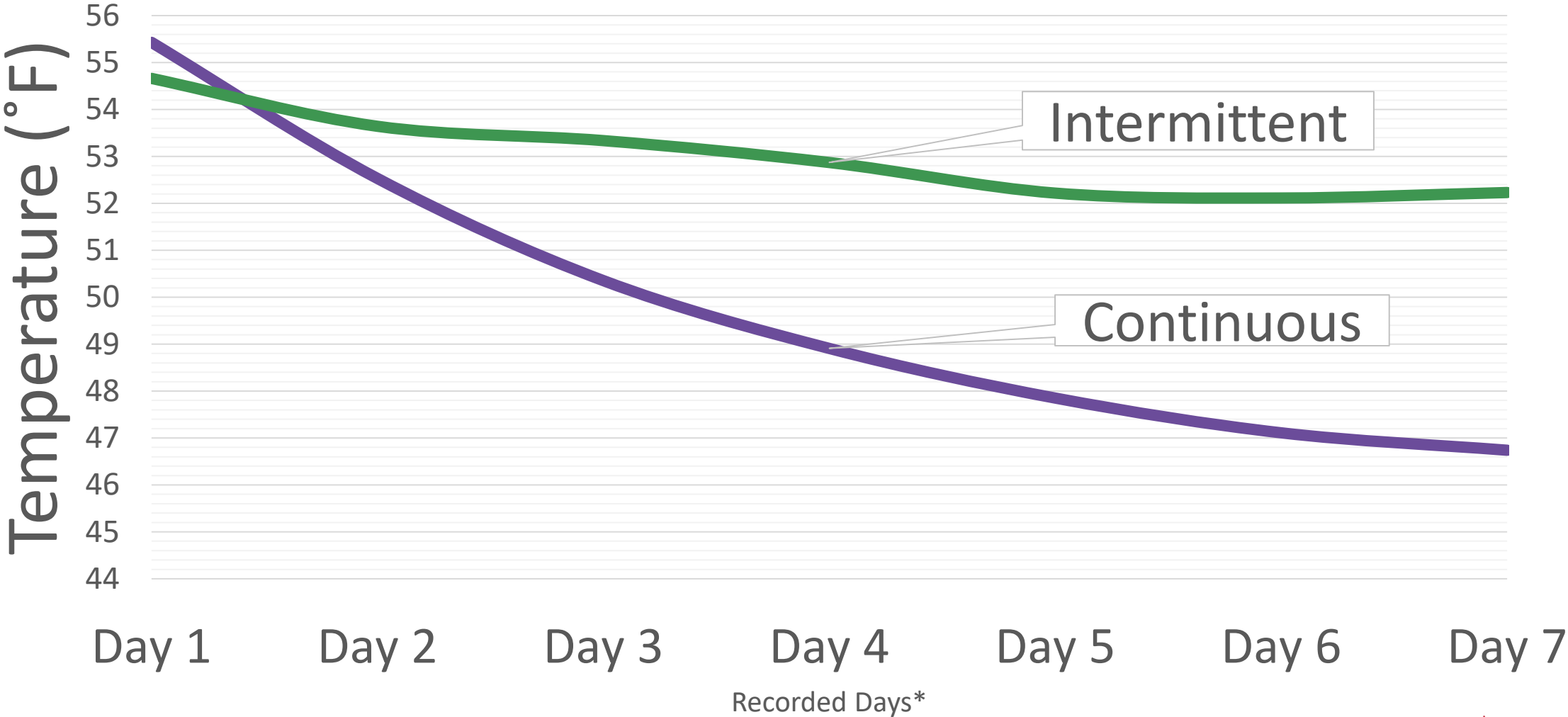
www.uidaho.edu/potatoes

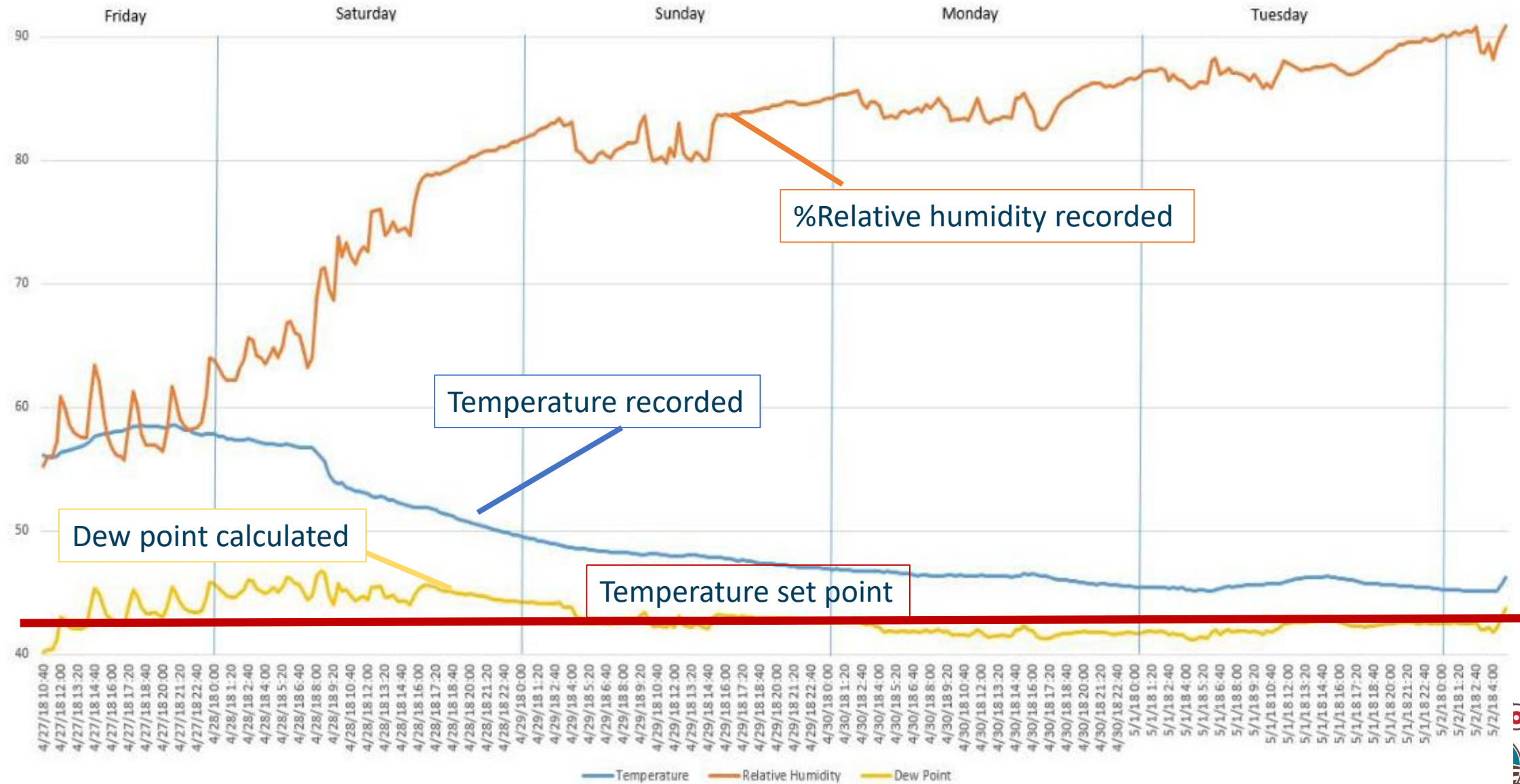




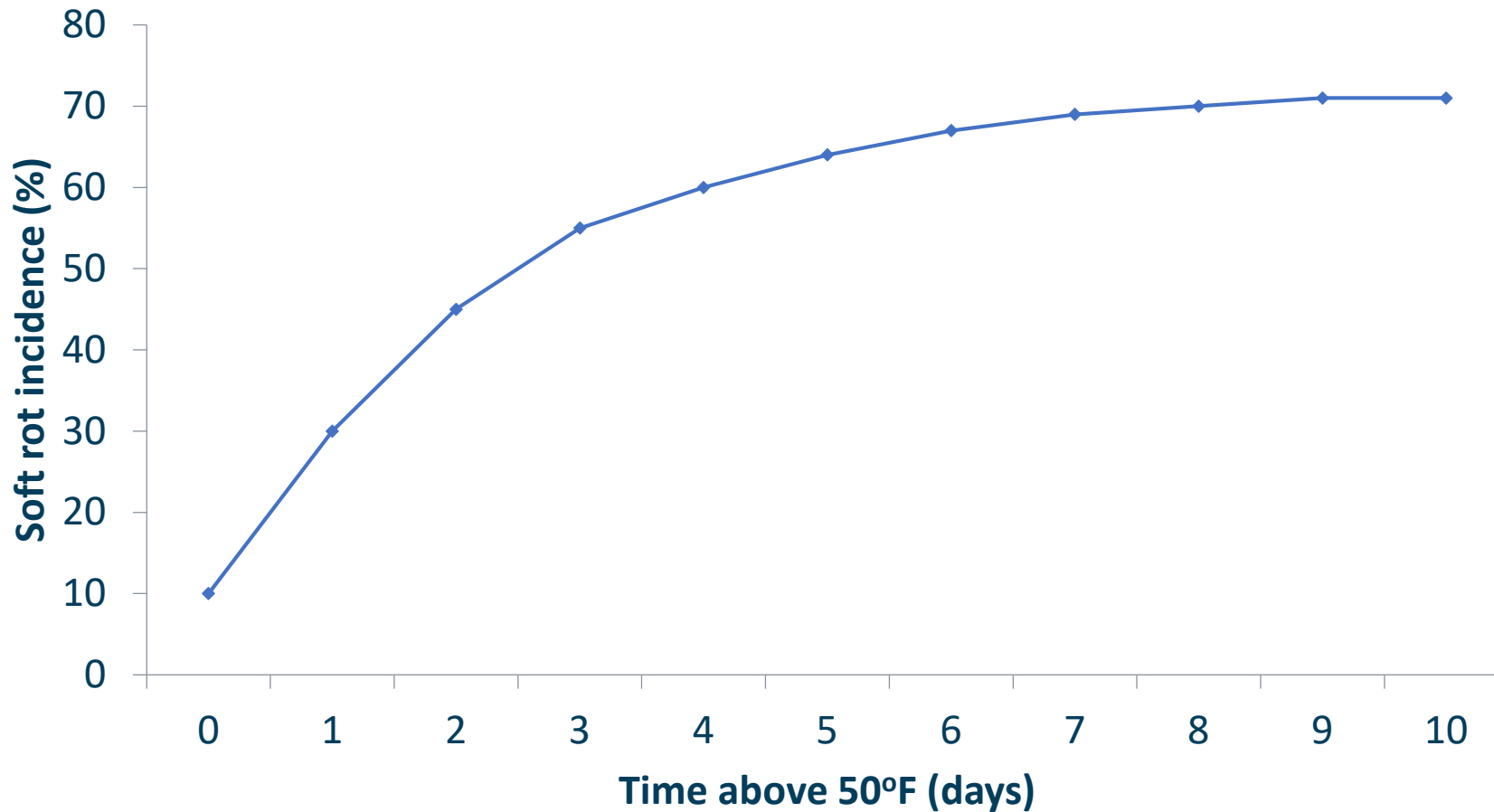


Average Pallet Temperatures for 2 shipments





Relationship between pulp temperature and soft rot



Source: Shetty et al., 1998



Packaging and truck conditions



Poly or Paper Bale

Solid or Mesh Wrap



Quality of potatoes – pressure bruise cutting black

South Carolina

New York

	Pre
Poly in poly	
Poly in paper	
Mesh wrap	
Solid wrap	
Front of truck	
Middle	
Back	



	Pressure Bruise Cutting Black (%)
	19
	26
	24
	20
	11 (50 F)
	23 (52 F)
	33 (48 F)

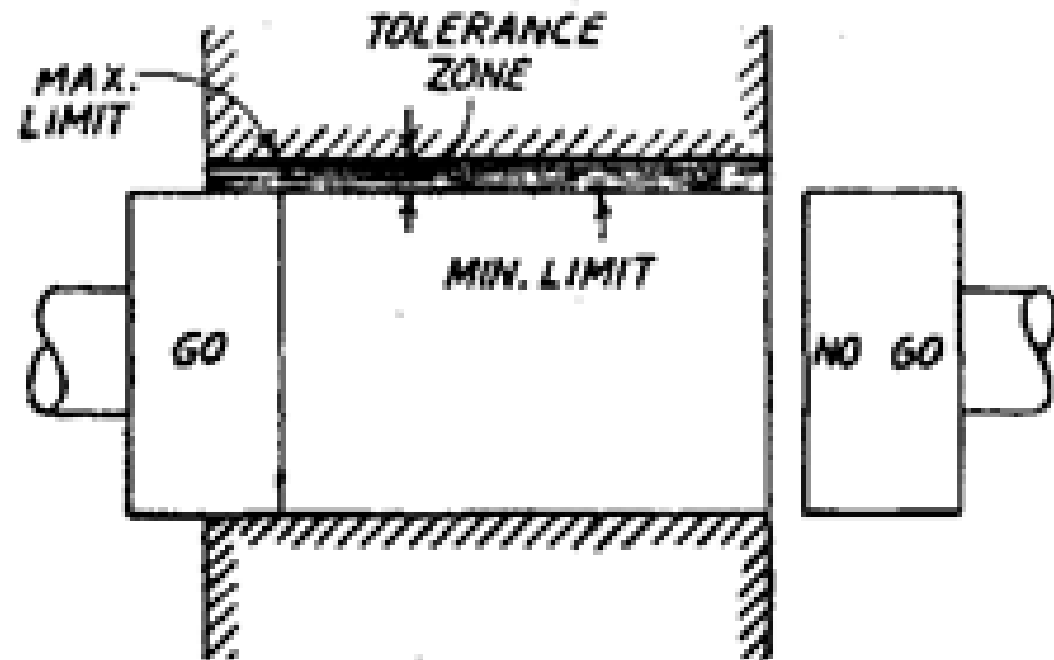
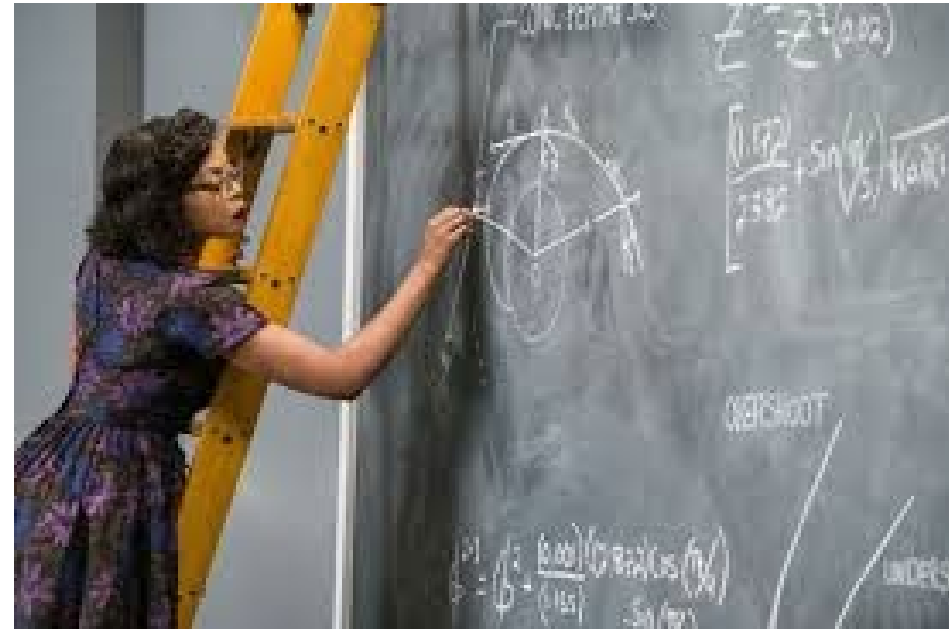
- **3 x more** pressure bruise cutting black at DC compared to packing
- Placement in truck and setting greater factor than packaging
- Cutting black similar to packing when stored instead of shipped



Packing shed

- **Go-no-go**

- In quality control, 'go' denotes that a product conforms to the specifications; when it does not, it is 'no go.'
- Each shed needs own quality risk assessment
 - Incorporate transit duration and DC location
 - Type of quality concerns





Trucks are good at holding temperatures,
not so good at cooling

