



CRC

for

Premium

Quality

Wool

# Correlated Responses in Staple Strength

Produced for the CRC for Premium Quality Wool undergraduate program by;  
Dr. Brad Crook, The University of New England.



# Phenotypic relationships between wool traits, including staple strength

<i>Trait</i>	<i>FD</i>	<i>CVFD</i> (midside)	<i>SS</i>
<i>CFW</i>	<i>0.26, 0.32</i>	<i>-0.06, -0.02</i>	<i>0.03, 0.11</i>
<i>FD</i>		<i>-0.23, -0.11</i>	<i>0.18, 0.27</i>
<i>CVFD</i> (midside)			<i><b>-0.50, -0.42</b></i>

CRC

for

Premium

Quality

Wool



# Genetic relationships between wool traits, including staple strength

<i>Trait</i>	<i>FD</i>	<i>CVFD</i> (midside)	<i>SS</i>
<i>CFW</i>	<i>0.16, 0.63</i>	<i>-0.21, 0.38</i>	<i>-0.14, 0.42</i>
<i>FD</i>		<i>-0.20, 0.05</i>	<i>-0.07, 0.45</i>
<i>CVFD</i> (midside)			<i>-0.86, -0.62</i>

CRC

for

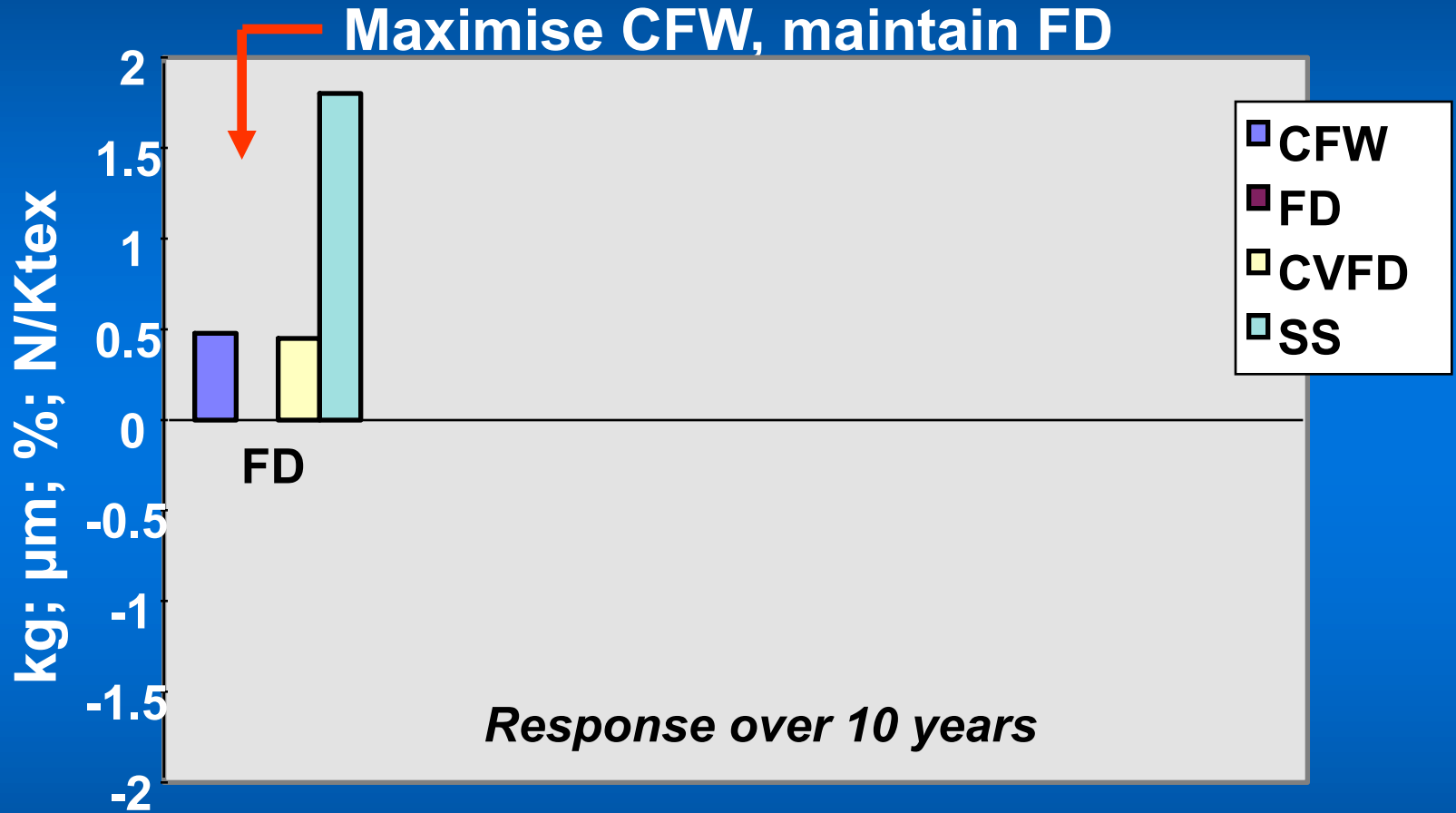
Premium

Quality

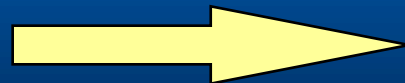
Wool



# What happens to staple strength if selection based on clean fleece weight and fibre diameter only?



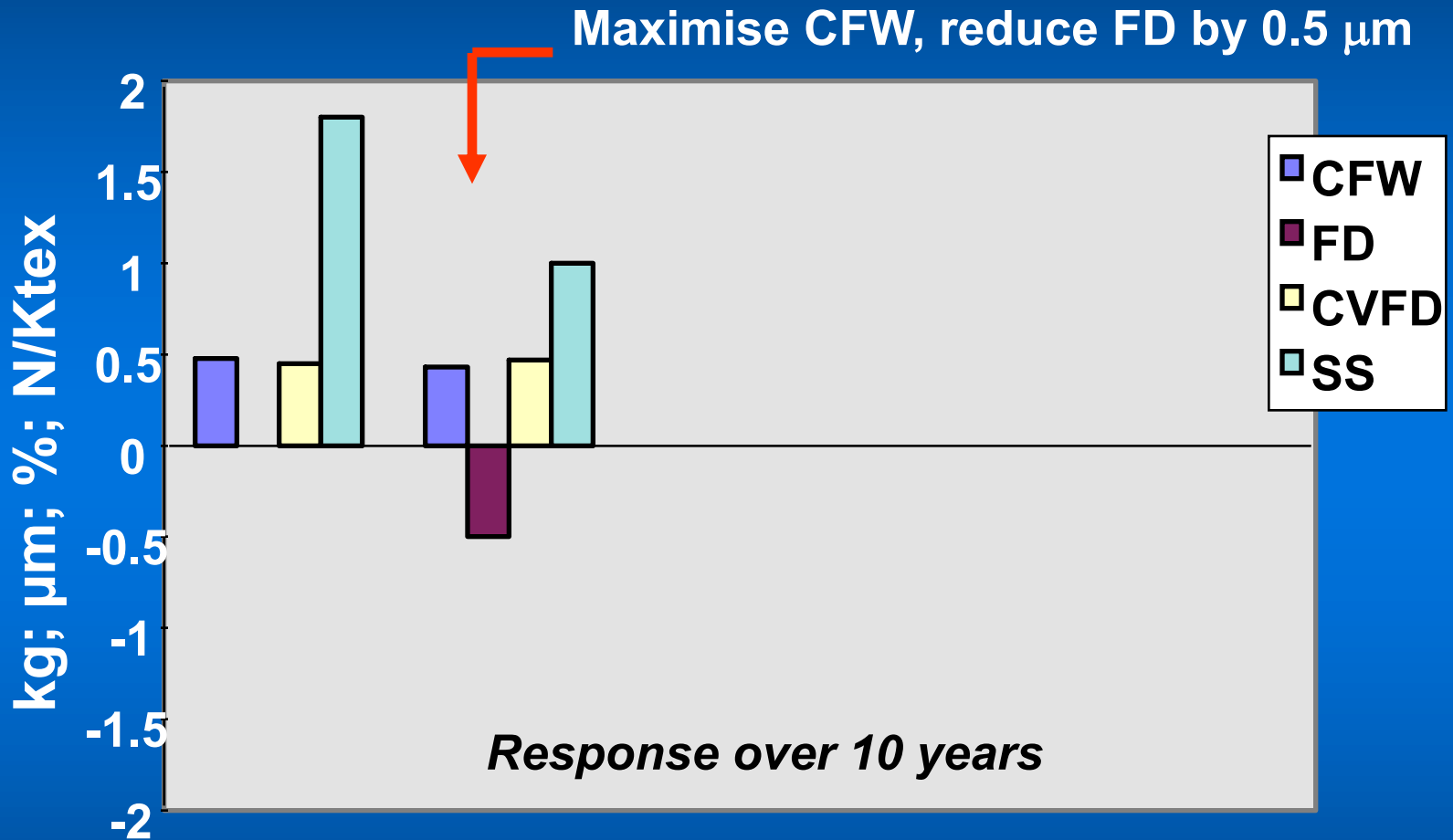
Increasing emphasis to reduce fibre diameter



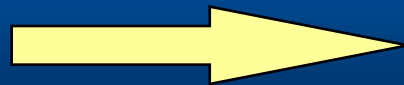
CRC  
for  
Premium  
Quality  
Wool



# What happens to staple strength if selection based on clean fleece weight and fibre diameter only?



Increasing emphasis to reduce fibre diameter



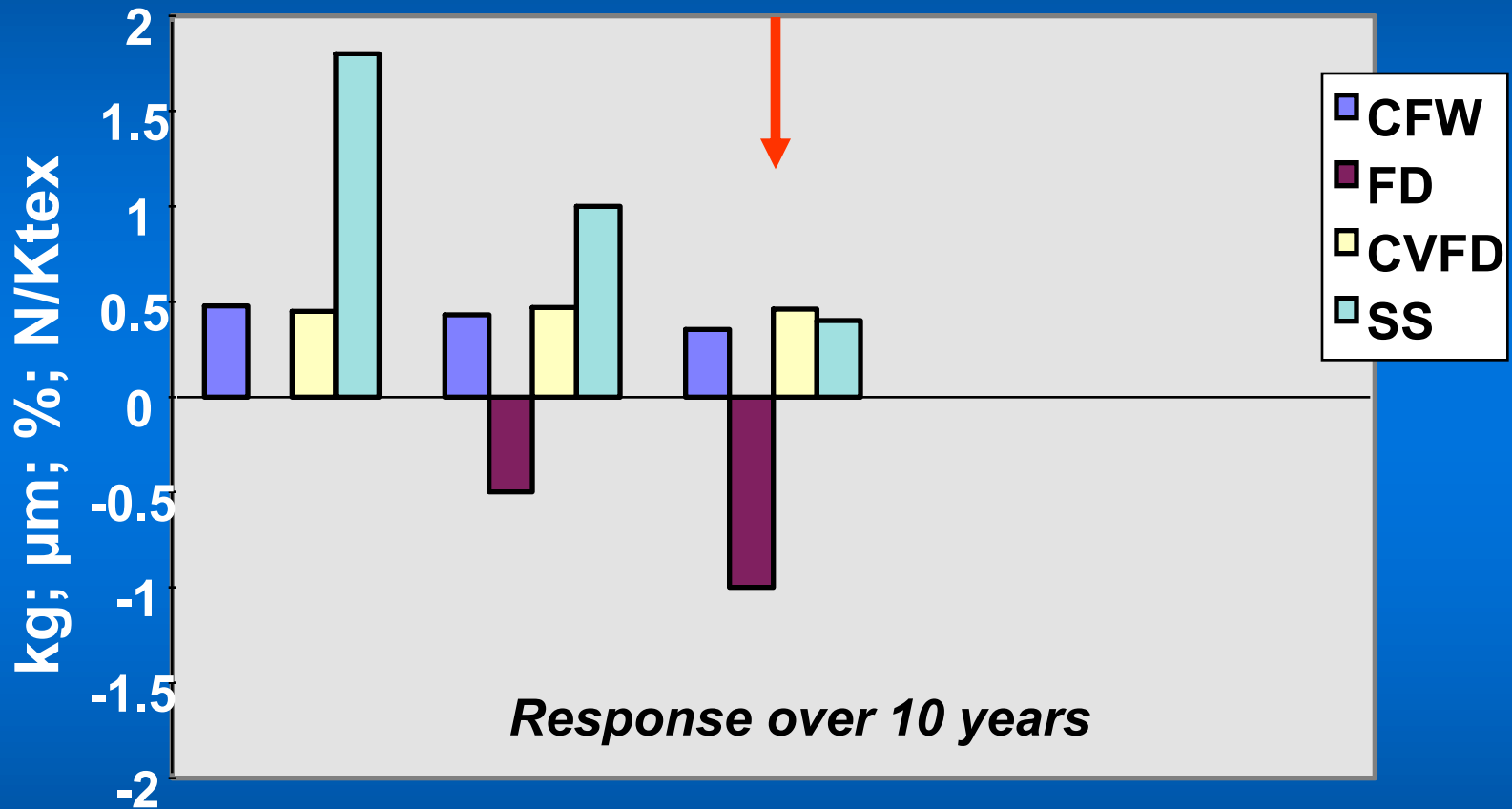
CRC  
for  
Premium  
Quality  
Wool



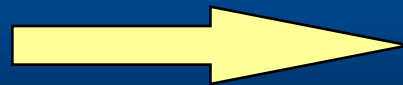


# What happens to staple strength if selection based on clean fleece weight and fibre diameter only?

Maximise CFW, reduce FD by 1.0  $\mu\text{m}$



Increasing emphasis to reduce fibre diameter

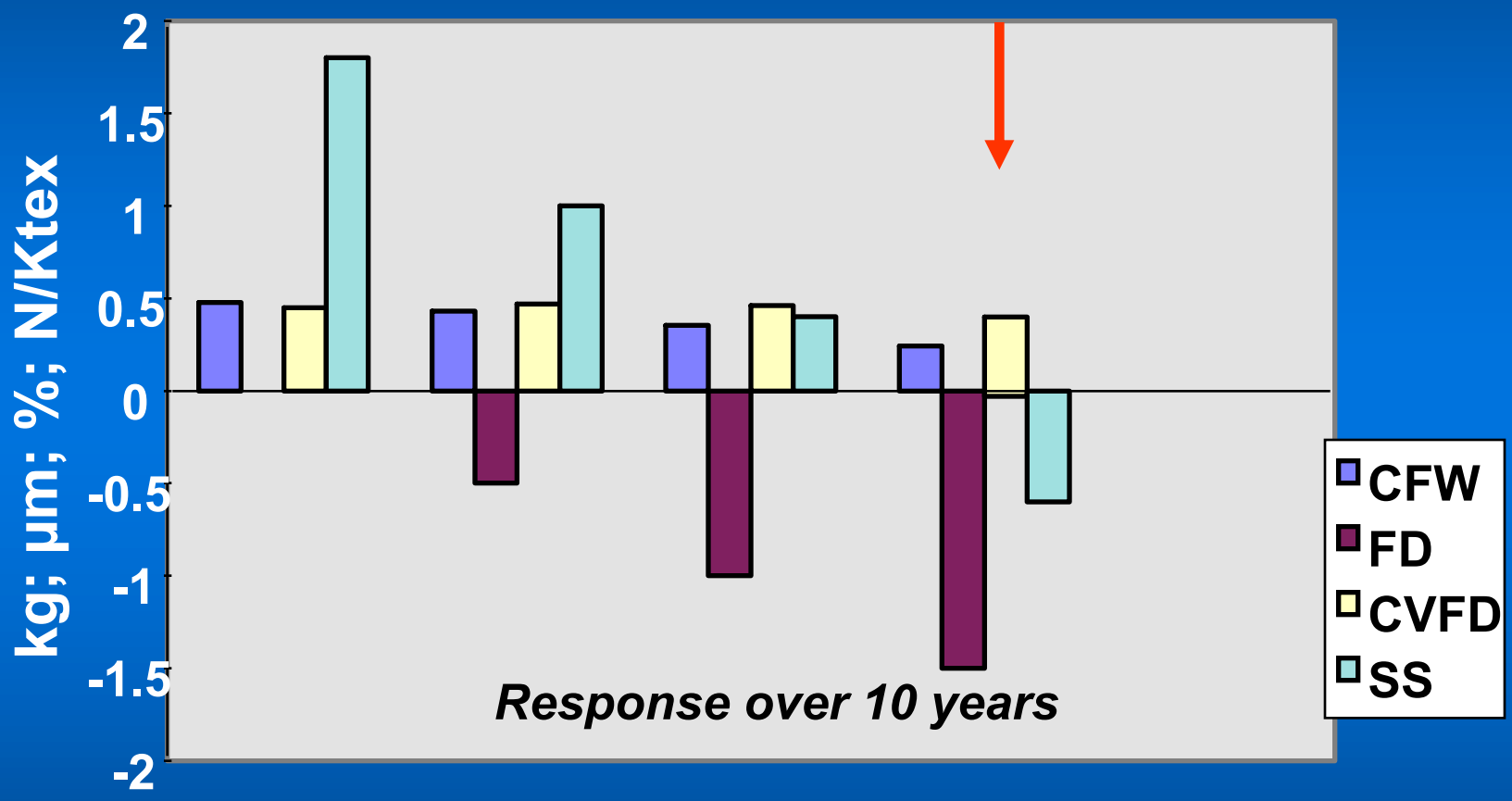


CRC  
for  
Premium  
Quality  
Wool

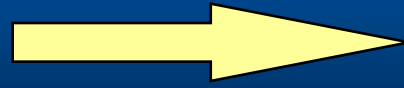


# What happens to staple strength if selection based on clean fleece weight and fibre diameter only?

Maximise CFW, reduce FD by 1.5  $\mu\text{m}$



Increasing emphasis to reduce fibre diameter

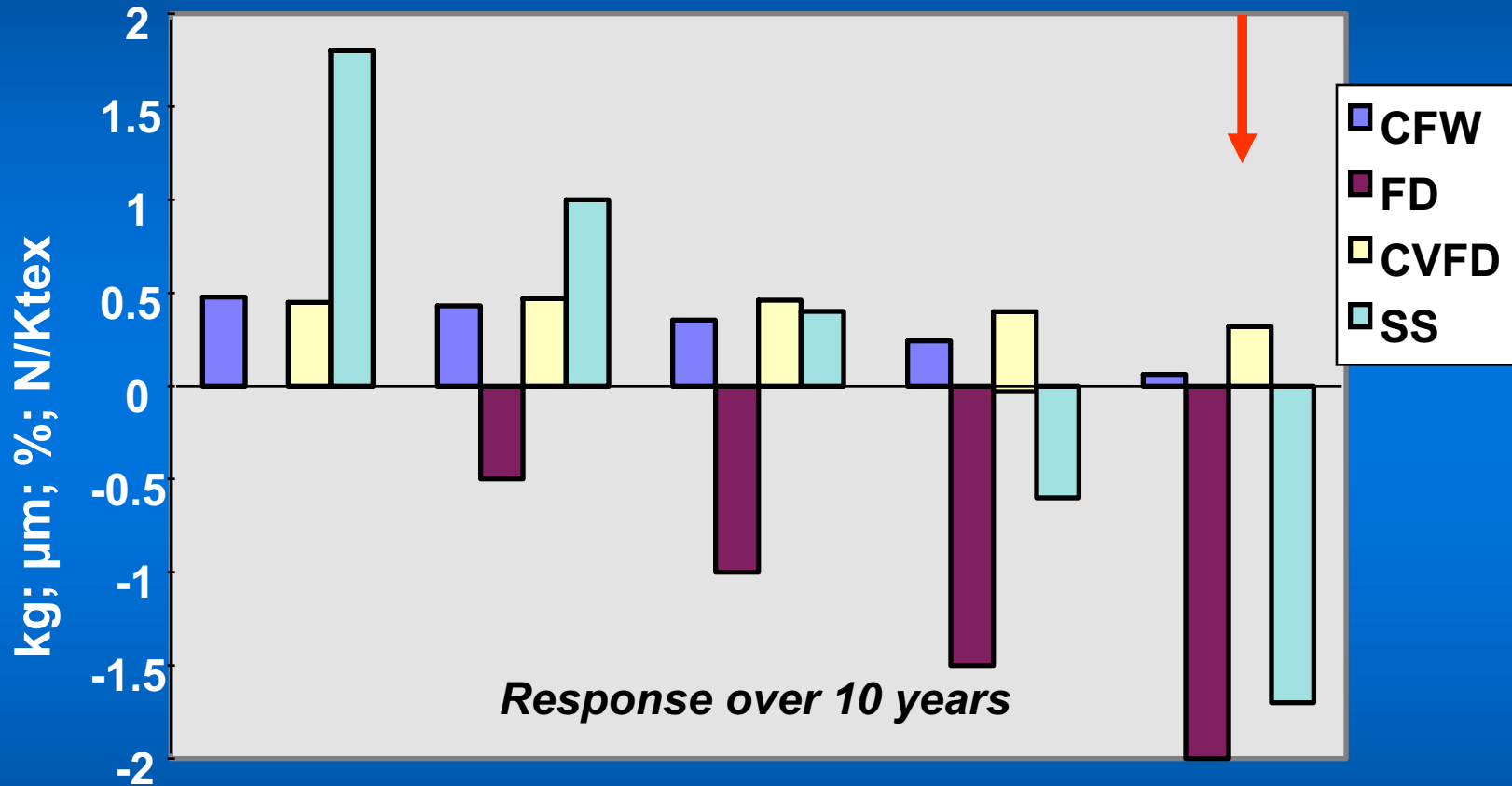


CRC  
for  
Premium  
Quality  
Wool

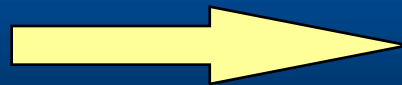


# What happens to staple strength if selection based on clean fleece weight and fibre diameter only?

Maximise CFW, reduce FD by 2  $\mu\text{m}$



Increasing emphasis to reduce fibre diameter

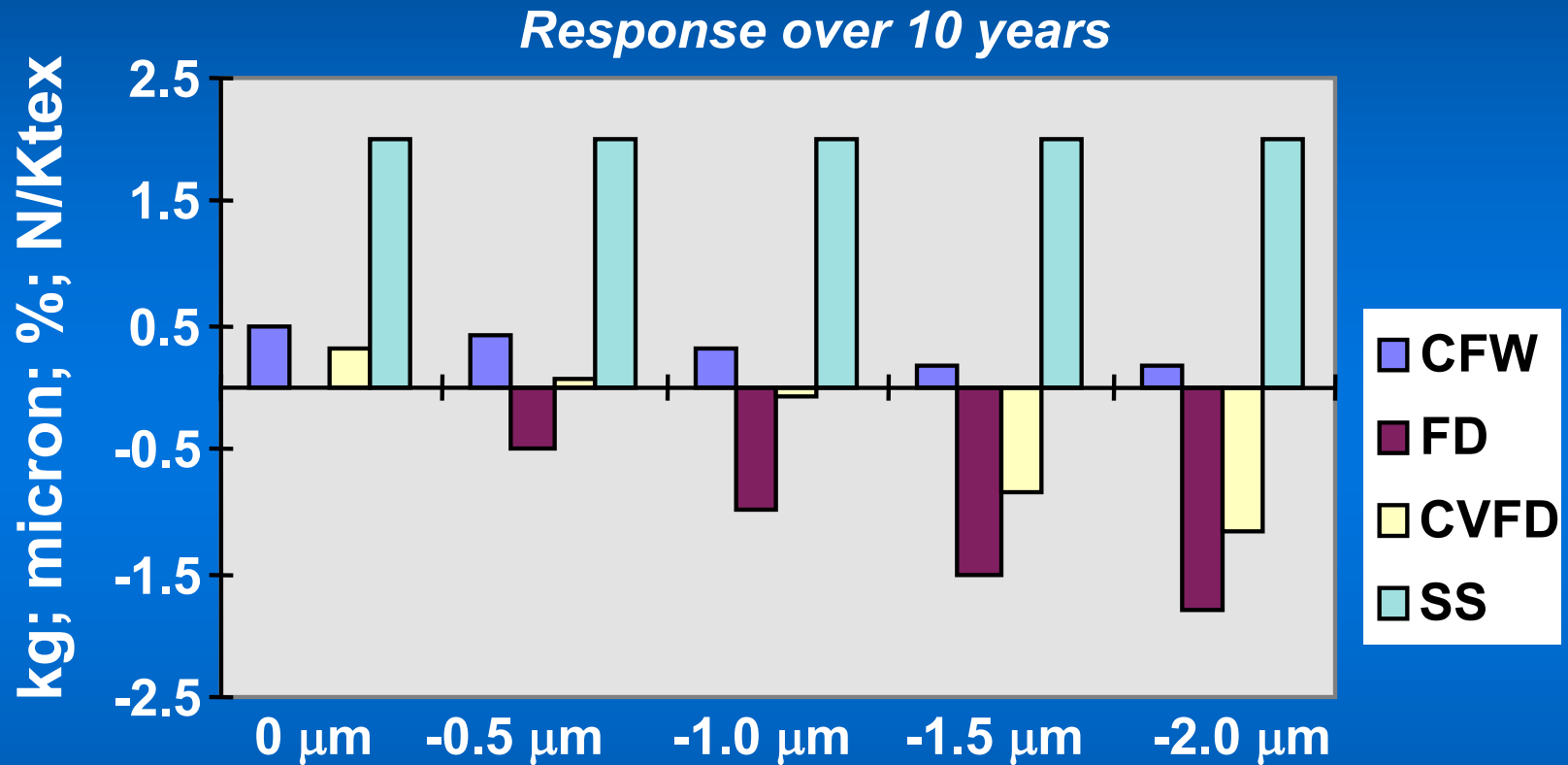


CRC  
for  
Premium  
Quality  
Wool

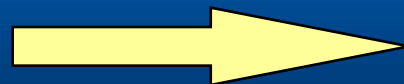




# What happens to staple strength if selection is based on clean fleece weight, fibre diameter and CVFD?



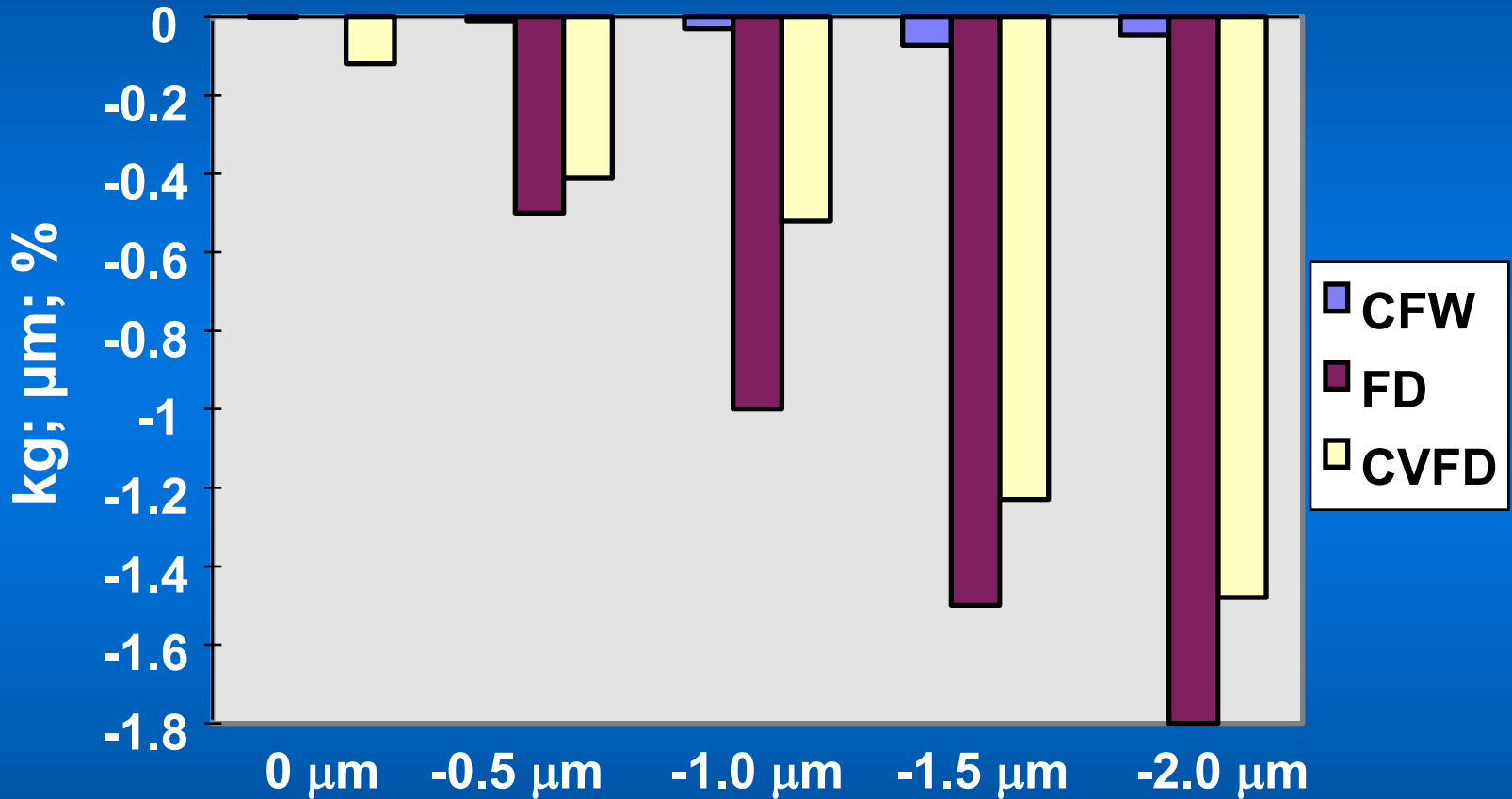
Increasing emphasis to reduce fibre diameter



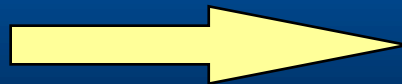
CRC  
for  
Premium  
Quality  
Wool



# Penalties in CFW and benefits in CVFD by increasing SS by 2N/ktex for different reductions in FD in 10 years



Increasing emphasis to reduce fibre diameter



CRC  
for  
Premium  
Quality  
Wool