



MISG 2022

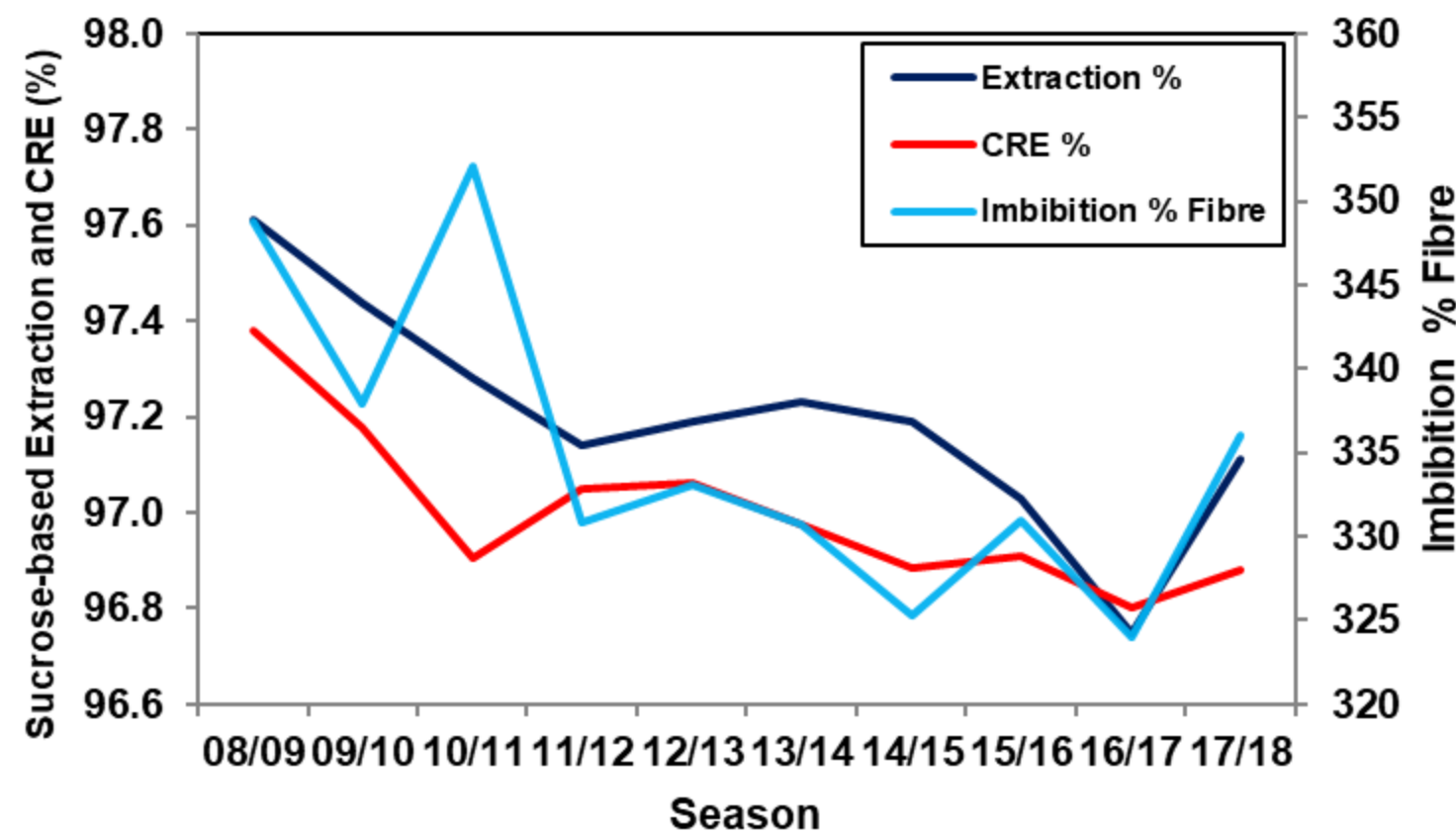
Diffuser optimum imbibition

Industry representative: Dr Richard Loubser

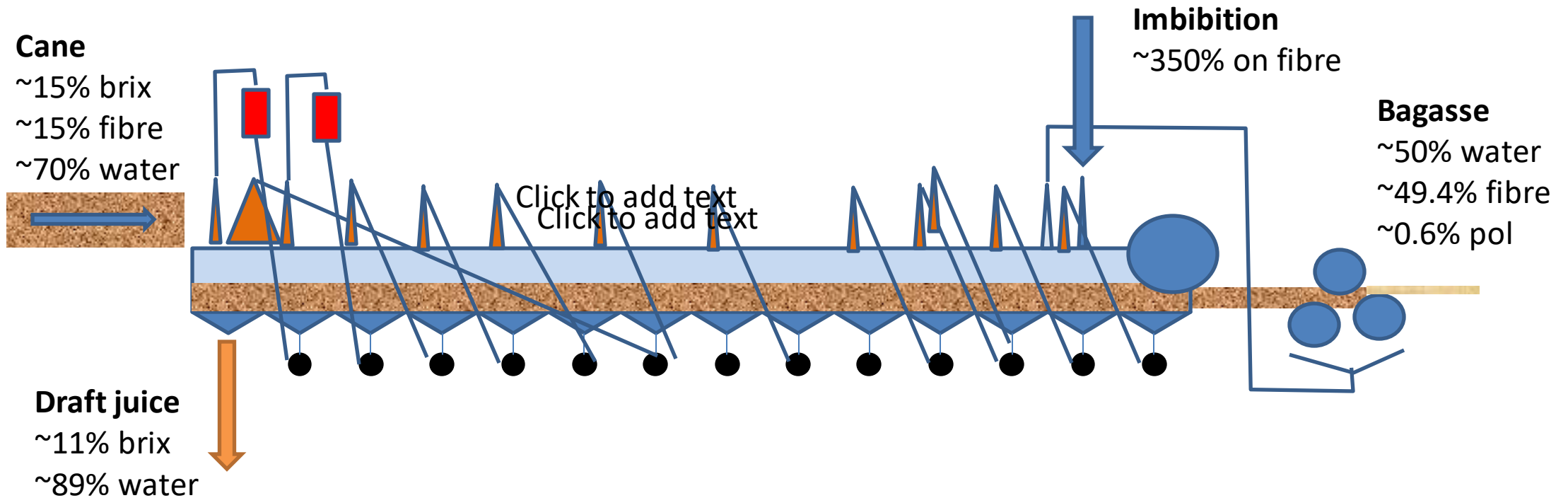
Problem background

- Need to reduce imbibition to save energy in the evaporator
- It has long been argued that reducing imbibition inevitably reduces extraction
- Can proper diffuser control mitigate the impact of reducing imbibition?

Extraction trends



The extraction process

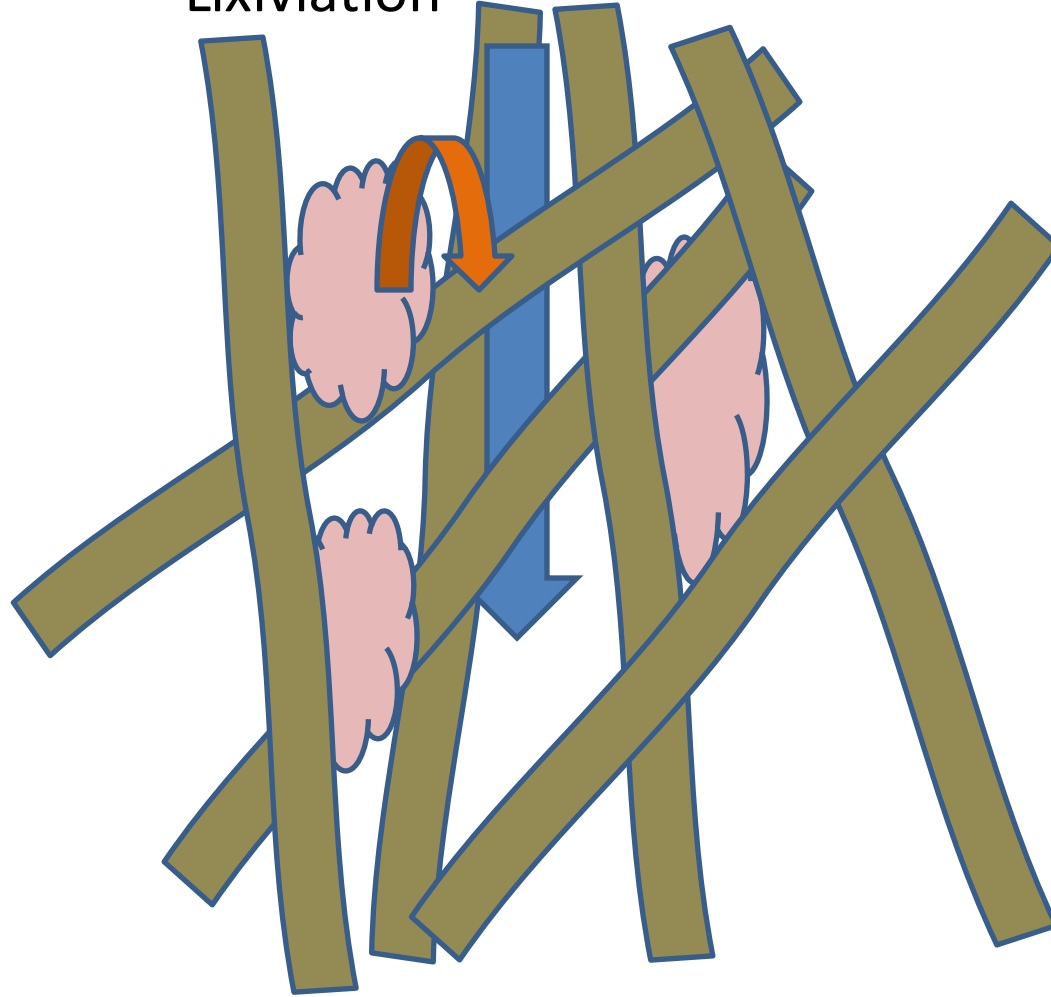


Shredded cane

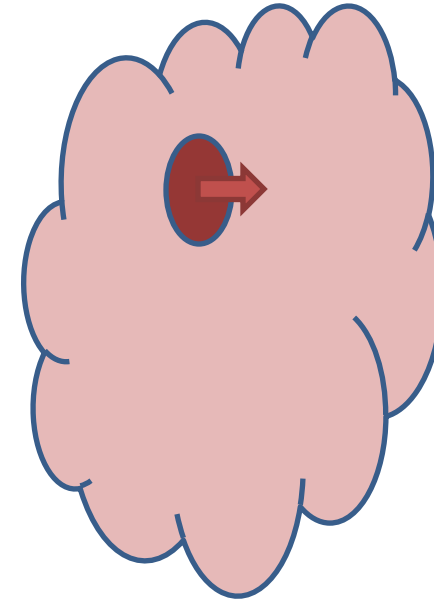


Extraction mechanism

Lixiviation

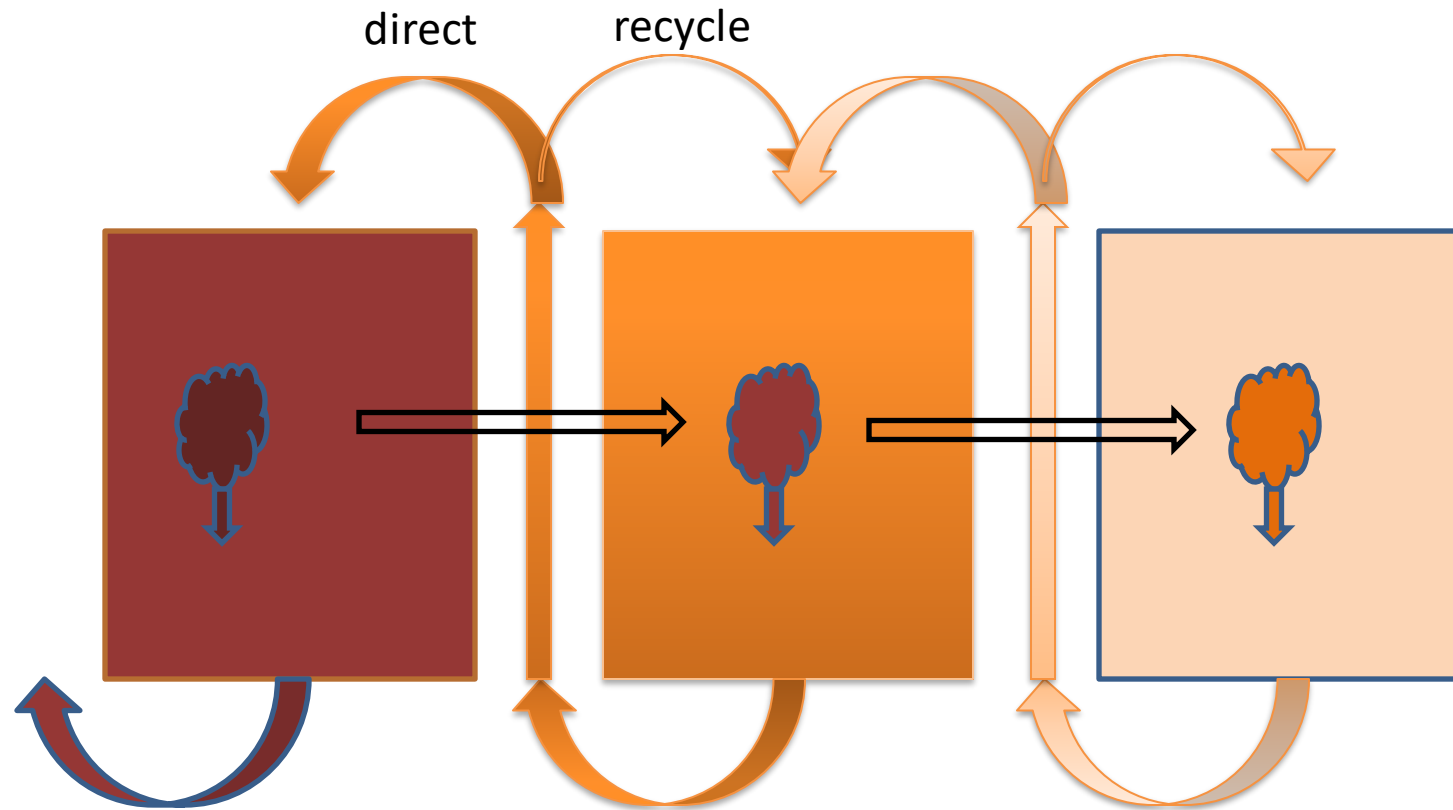


Diffusion



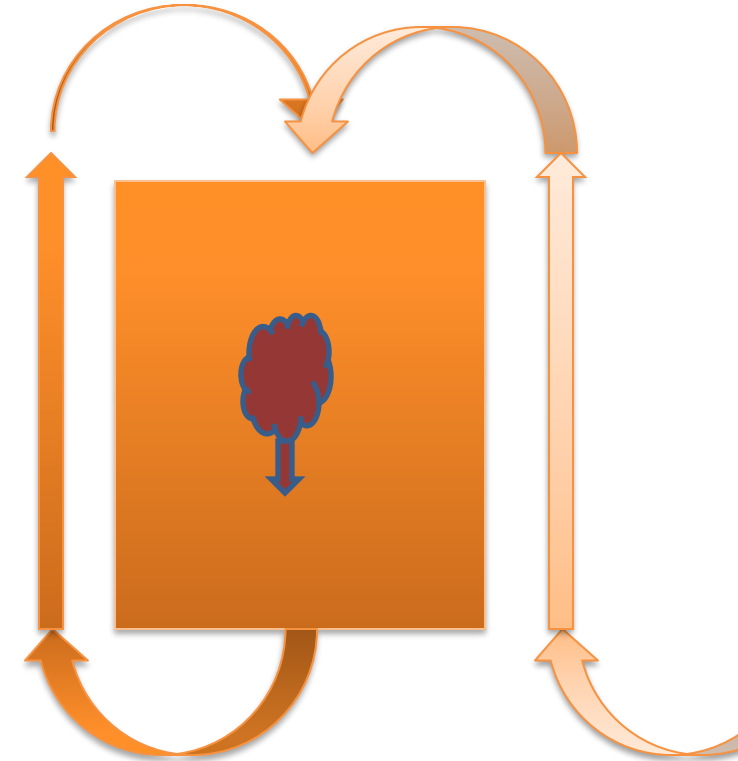
~90% Open cells

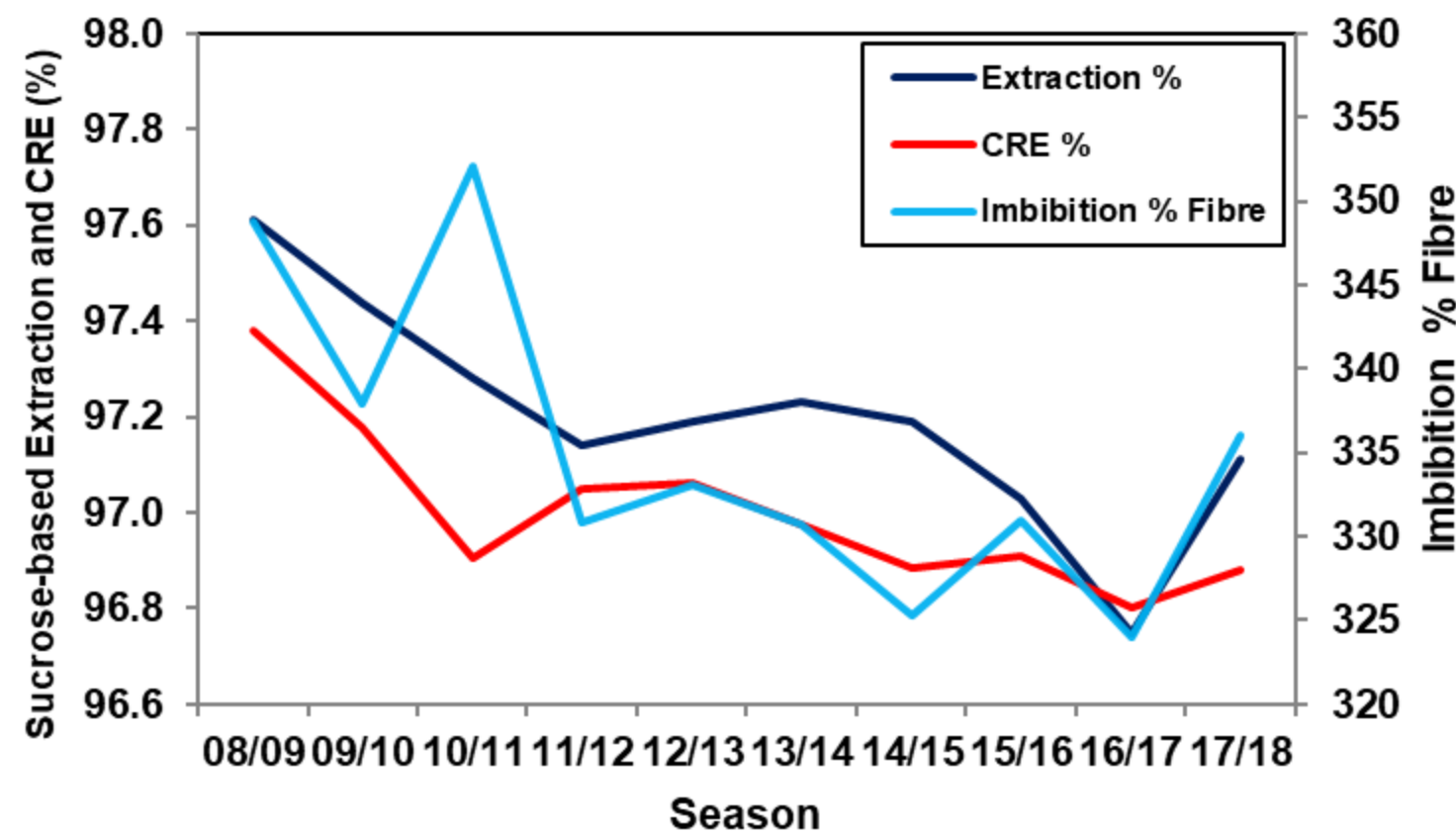
The extraction driver



Effect of recycle

- Total flow in stage is
 - recycle + direct
- More recycle -> more juice in stage
 - > more mass transfer
- More recycle -> brix recycle
 - > reduced concentration difference





ion

ion an inevitable
ition

the effect of using less

