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Mineral nutrition for improved mandarin quality

Funding

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Mineral nutrition for improved mandarin quality

Goal

To evaluate enhanced potassium, calcium, and boron treatments to improve fruit quality


- HLB-affected fruit are often small, lopsided, uneven colored, and poor in taste
- Mandarins are primarily targeted for fresh consumption and therefore, visual appearance along with taste of fruit is CRITICAL!
- Florida growers are interested in growing mandarins such as Sugar Belle and Tango as they withstand HLB better than sweet oranges. However, fruit quality can be an issue!

Strategies to improve quality and color of 'Tango' fruit

10-year old 'Tango'
and 'Sugar Belle'

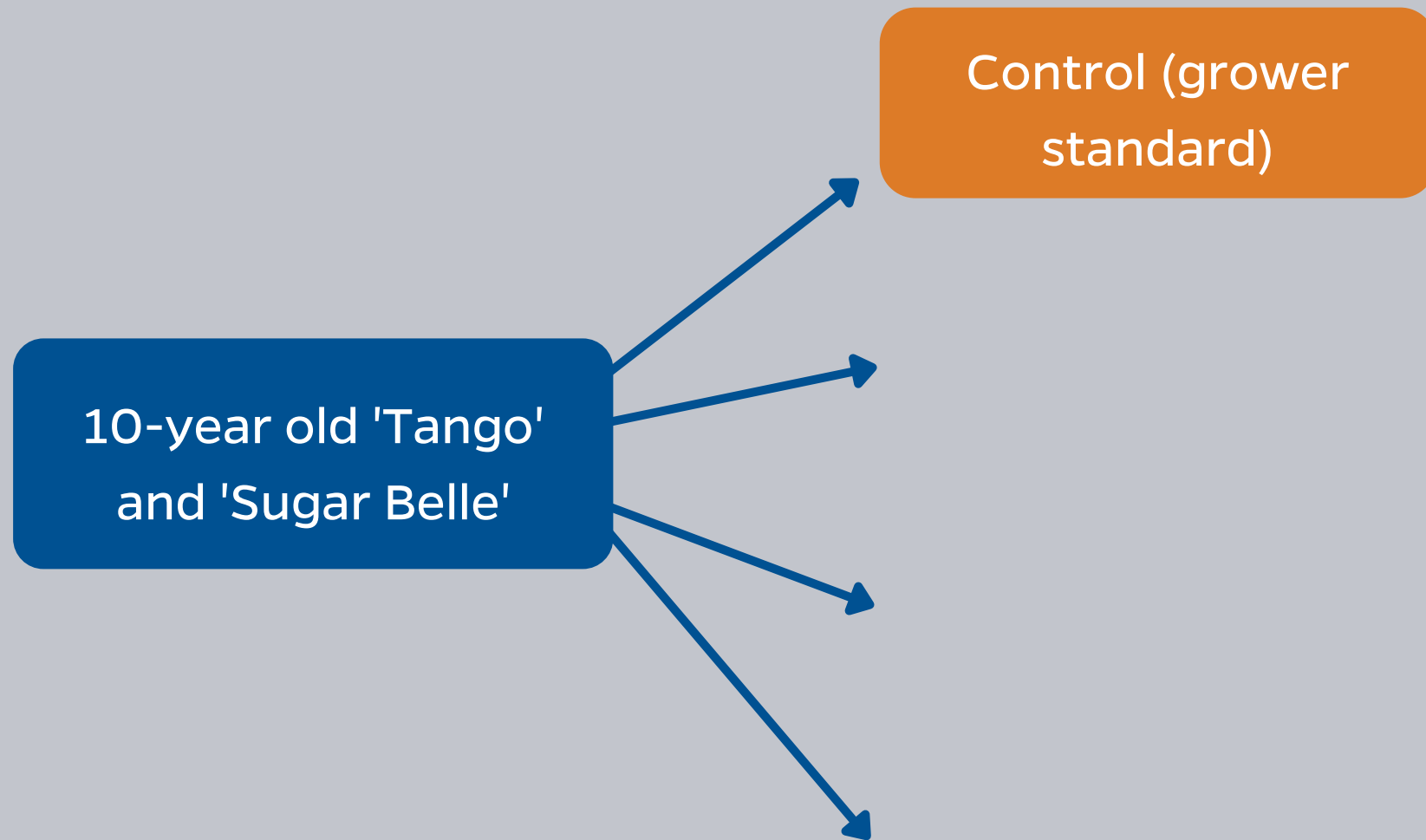
Strategies to improve quality and color of 'Tango' fruit

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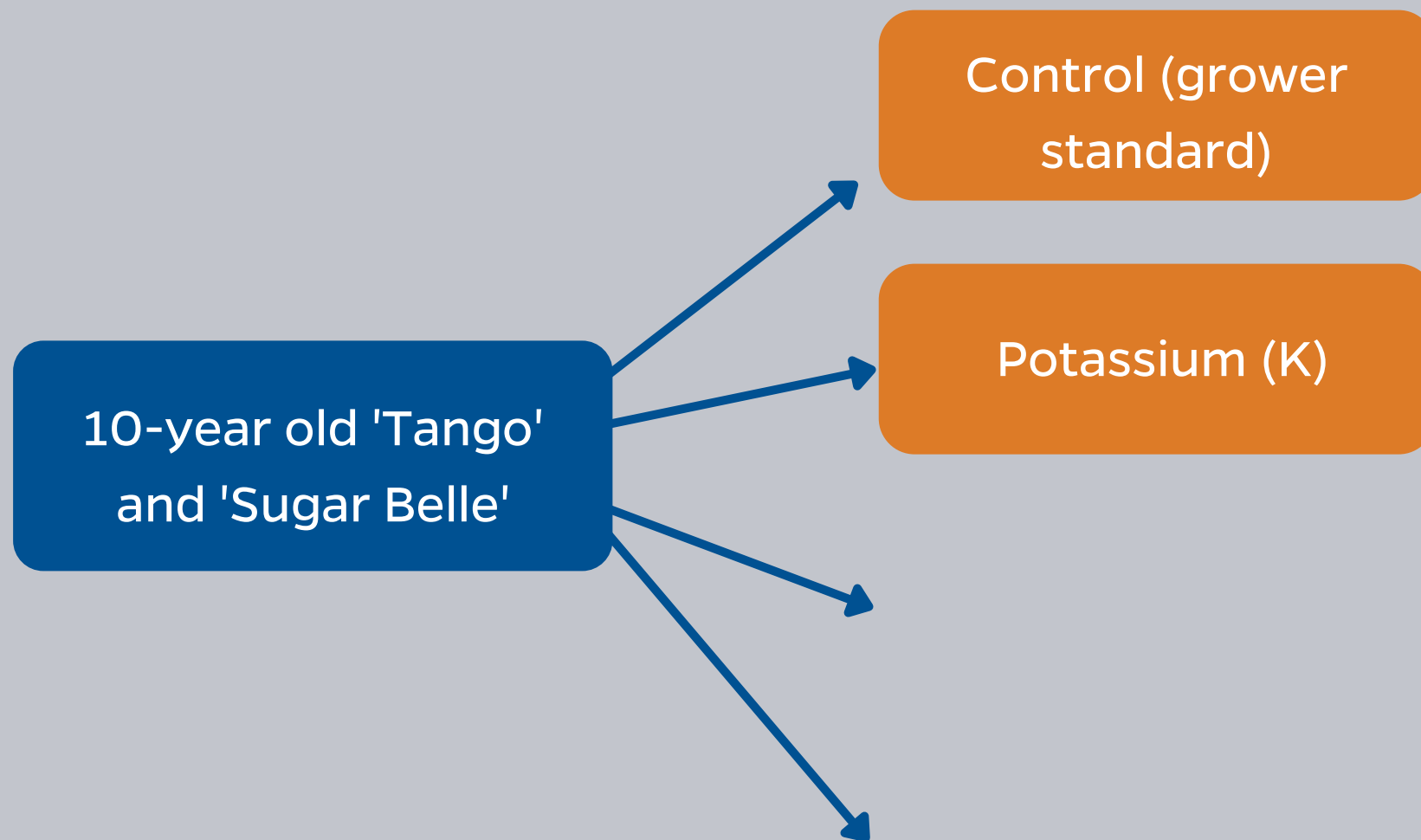


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graph LR; A[10-year old 'Tango' and 'Sugar Belle'] --> B[ ]; A --> C[ ]; A --> D[ ]; A --> E[ ]; A --> F[ ]
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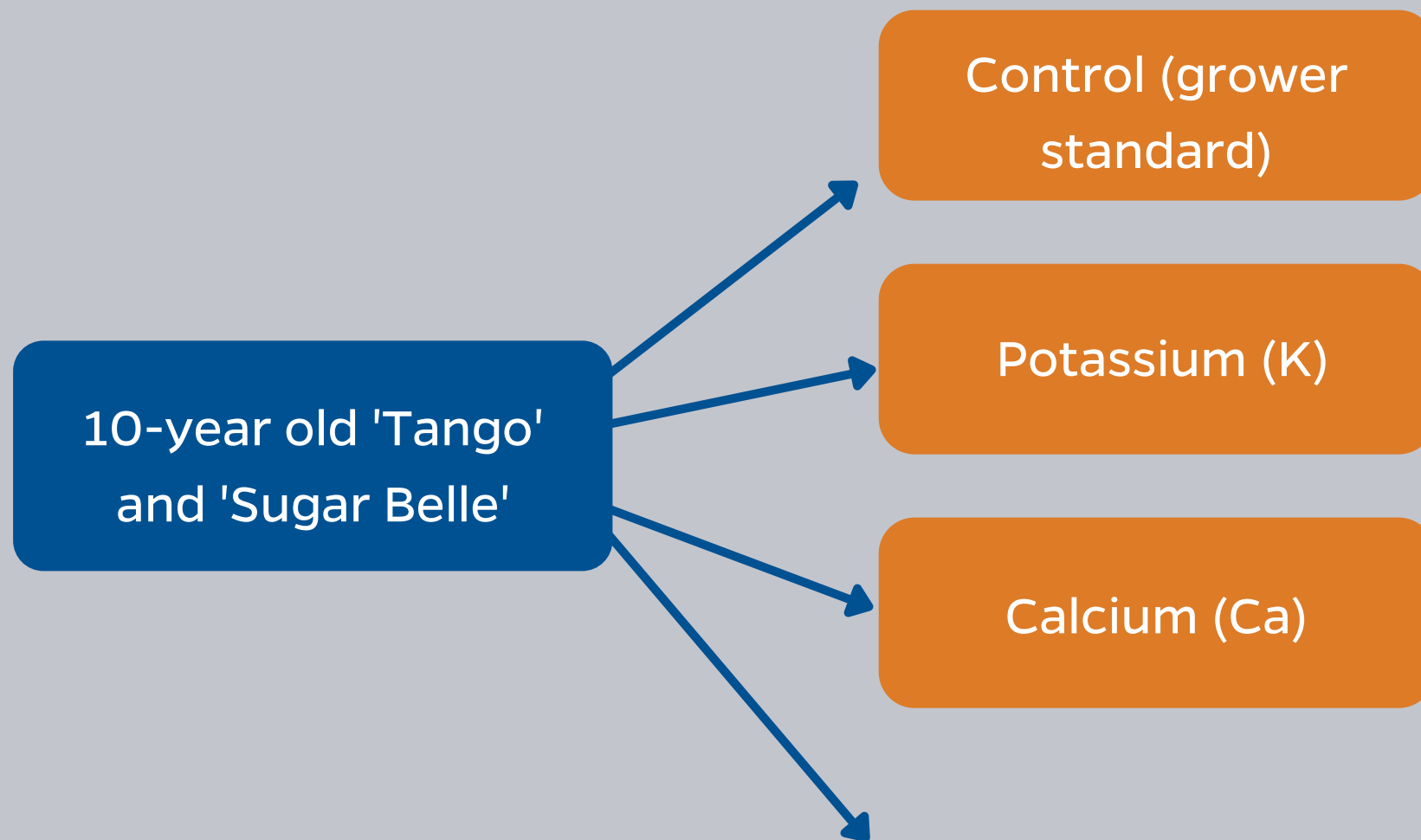
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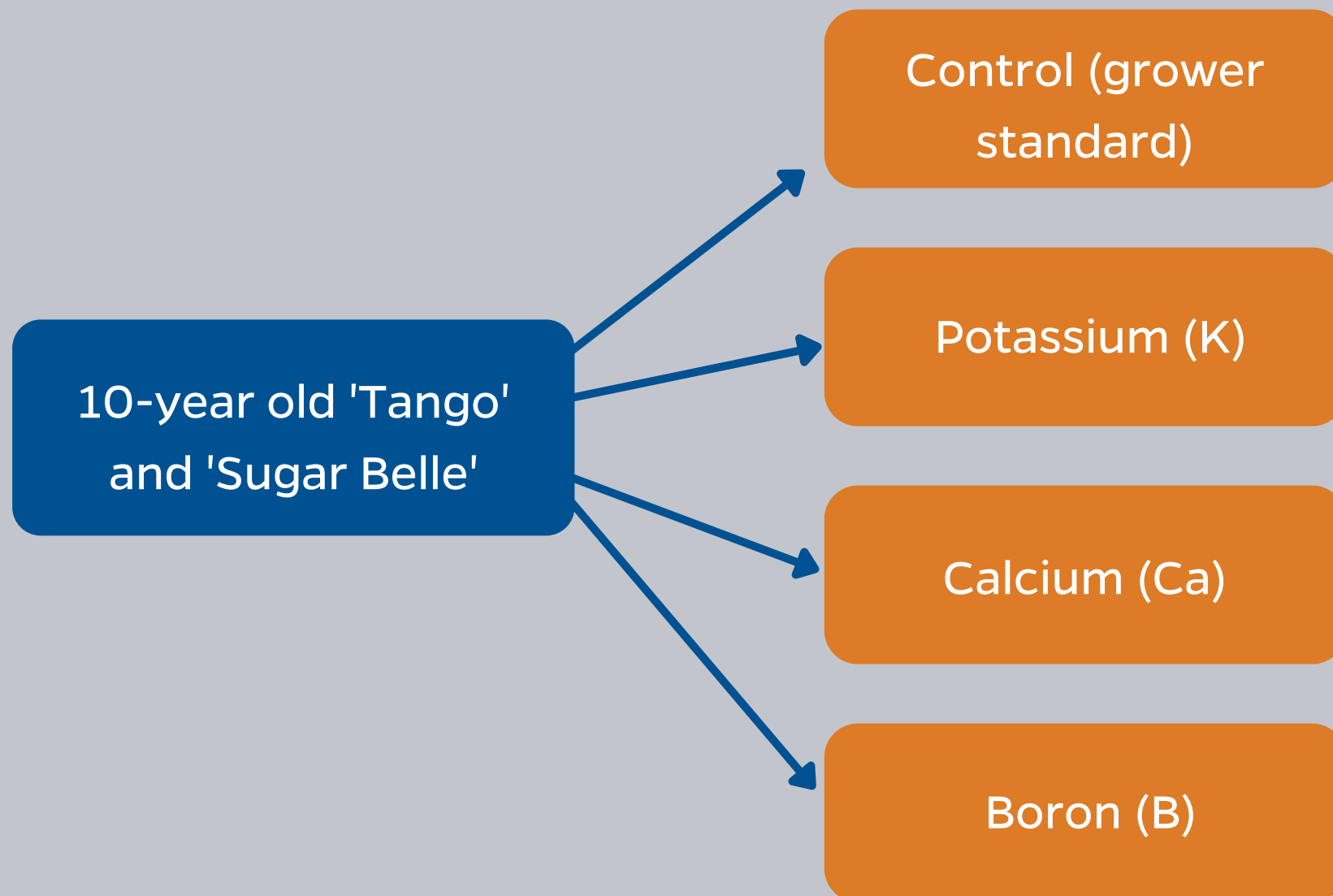
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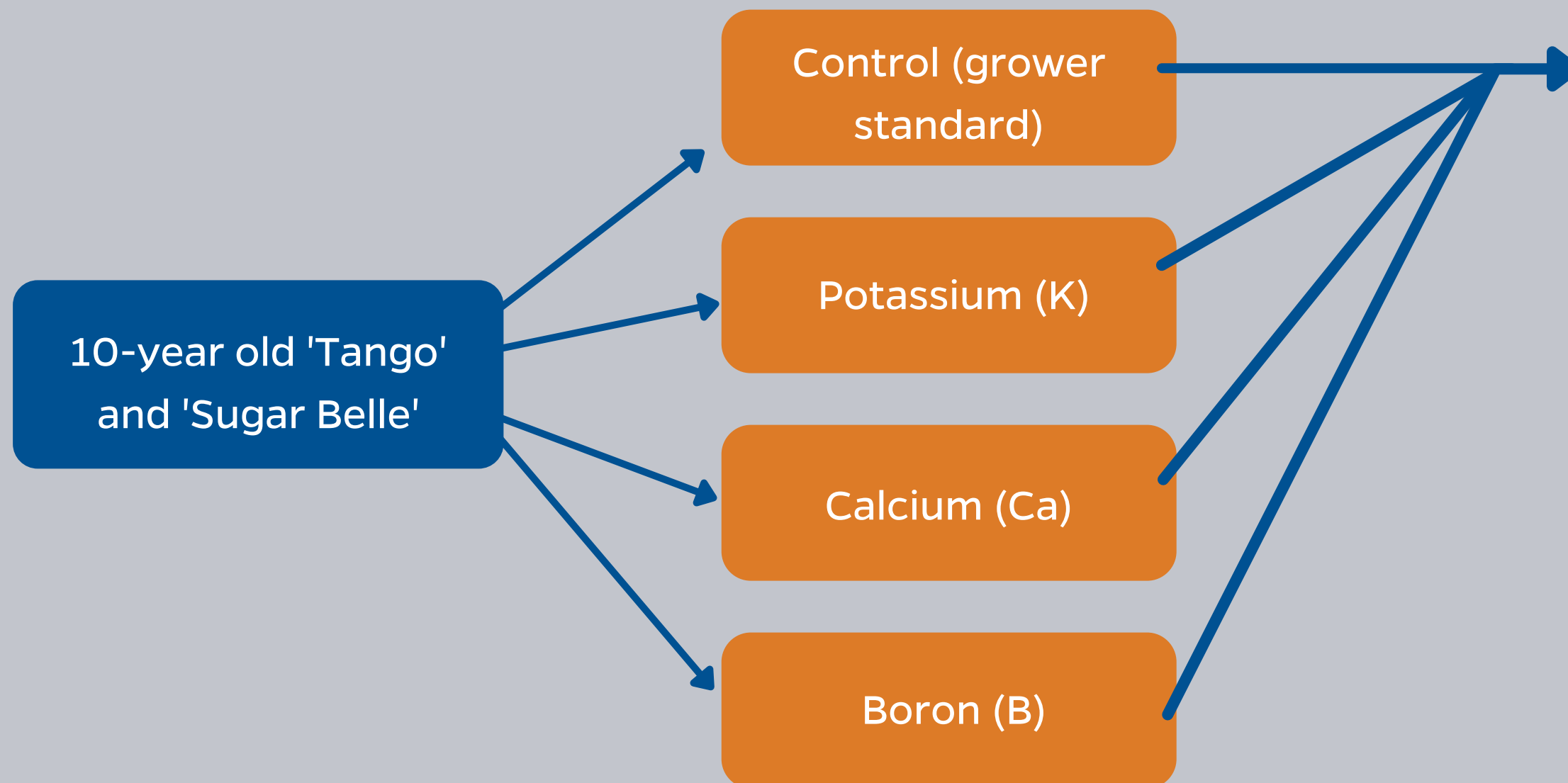
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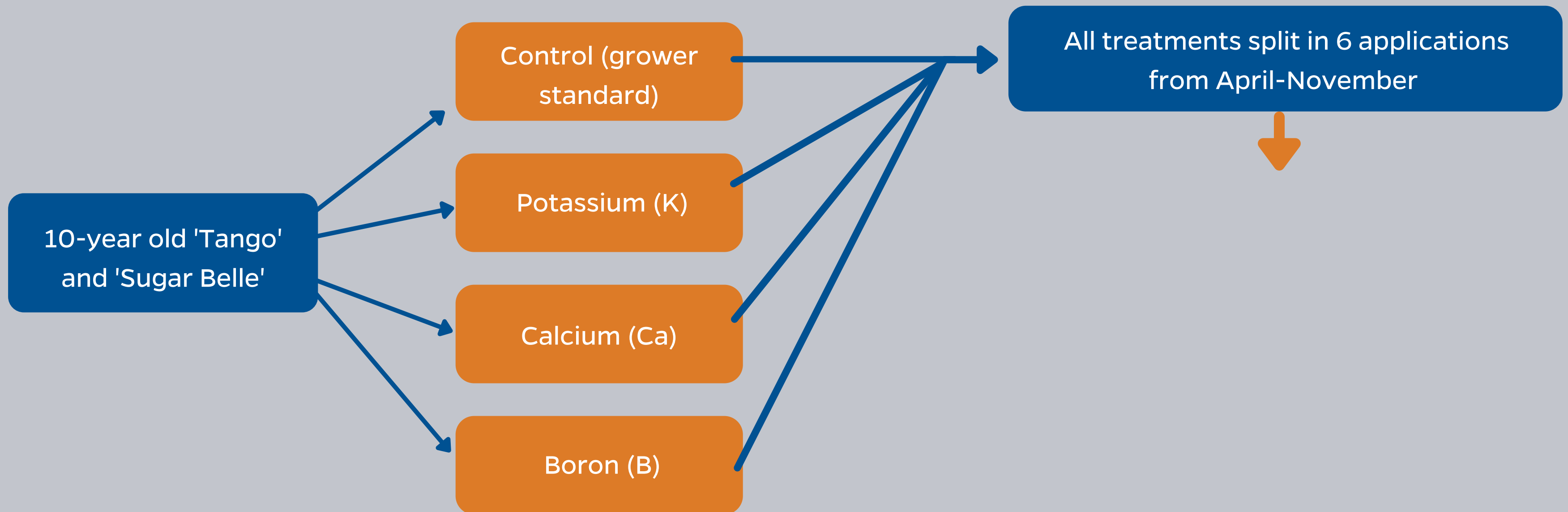
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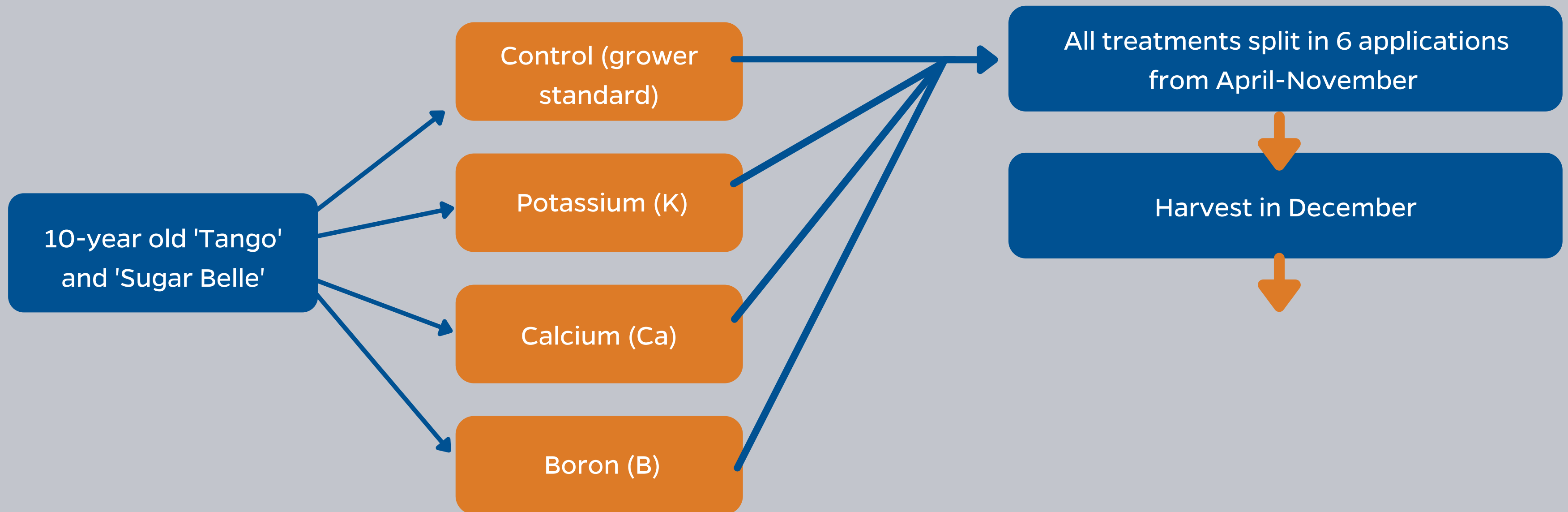
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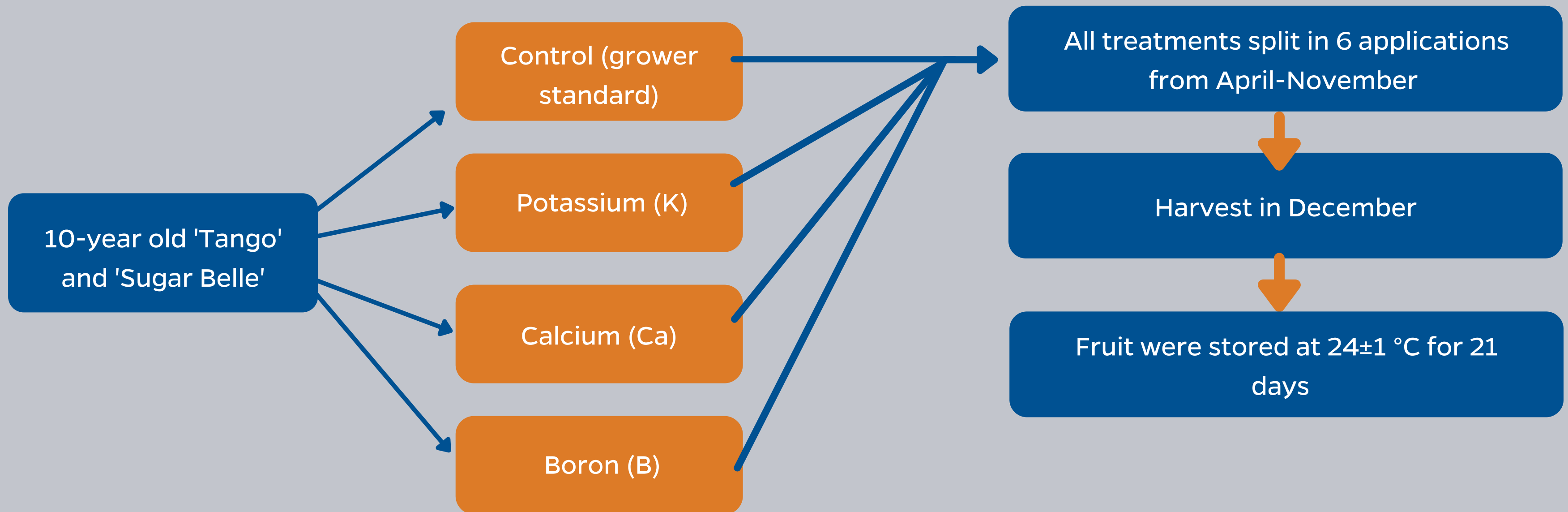
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Strategies to improve quality and color of 'Tango' fruit



Mineral nutrition for improved mandarin quality

Potassium and Boron treatment:

- Increased fruit diameter
- Increased fruit weight
- Reduced the number of lopsided fruit
- Enhanced color development

'Sugar Belle'



Control
(grower standard)



Potassium (K)



Calcium (Ca)



Boron (B)

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'Tango'



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Potassium (K)

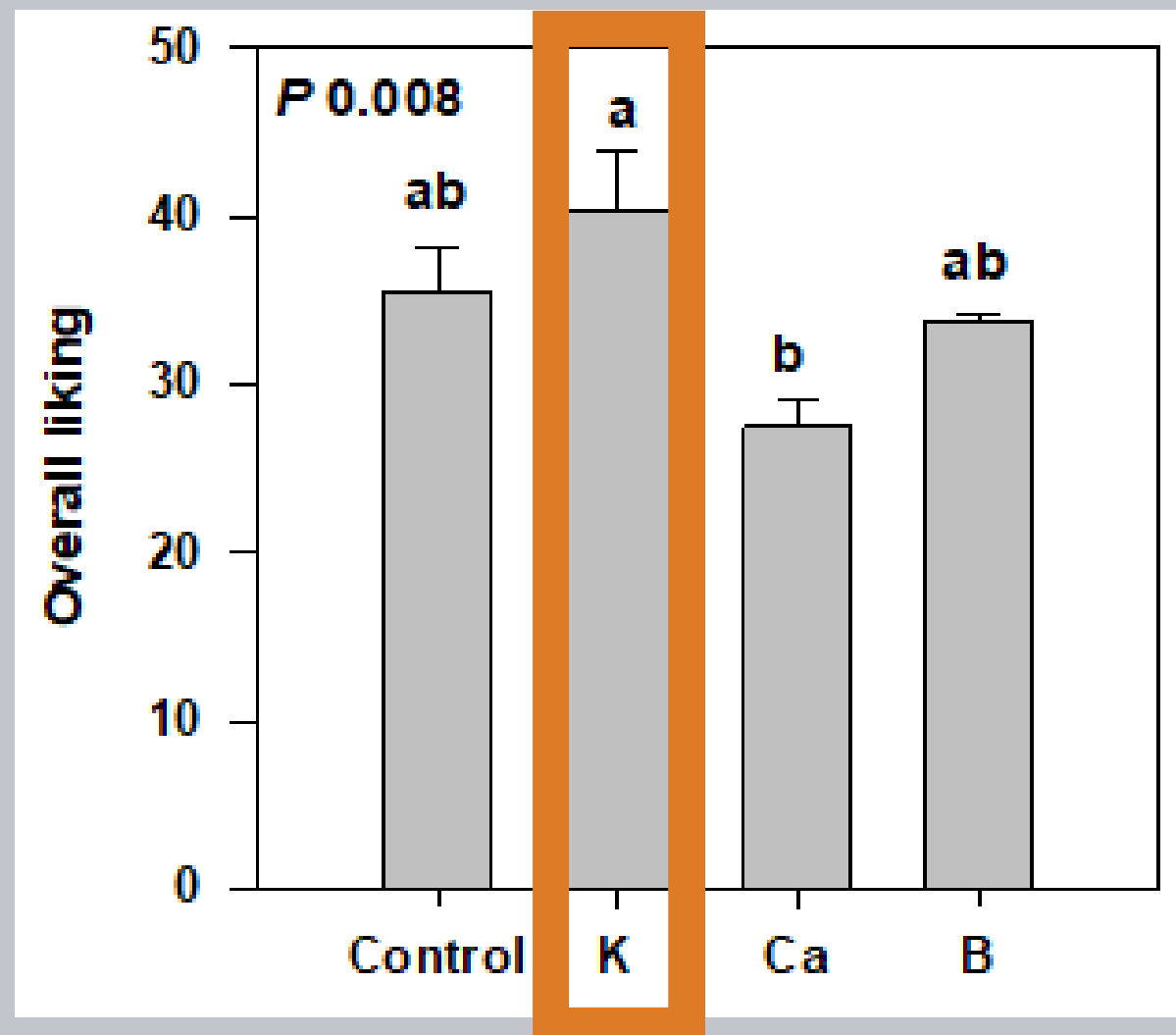


Calcium (Ca)



Boron (B)

Mineral nutrition for improved mandarin quality



- For 'Sugar Belle', potassium treatment improved fruit sensory quality attributes: sweetness, mandarin flavor intensity than Ca-treatment
- Peelability significantly improved potassium treated 'Sugar Belle' and boron treated 'Tango'

Mineral nutrition for improved mandarin quality

- Foliar-applied potassium and boron treatments improved fruit sensory quality, fruit physical at harvest and during postharvest storage
- Foliar-applied calcium showed a negative impact on fruit quality attributes for ‘Sugar Belle’ and ‘Tango’

