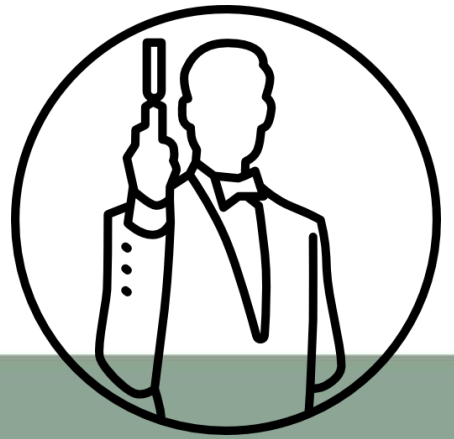
ROOTS SHOOTS & FRUITS

Mineral Nutrition

Q & A with M

‘Head of Intelligence’

Q1. Name the macronutrients?



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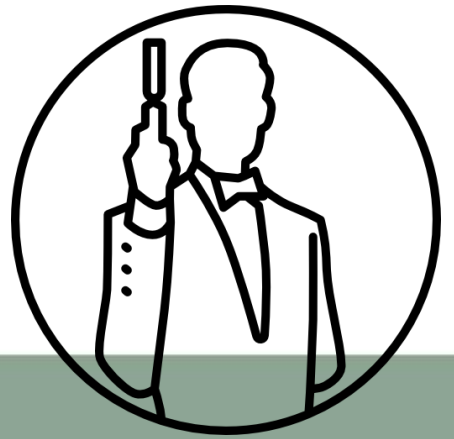
Answer.

Nitrogen

Phosphorous

Potassium



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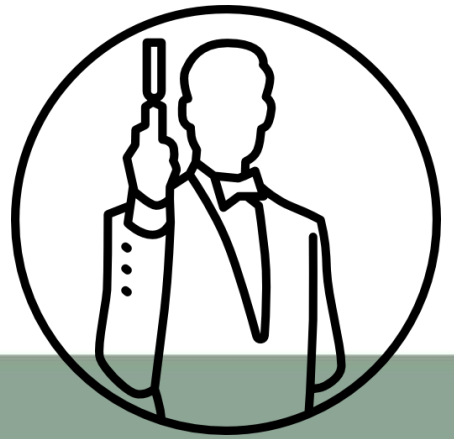
Q2. What are the secondary nutrients



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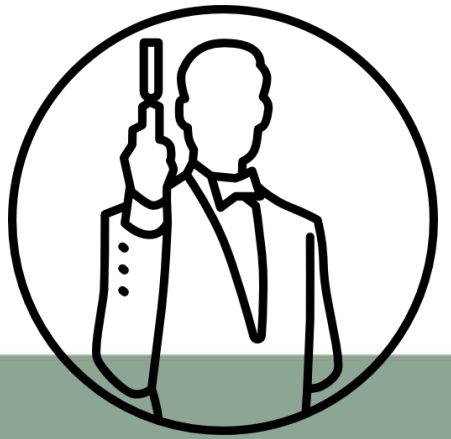
Answer.

Calcium
Magnesium
Sulphur



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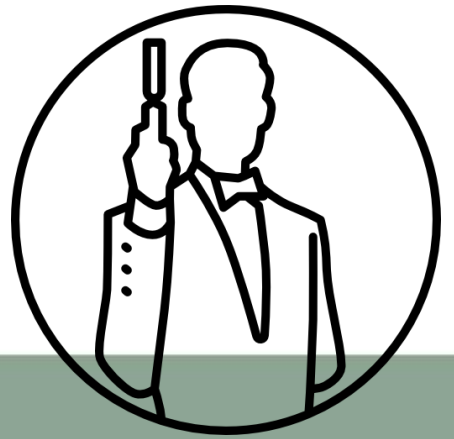
Q3. Can you prevent disease via nutrition?



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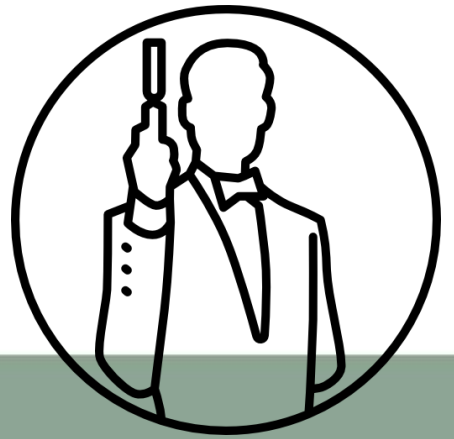
Answer.

Yes



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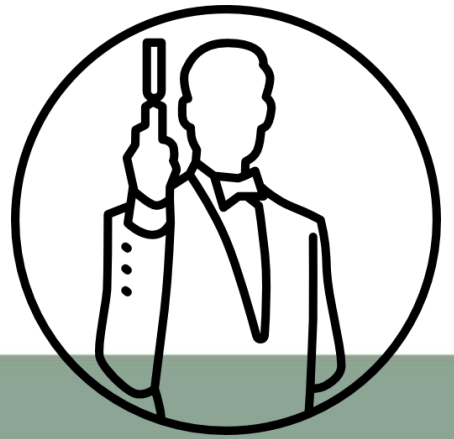
Q4. What is a yellowing of leaves and green tissue indicative of?



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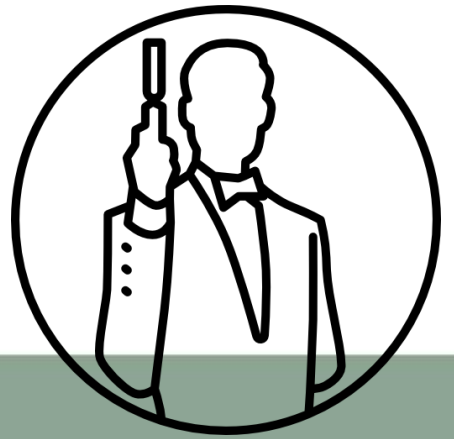
Answer.

A lack of Chlorophyll



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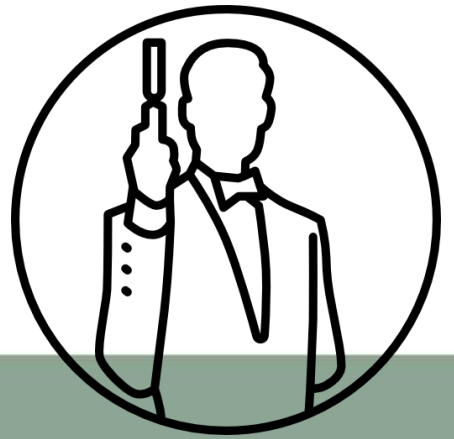
Q5. What mineral has the ability to prevent / reduce powdery mildew if applied pre issue?



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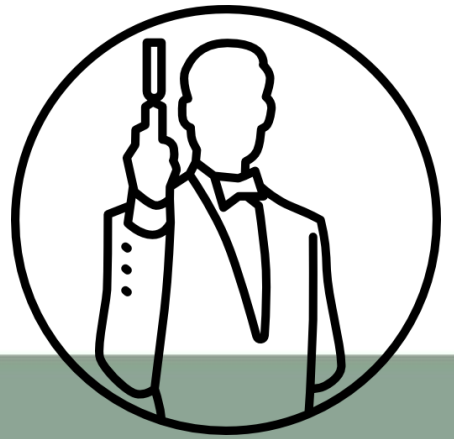
Answer.

Bioavailable Manganese



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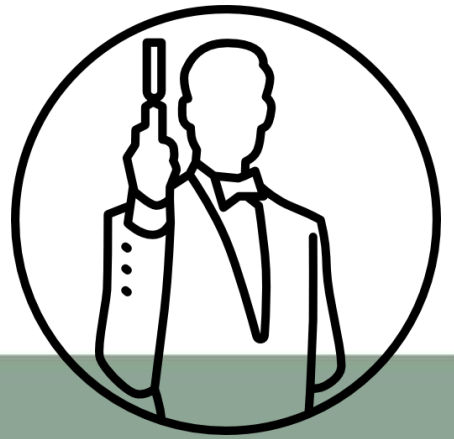
Q6. What are the three main sources of Nitrogen?



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Answer.

* Atmospheric Nitrogen via fixation of microbes

* Decomposition of plant & microbial residue containing Nitrogen

* Nitrogen fertiliser products

Q7. Can excess Nitrogen increase plant susceptibility to pest & disease?

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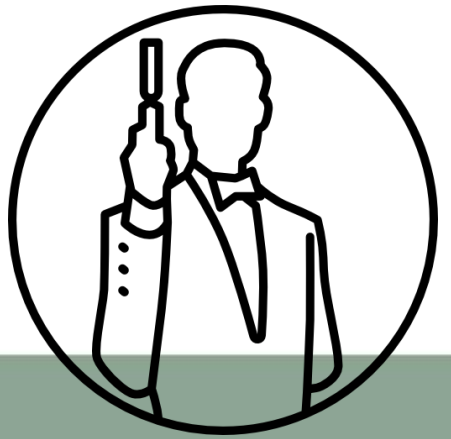
Answer.

Yes , Definitely.



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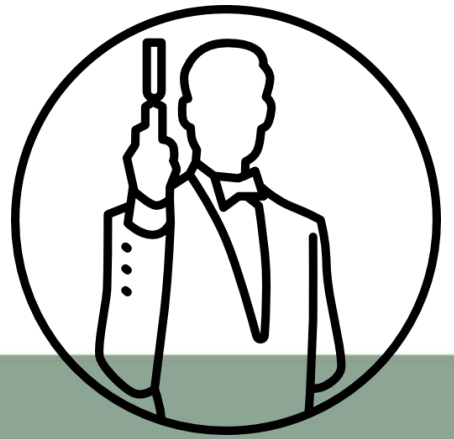
Q8. What holds mineral nutrition in the soil?



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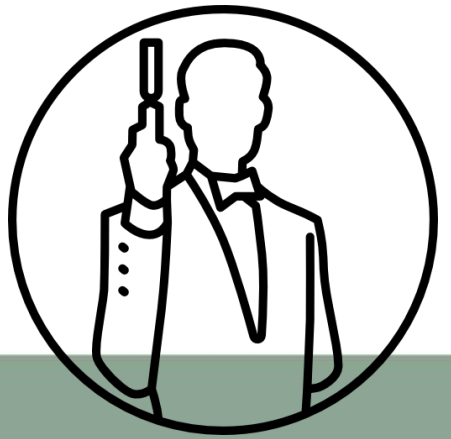
Answer.

Clay and Organic matter



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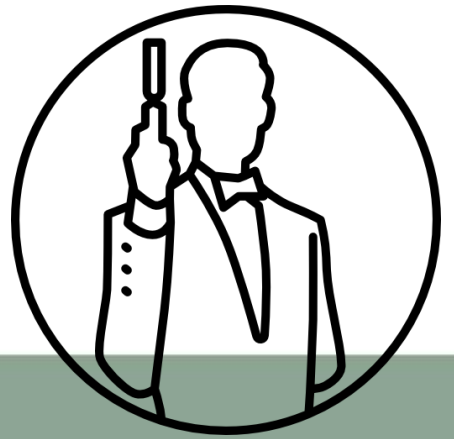
Q9. What is the symbol for Sodium



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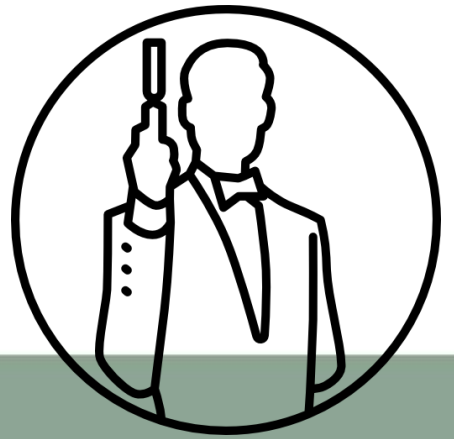
Answer.

Na



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Q10. Care should be taken with what two minerals in particular which can lead to runoff and in turn eutrophication in our water systems?

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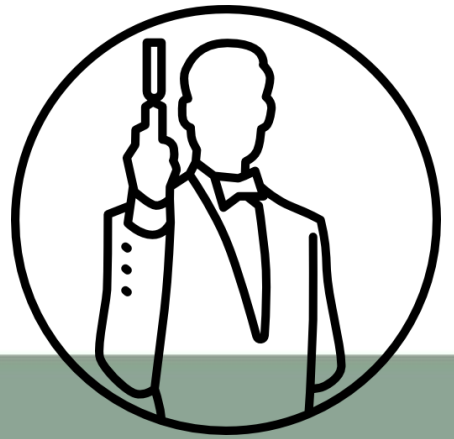
Answer.

Nitrogen and Phosphorous



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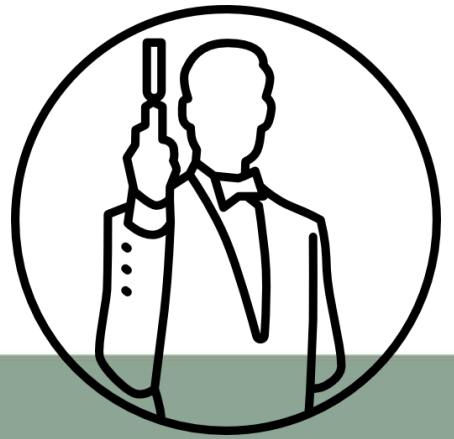
Q11. What is eutrophication of our water systems?



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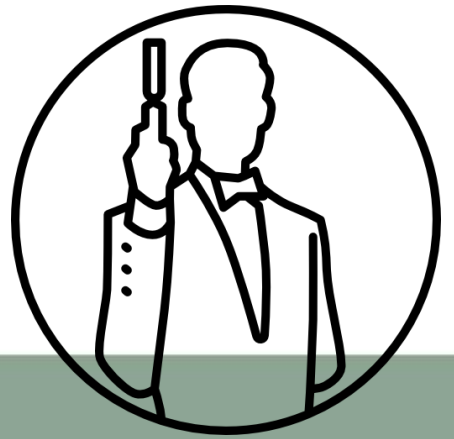
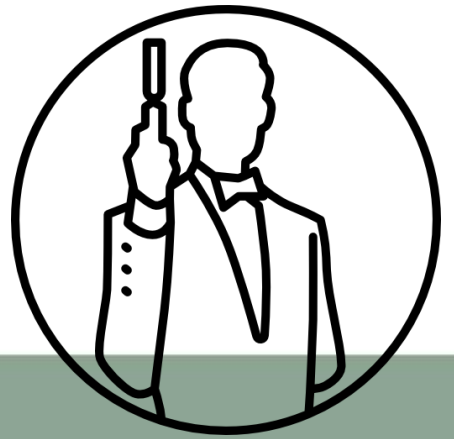
Answer.

Eutrophication occurs when excessive Nitrogen leaches into our waterways, causing algae bloom which removes oxygen from the water killing life
e.g. Rotorua Lakes



Q12. Potassium is required for water balance in vines and turgidity of plant cells. True or false?



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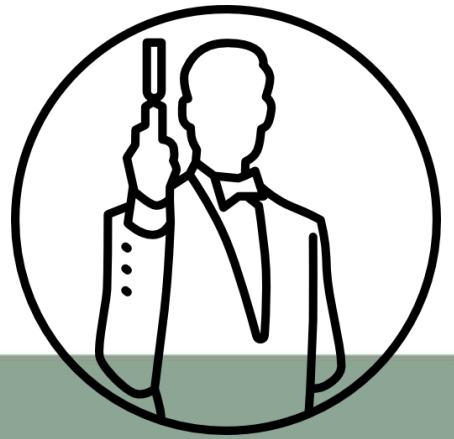
Answer.

True



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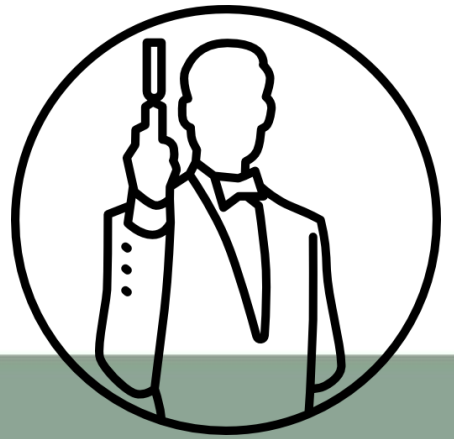
Q13. What bioavailable mineral is required to strengthen plant cells and is critical to ensure lower disease incidence and severity in grape berries?



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Answer.

Bioavailable Calcium.

Trials have shown 48% reduction in *Botrytis* by application of Biomin calcium alone

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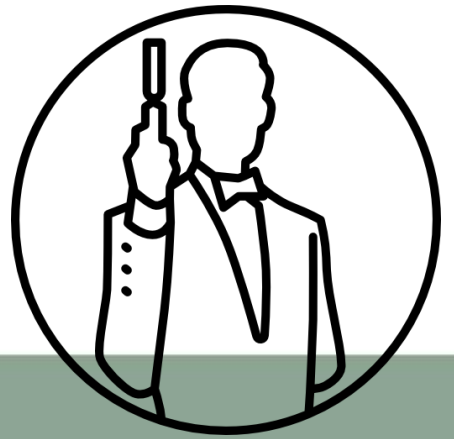
Q14. Magnesium is required for chlorophyll production to ensure good photosynthesis in plants. True or false?



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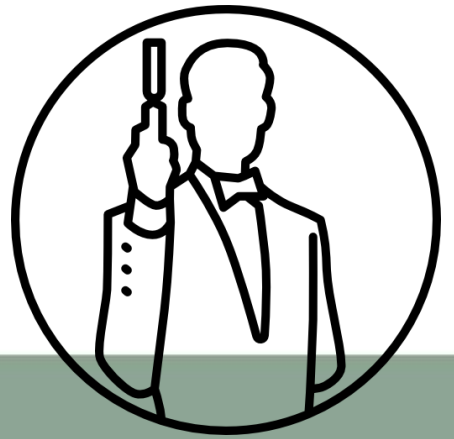
Answer.

True



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Q15. Calcium plays a role in sugar accumulation, fruit colour and, what other major function ?

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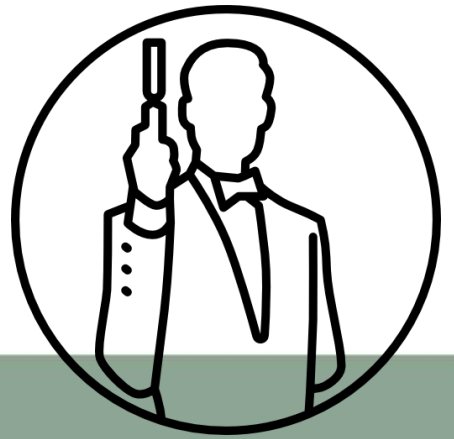
Answer.

Phytohormone signalling

EG: Auxin, cytokinin, abscisic acid ethylene and cytokinin



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Q16. Does beneficial biology have a positive impact against disease ?

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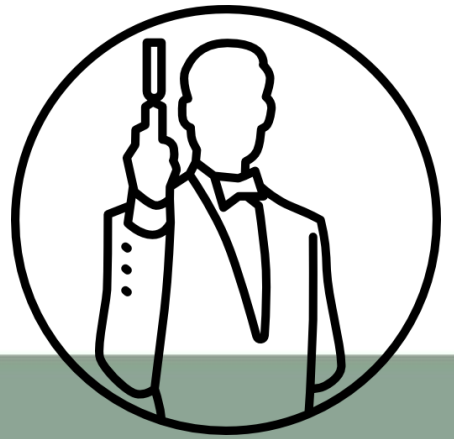
Answer.

Induced systemic resistance, is an immunity boost that protects the plant from a broad range of pathogens, not to mention predator v prey



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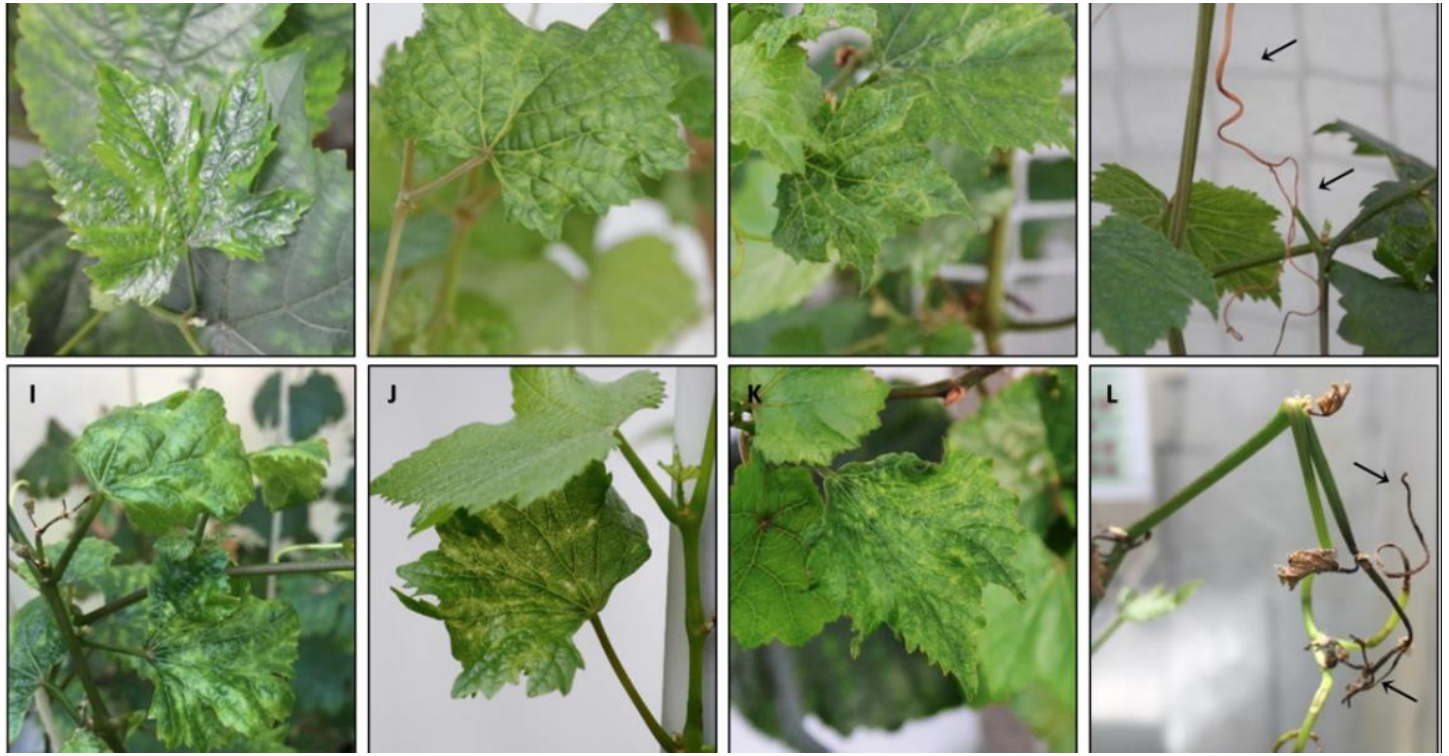
Q17. Can you identify the mineral deficiency?



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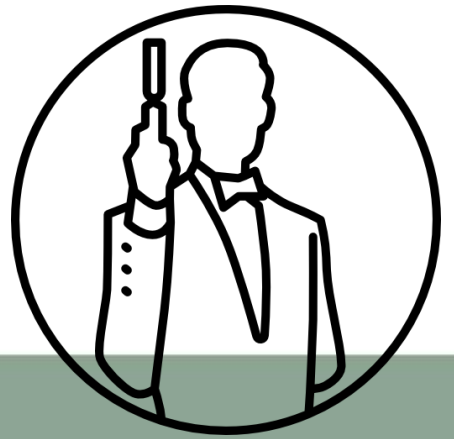
Answer.

Boron deficiency



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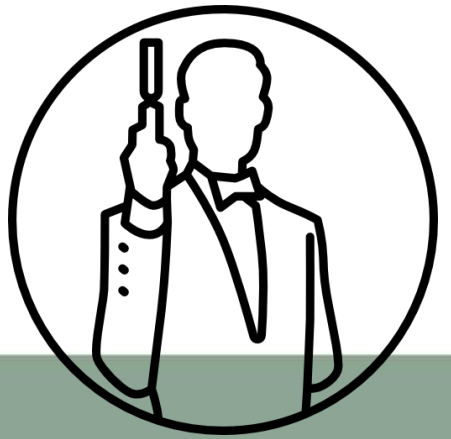
Q18. Can you identify the issue?



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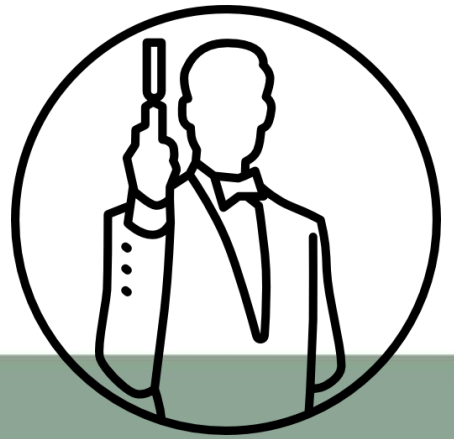
Answer.

Bunch stem necrosis



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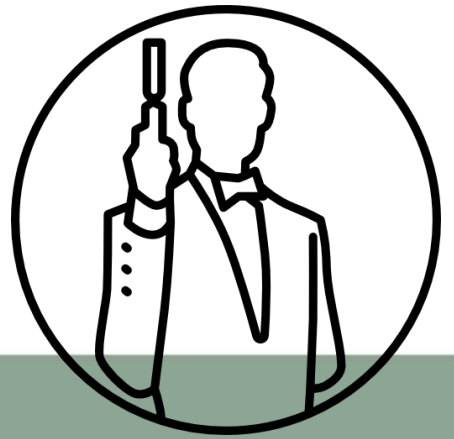
Q19. Preferably, tissue tests should be take when ? Why ?



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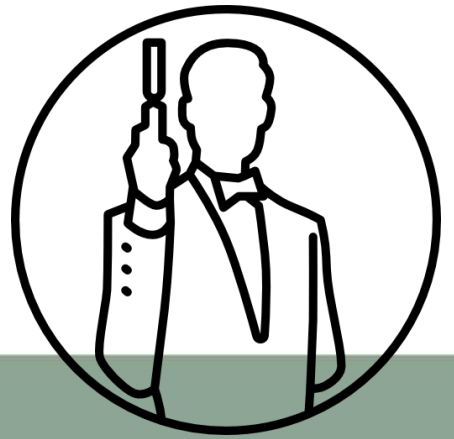
Answer.

Annually post harvest or pre-flower.

(This is a critical time to enable change if bioavailable minerals are utilised)

Q20. Is Iron Oxide Soluble ?



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Answer.

No

Iron Oxide is rust, it is not soluble

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Q21. Is Magnesium Oxide Soluble ?

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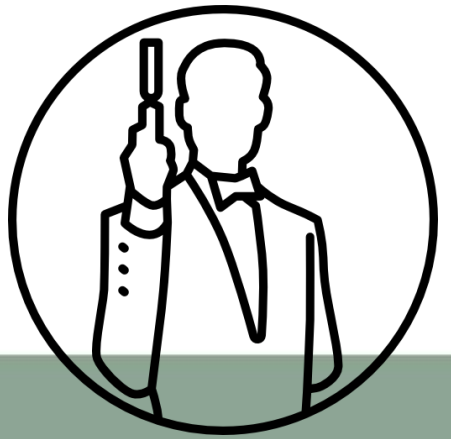
Answer.

No

Yet it is used in some foliar fertiliser products



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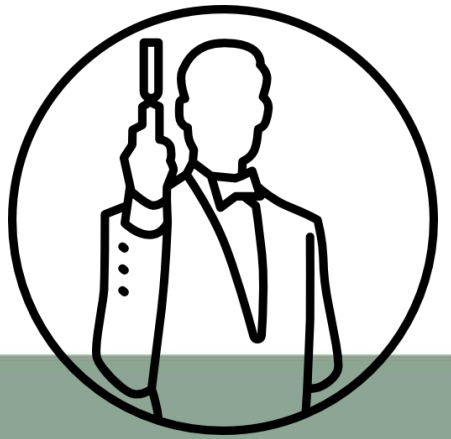
Q22. What charge do Biomin have ?



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Answer.

Biomin have no charge , they are free to enter and move systemically within a plant

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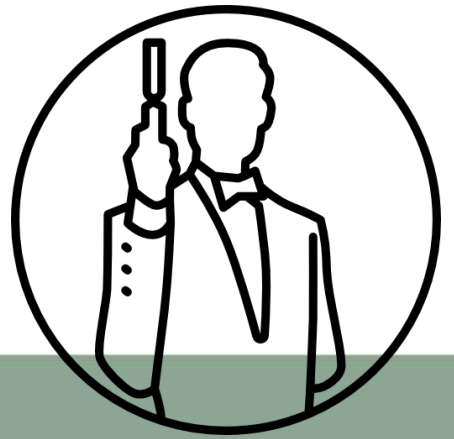
Q23. What does systemic mean



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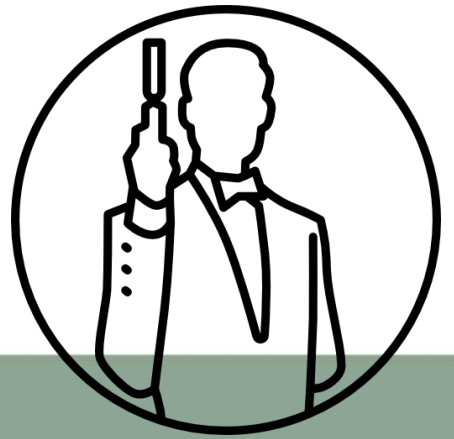
Answer.

Soluble in water so it can be absorbed by a plant and moved around in its tissues principally in the plant's vascular system, which includes the phloem and xylem.



Q24. Why are some Viticulturist hesitant to apply Potassium foliar sprays from veraison to harvest ?

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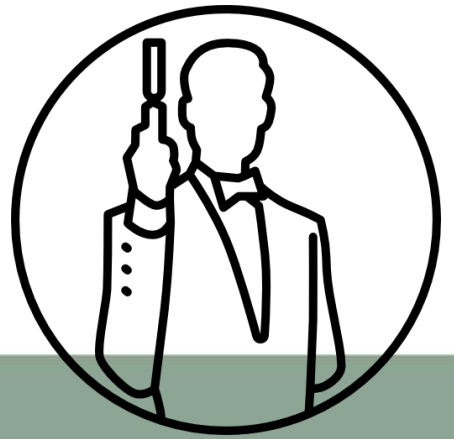
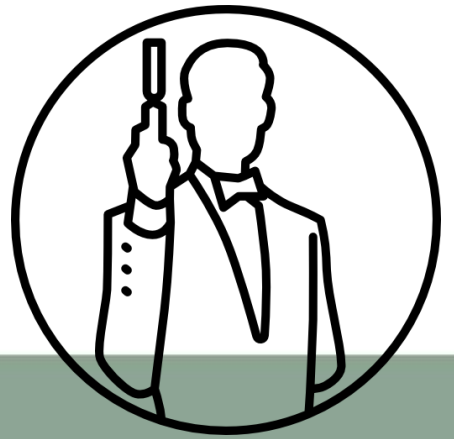
Answer.

Because some winemakers believe it will upset the wine pH and polyphenols



Q25.Does foliar Potassium do this ?



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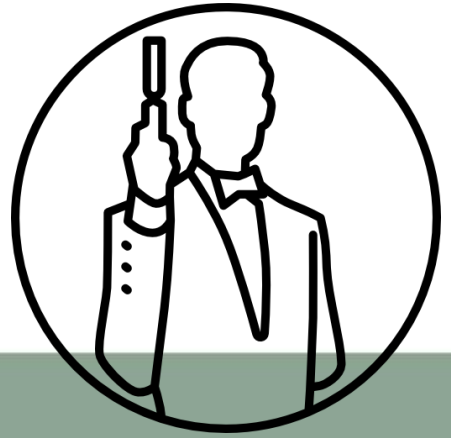
Answer.

Historically there were limited formulations of potassium

* Potassium nitrate
* Potassium chloride
* Potassium sulphate

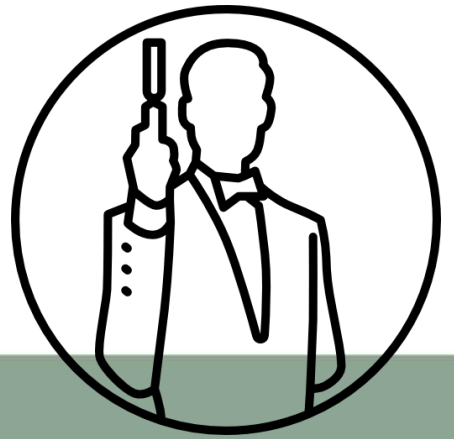
These do affect wine but new formulations such as Potassium phosphate do not.

Keep up with technical advancements !



Q26. What mineral /s does Phosphorus bond to at low pH?

And at High pH?



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Answer.

* Aluminium & Iron at low pH
* Calcium at High pH

  Making P unavailable to plants !

Q27. Who knows where CO_2 from the environment is stored in the soil ?

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Answer.

CO_2 is stored for long periods of time in a Glycoprotein called Glomalin which is secreted by Mycorrhizal fungi

Thank you and remember to call 007 for help :)