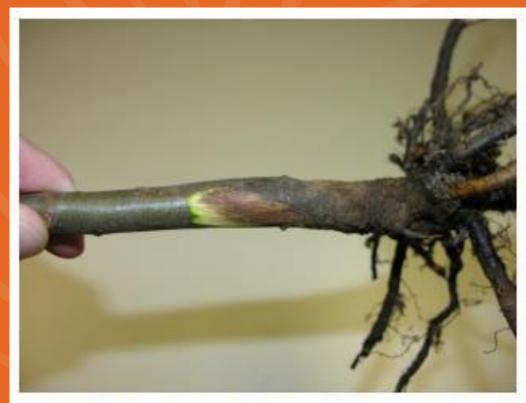
Phytophthora



Chestnut seedling infected with P. cinnamomi displays dark staining on roots and shoot.



Classic symptoms of P. cinnamomi infection include chlorotic, wilting leaves and canopy dieback.



Chemical pesticides

- Metalaxyl
 - Used to eradicate Phytophthora



- Phosphonates
 - Used to protect plant tissues from infection or to inhibit further growth of the organism inside plant tissues.



Application of Metalaxyl

CONDITIONS OF USE

Products to be used:

RIDOMIL GOLD 480 SL SYSTEMIC FUNGICIDE (APVMA No. 64812) PLUS OTHER REGISTERED PRODUCTS Containing: 480 g/L METALAXYL-M as the only active constituent.

Directions for Use:

Crop	Pest / Disease	Rate
Chestnut	Root and collar rot	5.2 mL/m^2
	(Phytophthora spp.)	

Critical Use Comments:

- Apply at the beginning of summer as a soil drench by boom sprayer or equivalent to a radiu 1 m around each tree trunk (approximately 4 m²).
- Apply in sufficient water to provide uniform coverage of the soil.
- DO NOT apply using spraying equipment carried on the back of the user.
- DO NOT apply more than 4.7 L of product per ha per application.
- DO NOT apply more than 2 applications in the same 12 month period.
- DO NOT apply less than 3 months after the initial treatment.
- The area of soil to be treated should be free of weeds and heavy mulch.



Application of Phosphorous acid

Permit No: PER15259

Crop Type	Plant Disease	Product & Application Rate
CHESTNUT TREES	Suppression of Phytophthora Trunk and Root Canker (Phytophthora cinnamomi)	Foliar: Apply at a maximum rate of 500 mL product per 100 L water. Stem Injection: Dilute 1 to 2 with water; then inject 20 mL per metre of canopy. 600 g/L product: Foliar: Apply at a maximum rate of 333 mL product per 100 L water. Stem Injection: Dilute 1 to 3 with water; then inject 20 mL per metre of canopy. 620 & 625 g/L product: Foliar: Apply at a maximum rate of 320 mL product per 100 L water. Stem Injection: Dilute 1 to 3 with water; then inject 20 mL per metre of canopy.

Application rates – Phosphorous acid

Product Formulation	Foliar Application	Trunk application
400 g/L	500 mL per 100L	1 mL + 2 mL water
600 g/L	333 mL per 100L	1 mL + 3 mL water
620 g/L	320 mL per 100L	1 mL + 3 mL water

- Apply to trees with good leaf canopy
- Spring and Autumn.
- Spray volume of 2,000 3,000 L/ha for mature trees

Trunk spray of Phosphorous acid

- Rate of 200 g ai/L (20% phosphorus acid concentration)
- Add 2% bark penetrant to solution e.g. Pulse, Devour 1020

{Chestnut grower's report is 15 mL of PENETRANT in 3 L mixture}

- Apply from soil level to about 50 cm height
- Apply to the point of slight run-off, around the trunk





Take home messages

- Grow best in low pH (acidic) and light-sandy soils
- Chestnut trees require well drained soils and a pH of 4.5-6.5.
- Chestnut tree roots do not like heavy/clay soils. The more clay in the soil the less likely the chestnut tree will survive year after year.
- Routine and proper nutrition is important for tree health, vigor and optimal yield
- High soil organic matter is a factor commonly implicated in *Phytophthora* suppression