

Materials List for:

Procedures of Laboratory Fumigation for Pest Control with Nitric Oxide Gas

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Materials

Name	Company	Catalog Number	Comments
Nitric oxide gas	Praxair	UN1660	99.5% purity
Nitrogen gas	Praxair	UN1066	Industry grade
Fumigation chamber	(custom made)		Size: 30"x30"x30"; made of stainless steel with rubber gasket along the rim. The chamber is sealed by clampdown its lid to the vaseline greased gasket. The chamber has multiple ports for flushing the chamber and for taking air samples.
Nitric Oxide Analyzer	GE Scientific	NOA 280i analyzer	Measure NO plus NO ₂ , Nitrate and nitrite
Model 405nm NO ₂ /NO/Nox monitor	2B Technologies Inc		Ranges: NO (0-2ppm), NO ₂ +NO (0-10ppm)
Kane 900+ gas monitor	Kane International		With NO, NO ₂ , CO, O ₂ sensors
Flowmeter and controllers	Omega Engineering		Flow ranges: 0-1, 0-5, 0-20 LPM
Tubing, connectors, stopcocks	Cole-Parmer		Tubing: nylon and teflon, sizes: 1/8" and 5/32" (4mm); They fit to connectors and stockcocks
Oxygen analyzer	Illinois Instruments	Model 810	Ziconia sensor, sensitivity: 0.1ppm, range: 0-100%
NO ₂ personal alarm	SENSIT Technologies	Sensit P100	Should be used in conducting large scale NO fumigations outside a fume hood
Flowmeter and controllers	Omega Engineering		Flow ranges: 0-1, 0-5, 0-20 LPM
Gastight syringes	SGE Analytical Science		10 ml, 100 ml
Gastight syringes	Hamilton Company		10uL
Tubing, connectors, stopcocks	Cole-Parmer		Tubing: nylon and teflon, sizes: 1/8" and 5/32" (4mm); They fit to connectors and stockcocks
Sodium Iodide	Fisher Chemical	S324-100	
Acetic acid, Glacial	Fisher Chemical	UN2789	≥99.7% purity
Hydrochloric acid	Cole-Parmer	SA48-500	1.0 Normal
Vanadium(III) Chloride	Acros Organics	197000250	97% purity
Sodium Hydroxide	Fisher Chemical	BPSS266-1	1 M
SAHARA S3 Stainless-steel heated bath circulator	ThermoFisher Scientific		
SC 100 Digital Immersion Circulator	ThermoFisher Scientific		
Oxygen	Praxair	*001043	99.5-100% purity
Hot Jaw	Sorbent Systems		Mylar bag heat sealer

Mylar bags	Sorbent Systems		
Flipmate filtration assemblies	Cole-Parmer	EW-35202-29	
15 ml polypropylene tube	Falcon		
Filter Paper P5	Fisher Scientific		
Blender	Waring	Blender 7010G	Model WF2211212
Dilution device	Made in our lab		Combine the ends of four equal length Teflon microtubing into one connector and have a connector for each end of the four microtubing.