

Comparative Advantages and Disadvantages of Steam and Chemical Soil Treatments in Common Use

Characteristics	Steam, 180°-212°F for 30 min.	Methyl bromide 4 lbs. per 100 cu. ft.	Chloropicrin 5 cc per cu. ft.
Time required for treatment	About 1 hr.	24-48 hrs.	2-3 days
Time between treatment and planting	About 1-2 hrs. to cool	24-48 hrs.	7-10 days
Kills all pathogens, weeds and insects?	Yes, best treatment; a few weeds survive	Most, but not Verticillium; a few weeds survive	Yes; a few weeds survive
When can penetration of material be determined, as a measure of effectiveness?	At once, by measuring soil temperature	Later, by noting reduction of disease or pathogen	Later, by noting reduction of disease or pathogen
Toxic after-effect to crops?	None with U.C. type soil mixes	Yes, for carnations and some others	None when properly aerated
Use near living plants?	Yes	Within 3 ft. if adequately ventilated	Only with excellent ventilation
Destroys organisms in unrooted crop refuse?	Yes	Yes	Poorly
Can it be used anywhere?	Only if portable boiler is used	Yes	Yes
Is its use limited by environment?	Time and cost increase with cold or wet soil, but can be so used	Not recommended below 60°F	Dosage increase if soil below 65°F or wet
Ease of application	Easy	Easy	Obnoxious and time consuming
Dangerous to workmen?	No	Yes	Yes
Is large capital outlay required?	Yes, if boiler is unavailable	No	No
Cost per cu. ft. of soil, exclusive of labor	Less than 2 cents including equipment cost	About 2.9-3.2 cents, excluding equipment cost	About 1.9-3.0 cents excluding equipment cost

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