TriCal AUSTRALIA
ABN 31 600 066 966

SOIL PRE- FUMIGATION CUSTOMER CHECKLIST

DOCUMENT NO: SQEF7-04-TRI	REVISION: 0	ISSUE DATE: 8/10/2018

CUSTOMER NAME:	**CONTACT PHONE NUMBER:**
FUMIGATION LOCATION:	
LOCATION TYPE: ☐ BROADACRE ☐ GREENHOUSE/GLASSHOUSE	
REQUESTED FUMIGATION DATE:	**REQUESTED FUMIGATION TYPE:** ☐ SOIL INJECTION ☐ INLINE INJECTION

FOR SOIL INJECTION - GREENHOUSE ONLY		
ENTRANCE HEIGHT CLEARANCE IS 165CM OR HIGHER?	☐ YES	☐ NO
INTERNAL HEIGHT CLEARANCE IS 185CM OR HIGHER?	☐ YES	☐ NO
HAVE HANGING WIRES OR IRRIGATION HOSES BEEN RAISED ABOVE SAFE CLEARANCE HEIGHT?	☐ YES	☐ NO
IS THERE SUFFICIENT SPACE TO TURN A TRACTOR AT EACH END OF THE GREENHOUSE?	☐ YES	☐ NO
For safety of our Fumigators, failure to meet these requirements will mean soil injection fumigation cannot be carried out.		

FOR SOIL INJECTION – BROADACRE/FIELD ONLY		
IS THE LOCATION OF SPRINKLERS AND IRRIGATION PIPES EASILY IDENTIFIABLE?	☐ YES	☐ NO

FOR INLINE INJECTION ONLY		
IS THERE A BACKFLOW PREVENTION DEVICE INSTALLED IN THE IRRIGATION SYSTEM TO PREVENT CHEMICAL FLOWING BACK TO THE WATER SUPPLY?	☐ YES	☐ NO
InLine injection fumigation cannot be conducted if you do not have a backflow prevention device fitted.		
HAS PLASTIC BEEN LAID FOR FUMIGANT SEALING	☐ YES	☐ NO
IF PLASTIC IS NOT BEING USED, THE DRIPPER LINES BEEN COVERED WITH AT LEAST 3CM OF SOIL	☐ YES	☐ NO

FOR ALL SOIL FUMIGATION		
HAS THE SOIL BEEN RIPPED AND ROTARY HOED?	☐ YES	☐ NO
The soil should be free of clods. Large clods could prevent effective soil sealing and reduce effectiveness of the fumigant. Plant residues should be thoroughly incorporated into the soil prior to treatment to avoid interfering with application. Undecomposed plant material may harbour pests that will not be controlled by fumigation.		
SOIL MOISTURE IS APPROXIMATELY 10%?	☐ YES	☐ NO
Soil moisture levels can affect the rate of breakdown of Telone fumigants and the passage through the soil resulting in variable results from the treatment. The soil must be moist from 5cm below the soil surface to at least 30cm deep. This can be determined by the 'feel method' (see below).		
SOIL WATERED 7-10 DAYS PRIOR TO FUMIGATION?	☐ YES	☐ NO
For assistance in weed control it is recommended that the soil is watered 7-10 days prior to fumigation to encourage the germination of any seeds in the plant zone.		

SOIL MOISTURE TEST 'FEEL METHOD'

Take a sample of soil from between 5cm and 30cm deep.

FOR COARSE SOILS (sand and loamy sand) there must be enough moisture to allow formation of a weak ball when compressed in the hand. Due to soil texture, this ball is easily broken with little disturbance.

IN LOAMY, OR MEDIUM TEXTURED SOILS (coarse sandy loam, sandy loam and fine sandy loam), a soil sample with the proper moisture content can be formed into a ball which holds together with moderate disturbance, but does not stick between the thumb and forefinger.

FINE TEXTURED SOILS (clay loam, silty clay loam, sandy clay, silty clay, sandy clay loam and clay), should be pliable and not crumbly, but should not form a ribbon when compressed between the thumb and forefinger.

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GERMINATION TEST (BEFORE REPLANTING)

SETTING UP THE GERMINATION TEST:

HALF FILL TWO GLASSES WITH FUMIGATED SOIL (LABEL THEM 'FUMIGATED'). COLLECT THESE SOIL SAMPLES FROM TWO SITES IN THE FUMIGATED AREA AND PLACE EACH SAMPLE INTO SEPARATE JARS.

Sample soil from underneath the plastic or sealed surface with a trowel (within top 10cm). Collect the samples from the lowest point of the treated area – residues may be higher there.

HALF FILL TWO GLASS JARS WITH NON-FUMIGATED SOIL IN A SIMILAR MANNER TO STEP 1 (LABEL THEM 'UNTREATED').

Collect these soil samples from as near the fumigated site as possible (e.g. from headlands), but not from between fumigated rows.

MOISTEN A COTTON WOOL SQUARE WITH WATER AND PLACE 20 LETTUCE SEEDS ON IT. PLACE THE COTTON SQUARE IN ONE OF THE JARS ON TOP OF THE SOIL SAMPLE AND RESECURE THE LID. REPEAT THE PROCEDURE FOR EACH JAR.

Store the jars out of the direct sunlight and temperature extremes (preferably keep at room temperature) for 2-3 days.

AFTER 2-3 DAYS REMOVE THE COTTON WOOL SQUARES FROM EACH JAR, COUNT THE NUMBER OF GERMINATED SEEDS AND RECORD THE NUMBER. ALSO NOTE THE CONDITION OF THE GERMINATED SEEDLINGS.

*Follow the instructions on **Assessing the Germination Test** to determine if planting can proceed. Inhibition of lettuce germination and/or burning of their root tips can indicate the presence of residues in fumigated soil.*

PROCEDURE FOR ASSESSING THE GERMINATION TEST RESULTS:

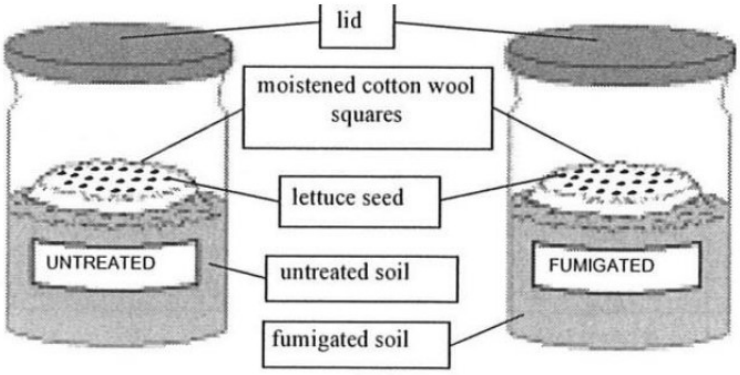
IF GERMINATION IN ANY UNTREATED JARS IS LESS THAN 15 OR THE ROOT TIPS OF SEEDLINGS SHOW SYMPTOMS OF BURNING, DELAY PLANTING AND REPEAT THE GERMINATION TEST IMMEDIATELY.

Use a new packet of lettuce seeds (variety Great Lakes) and collect the untreated soil further away from the fumigated site. If not, read on.

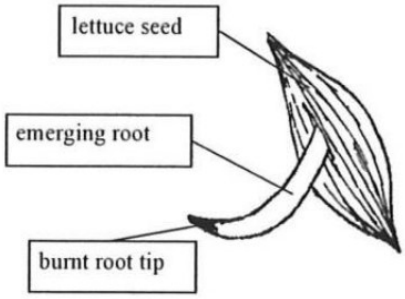
IF GERMINATION IN ANY OF THE FUMIGATED JARS IS LESS THAN 15, DELAY PLANTING AND REPEAT THE GERMINATION TEST IN ONE WEEK.

If not, read on.

IF THE GERMINATION TEST SHOWS NO EVIDENCE OF FUMIGANT RESIDUES IN YOUR SOIL, PROCEED WITH PLANTING.



Lay-out of the lettuce-test



Burnt root tip of lettuce (brown/black)