EXTERMINEX™ TECHNICAL TRAINING

Updated: 2nd March 2020

TRAINING AGENDA

Module 1 Principals Termite Behaviour

1.1 Termite Morphology and Society

1.2 Managing Termites in the Urban Setting

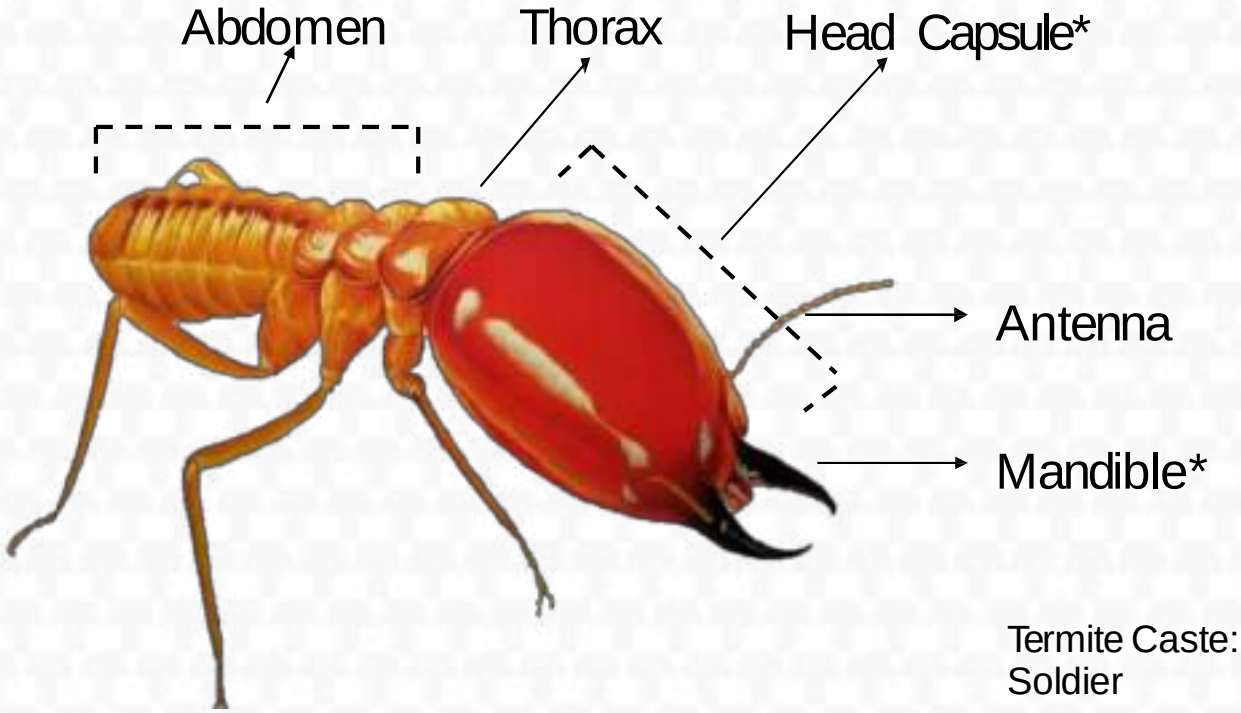
1.3 Introductory to Termites in Australia

1.4 Eliminating Termites with Exterminex™ Baiting System (Stage 1)

1.5 Establishing Termite Protection Zone (Stage 2)

TERMITE MORPHOLOGY

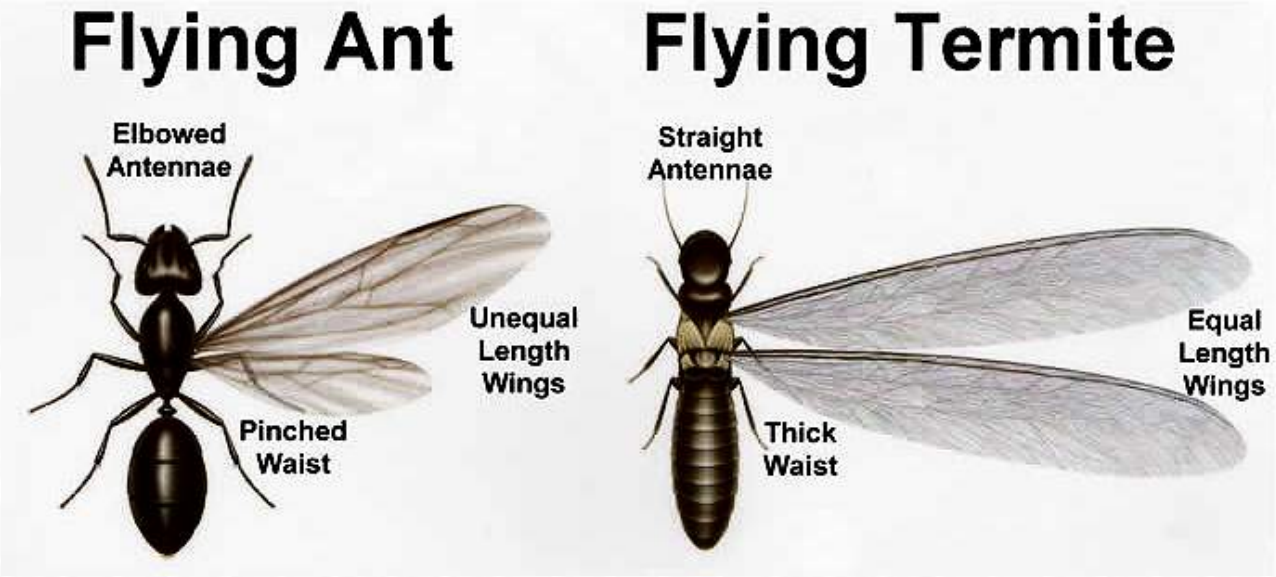
- *Morphology – description of physical form*
- *Generally, insects are characterized by the six-legged adults*
- *Anatomical features of the appendages, such as mouthparts, legs, wings and abdominal apex are important in recognising species*



Termite Caste: Soldier

"*" Mainly for species identification

BASIC TERMITES IDENTIFICATION



Fact: Even though termites are commonly called ‘white ants’ in actual fact they are not related to each other. Termites are more closely related to a cockroach.

Ants are a termites worst enemy

TERMITES

- Termites are considered an economical **important pest** as they create significant damage to timber used in service.
- **Feeding groups** – wood feeding, dry-wood feeding, wood and litter feeding, soil feeding, fungus growing, and grass feeding
- **Nesting groups** – wood nesting, hypogeal nesting (subterranean), epigeal mounds (on/close to ground), and arboreal mounds (in tree)

TERMITE COLONY

- Termites are social insects that live in a colony which are group of different individuals with definite functions or tasks.
- Termites communicate with each other through the emission of pheromones. Pheromones help termites to lay trails for other colony members, sending alarm signals to other nest mates or for colony recognition.
- Termite caste members: Nymph, Worker, Soldier, Alates, Neotenic, King and Queen

TERMITE CASTES

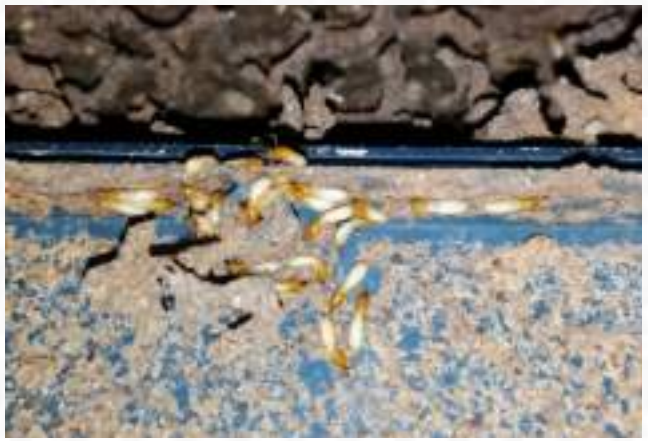
Worker

- Foraging workers travel under covered passage ways (Mudtrails, Leads) to find food and to bring back to the colony.
- The body is mostly white. The gut may often change colour depending on the food they are eating. If consuming bait the gut will appear all white
- Responsibilities: Gather food and feed the colony members, build, maintain and repair mud trails.

TERMITE CASTES

Soldier

- Characterised by the specialisation of their head capsule
- Bodies are usually darker in colour and posses large mandibles. The head capsule may appear yellow or brownish
- The mandibles that are long, slender and sabre-shaped; in some families, the mandibles of soldiers are serrated or even twisted
- Responsibilities: Defend the colony against invaders
- Termite soldiers are important for species identification



TERMITE CASTES

Nymph/ Larva

- Small and translucent
- Fed by workers and moult several times to develop to different castes.

TERMITE CASTES

Alate

- Have equal-length wings
- Nuptial flight to mate and establish new colony

Secondary reproductive/ neotenic

- Large, Creamy white body
- Replaces queen and king

Queen and King

- Queen produces eggs and controls the development of termites
- King helps in egg production

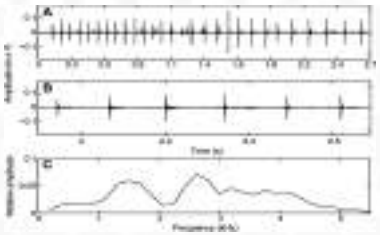
FACTS ABOUT TERMITES

TERMITES WORK 24 HOURS EVERYDAY

TERMITES DON'T SLEEP

THE TERMITE QUEEN LAYS APPR. 30,000 EGG PER DAY

TERMITES ARE BENEFICIAL TO THE ENVIRONEMENT



WHEN TERMITE SOLDIERS DETECT A THREAT, THEY SIGNAL ACOUSTICALLY TO THEIR COLONY BY TAPPING THEIR HEADS ON THE SUBSTRATE, E.g.
COPTOTERMES vibration and long distance communication

MANAGING TERMITES IN URBAN AREA

Spraying

Drilling

Dusting

Foaming

CONVENTIONAL METHODS

TERMITE MANAGEMENT

TERMITE BAITING SYSTEM

CONVENTIONAL METHODS

DOWNSIDE OF CONVENTIONAL METHOD

Structural disruption due to drilling.

Prone to **develop gaps** as certain parts of soil may be untreated susceptible for re-infestation. Termites may be locked into the structure.

May cause **water contamination** and the chemical might leach into a water source from the treated soil over time.

Skin irritation or injury such as **itching, redness, rashes, blisters, burns and discoloration**.

BAITING VS CONVENTIONAL

	Exterminex™ Bait	Liquid Termiticides
Successful colony elimination	✓	
Non-disruptive to structure	✓	
Early Indication/ Monitoring	✓	
Safe to humans, pets & the environment	✓	
Early warning system	✓	
Colony control as per AS3660	✓	
Long term buisness for PCO	✓	

TERMITES OF AUSTRALIA

- Approximately **2,600 species** of termites are found all over the world.
- 360 Species in Australia
- Main pest species of termites:

Coptotermes . A
Coptotermes . F
Heterotermes. .F
Schedorhinotermes . I
Nasutitermes . F
Nasutitermes . W
Mastotermes . D

TERMITE SPECIES

1. *Coptotermes acinaciformis*
2. *Coptotermes frenchi*
3. *Coptotermes michaelseni*
4. *Coptotermes raffrayi*
5. *Coptotermes gestroi*
6. *Coptotermes havilandi*
7. *Coptotermes curvignathus*
8. *Coptotermes vastator*
9. *Nasutitermes* spp.
11. *Microtermes* spp.
12. *Porotermes adamsoni*
13. *Reticulotermes* spp.
14. *Schedorhinotermes spp.*
15. *Heterotermes ferox*
16. *Macrotermes gilvus*
17. *Globitermes sulphurous*
18. *Microcerotermes* spp.

EXTERMINEX™ PRODUCTS FAMILY

EXTERMINEX™ PRODUCTS FAMILY

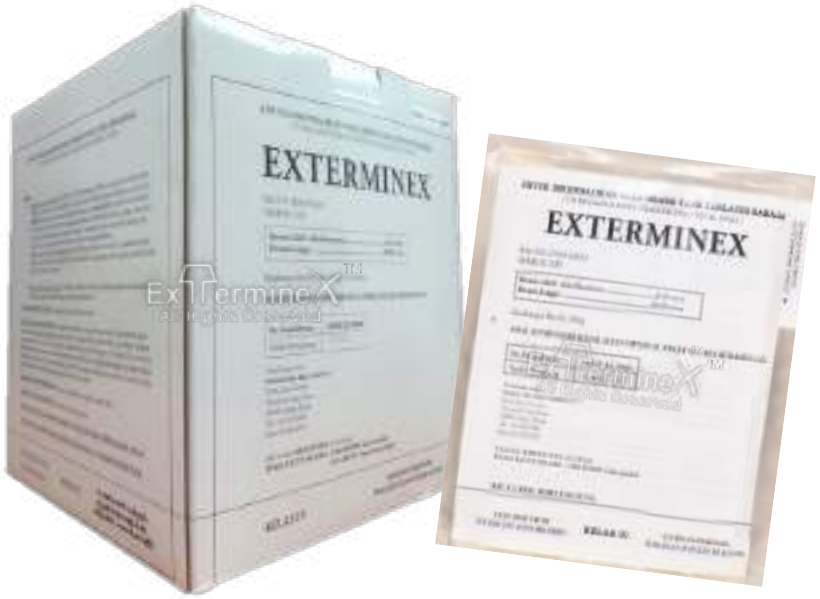
ELIMINATION

STAGE 1

MONITORING

STAGE 2

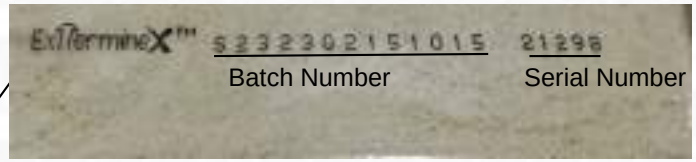
PRODUCT FAMILY



Exterminex™ Bait

Above-ground Station

PRODUCT FAMILY



Active Ingredient (A.I)	Chlorfluazuron
Concentration	0.1% w/w
Class	IV - Low toxicity insecticide

PRODUCT FAMILY – IG STATIONS

Key Opener

Interceptor wood

In-ground Station 80mm

IC Pot Cover

Interceptor wood

In-concrete Station 80mm

PRODUCT FAMILY TIMBER

Interceptor Wood
R-Pine & T-Oak

The new improved Exterminex™ IG interceptor wood offers;

- More volume of wood with more surface area and contact points
- Grooved design that mimicks termite tunnels to ease them into exploring the Exterminex™ IG interceptor wood.
- High palatability pine and mountain ash wood that was chosen and tested by FRIM
- Extended lifespan of approximately 6-9 months
- More cost effective for Pest Control Operators

PRODUCT FAMILY SAND SLEEVE

- Blocks sandy soil from entering into stations
- Acts as luring compound when CO2 is emitted, resulting in higher hit rate
- Increase the lifespan of IG Interceptor

PRODUCT INNOVATION DNA

DNA Sampling Kit
'Prove with science'

TERMITE ACTIVE INGREDIENTS

Active Ingredient (A.I)	Chlorfluazuron
Concentration	0.1% w/w
Class	IV - Low toxicity insecticide

MODE OF ACTION

Exterminex™ Bait containing chlorfluazuron consume by termite will enter their digestive system

↓

Chlorfluazuron prevent termite worker from producing new set of skin during moulting

↓

Termite worker and nymph will die first

↓

Food shortage for the entire colony member

↓

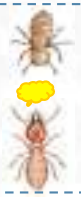
Colony elimination achieve

THE FOOD TRANSFER

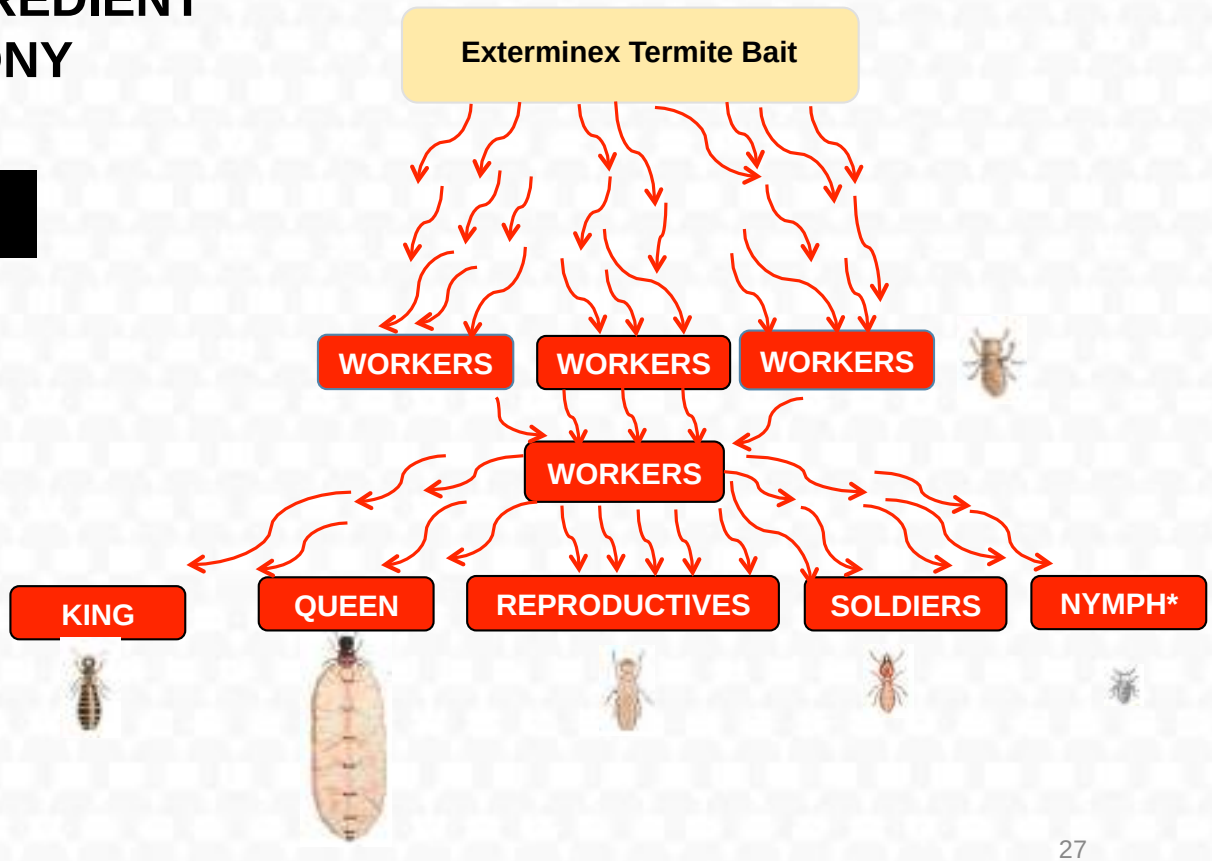
HOW DOES THE ACTIVE INGREDIENT SPREAD AROUND THE COLONY MEMBERS?

TROPHALLAXIS

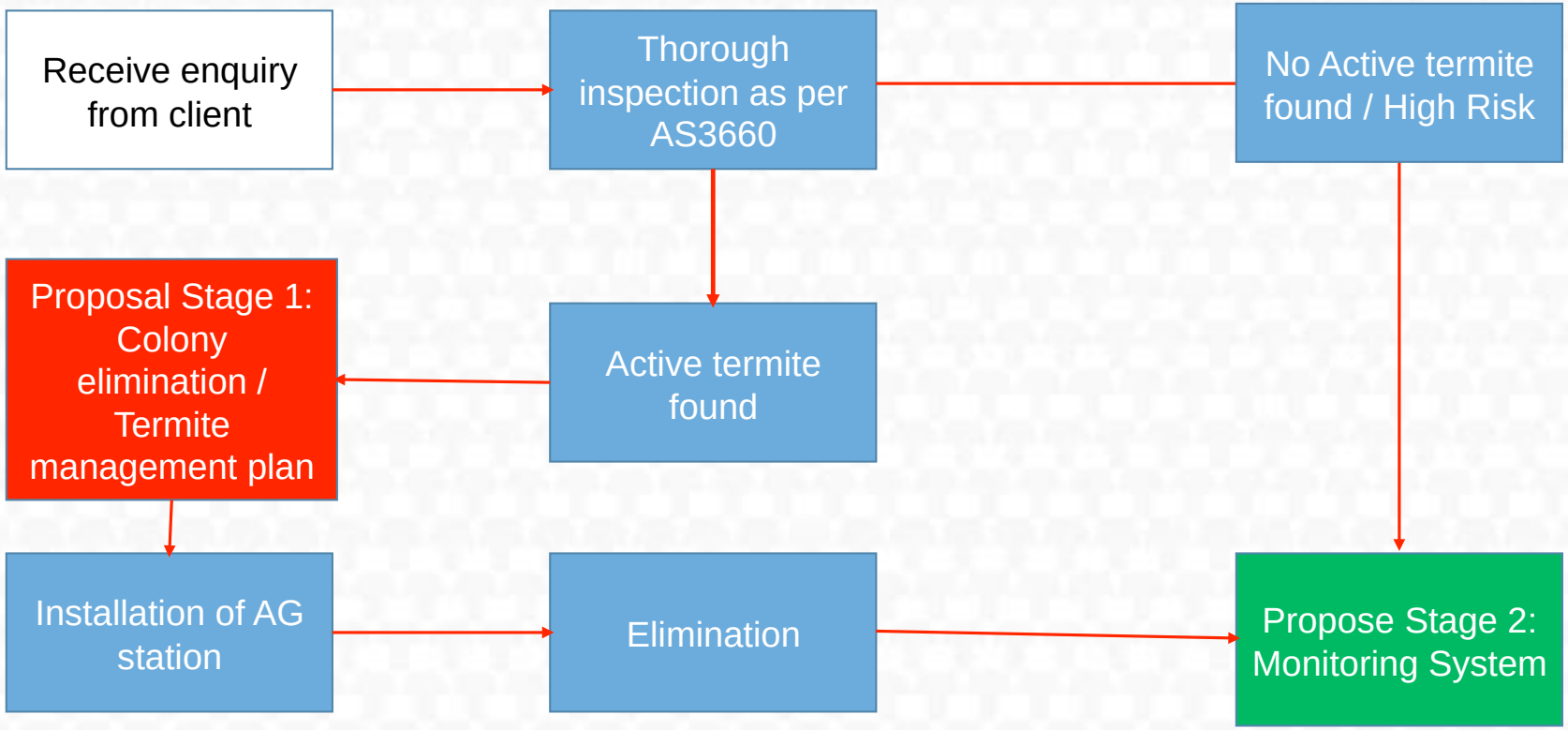
Stomodeal
(mouth-to-mouth)



Proctodeal
(anus-to-mouth*)



TERMITE BAITING WORKFLOW



TRAINING AGENDA

Module 2 Thorough Inspection and Detection

1.1 Inspection Tools

1.2 Termite Hotspots

1.3 Inspection SOPs

THOROUGH INSPECTION

Termite Inspection and Detection
1.1 Inspection Tools
1.2 Termite Hotspots
1.3 Inspection SOPs

INSPECTION TOOLS

Moisture Meter

Conventional Tools

Torch Light
Binoculars
Compass
Knife
Camera

Donger

ADDITIONAL TOOLS

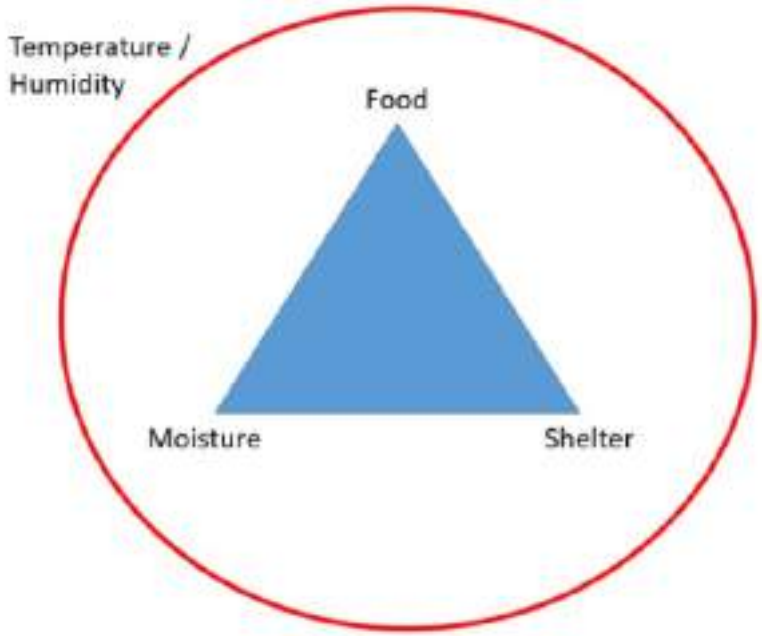
Termatrac T3i
(Termite Radar)

Detection Dog

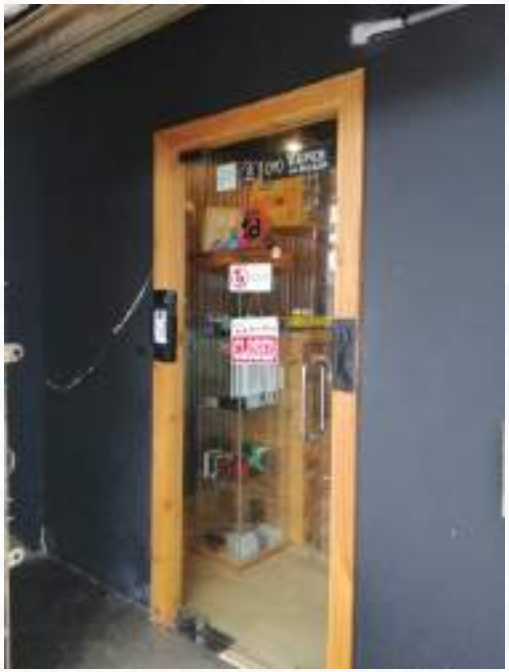
Thermal
(Thermal Camera)

TERMITES HOTSPOTS

Important Factors For Termite Survival



COMMON TERMITES HOTSPOTS



Door and Window Frames

COMMON TERMITES HOTSPOTS

Skirting & Wall Frames

COMMON TERMITES HOTSPOTS

Wet Areas

COMMON TERMITES HOTSPOTS

Plug Points

COMMON TERMITES HOTSPOTS

Flooring

COMMON TERMITES HOTSPOTS

Built-in Cabinetry

INSPECTION SOPs

Do's & Don'ts

Don't smoke prior to or during install

Do wash hands prior to install

Do use non-powdered plastic gloves

INSTALLATION OF STAGE 1: ABOVE GROUND BAITING

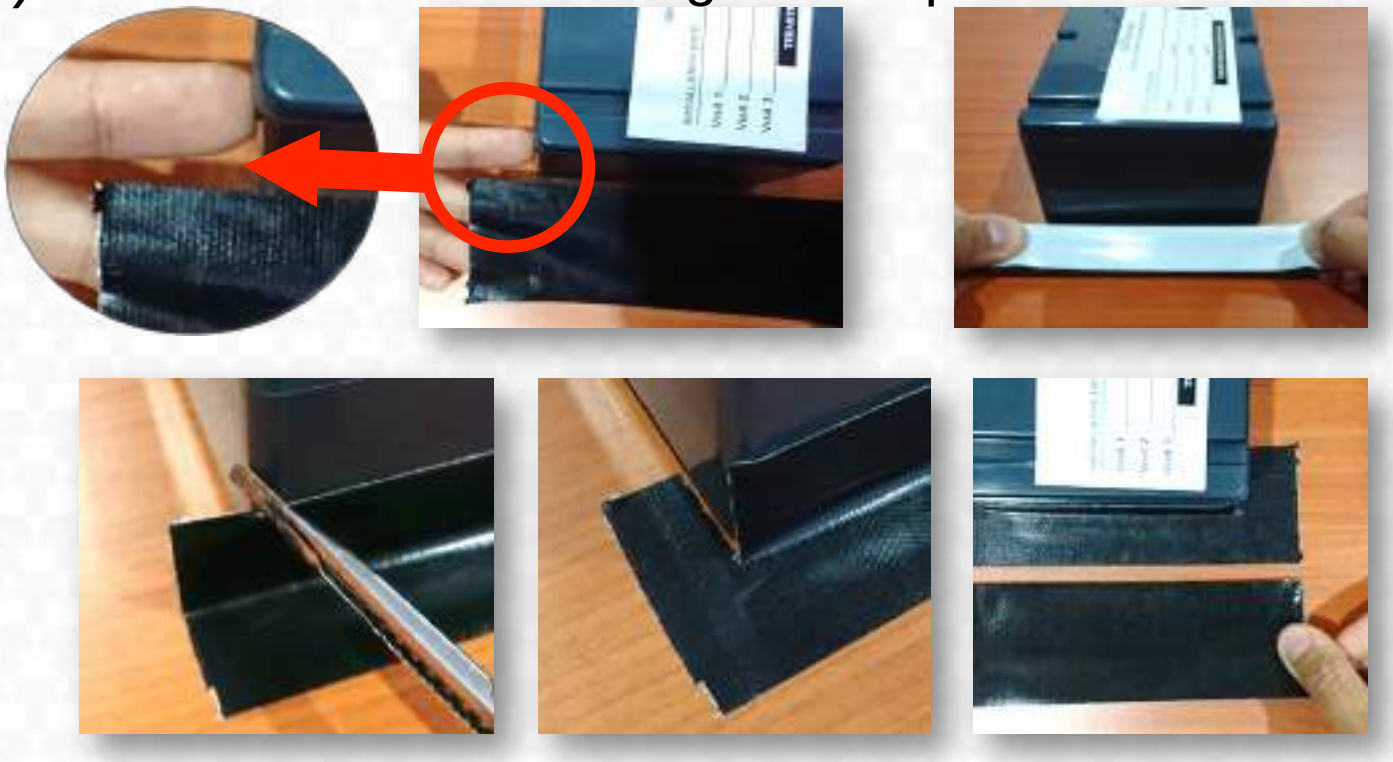
STAGE 1: COLONY ELIMINATION

Exterminex™ AG Station

1) Cushion **Installation**

STAGE 1: COLONY ELIMINATION

2) Seal the AG station using cloth tape



STAGE 1: COLONY ELIMINATION

2) Seal the AG station using cloth tape

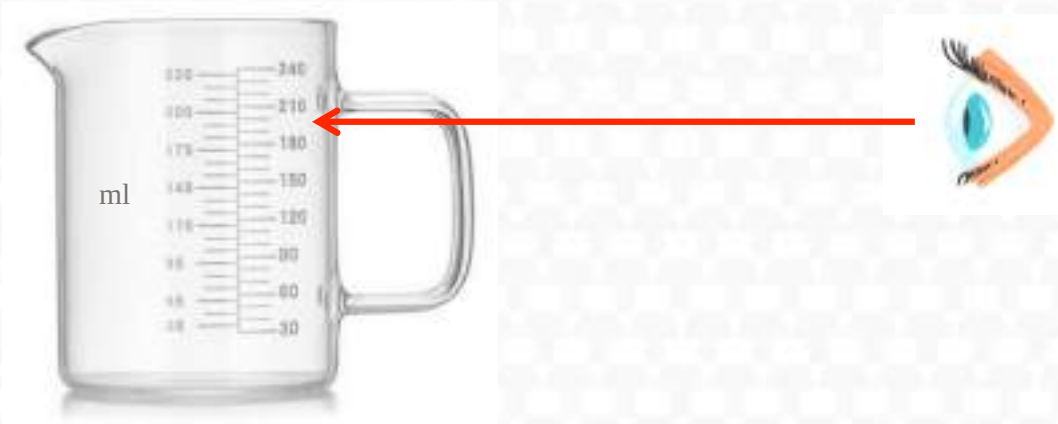
STAGE 1: COLONY ELIMINATION

3) Test the durability of the AG station

STAGE 1: COLONY ELIMINATION

4) Prepare the Exterminex™ bait

- Measure **180ml – 220ml demineralised water**

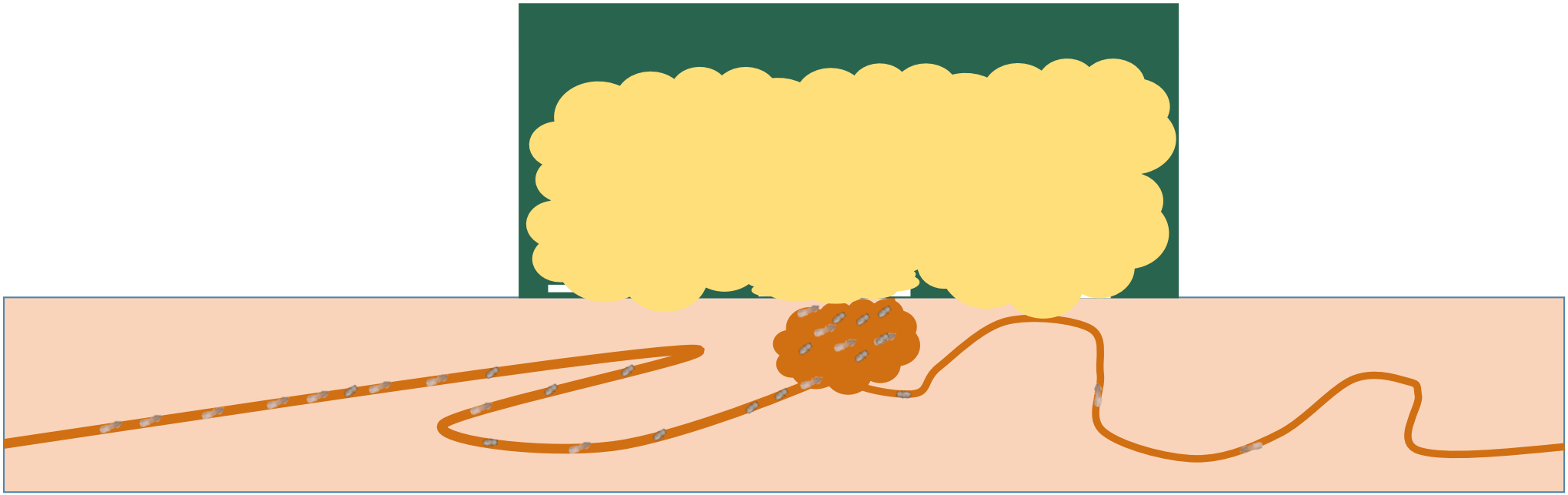


- Mix the water with Exterminex™ bait in the pack
- Cut 1 inch hole to back of bag, Place bait packet into AG station Opening to termite activity. Close up station.

1.1 Stage 1: Colony Elimination

Exterminex™ AG Station Installation

5) Fill the AG station with Exterminex™ bait



STAGE 1: COLONY ELIMINATION

How to install AG station at a challenging site?

Examples of challenging sites:

Roof beams

Wall edge

STAGE 1: COLONY ELIMINATION

We can install the bait **without using the AG station** by performing **Direct Baiting**

Roof beams

Wall edge

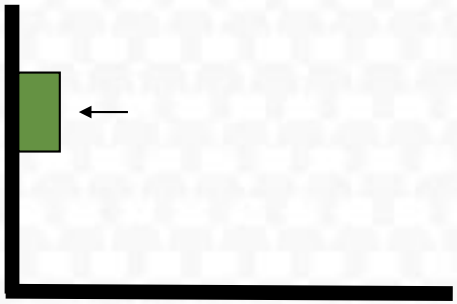
Window frame

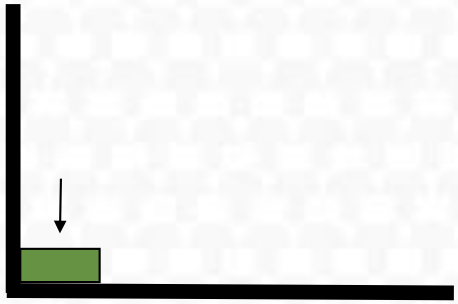
POSITIONS OF AG STATION

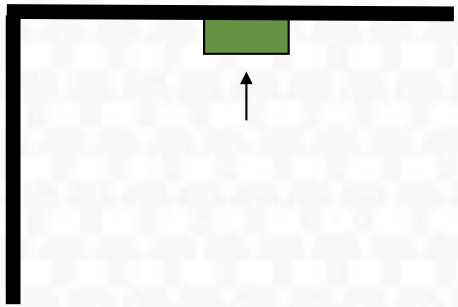
Vertical

Horizontal

Overhead







OUTDOOR INSTALLATION

On-ground installation

On tree installation

OUTDOOR INSTALLATION

COLONY ELIMINATION

Updated: 25th February 2020

2 WEEKS AFTER INSTALLATION (14 DAYS)

Common observation within 1 – 2 weeks after installation

SUCCESSFUL COLONY ELIMINATION

Exterminex™ Termite Baiting System complies with Australian Standard AS3660 and prioritises successful termite colony elimination.

Elimination process may require approximately 2 to 12 weeks depending on the size of the termite colony, typically between 6 to 8 weeks.

Average Consumtion Per Species (May Vary)
C. frenchi – 1-4 Bags – May be shy to start 3 weeks, small consumption
C. acinaciformis 2-6 Bags – Fast uptake in fist 1-2 weeks, moderate consumption
Shedorhinotermes spp 2-6 Bags – Multi site nesting, moderate-heavy consumption

Signs of successful colony elimination include presence of dead termite soldiers, absence of live termites, no high moisture, dry inactive leads, no movement on T3i, growth of fungus in/ on Exterminex™ Bait and presence of phorid flies and termitophiles (parasites) in the station.

SIGNS OF SUCCESSFUL COLONY ELIMINATION

No sign of live termite

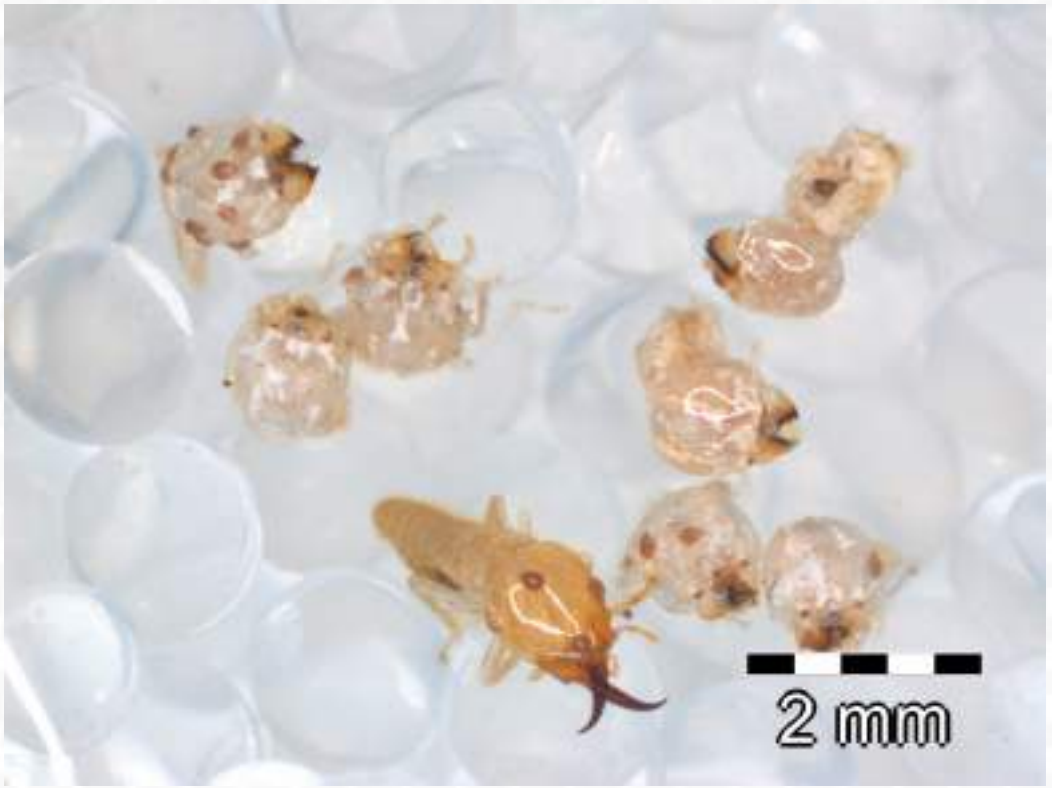
Dead soldiers

No activity on equipment

Growth of fungus

PARASITES ATTACK!

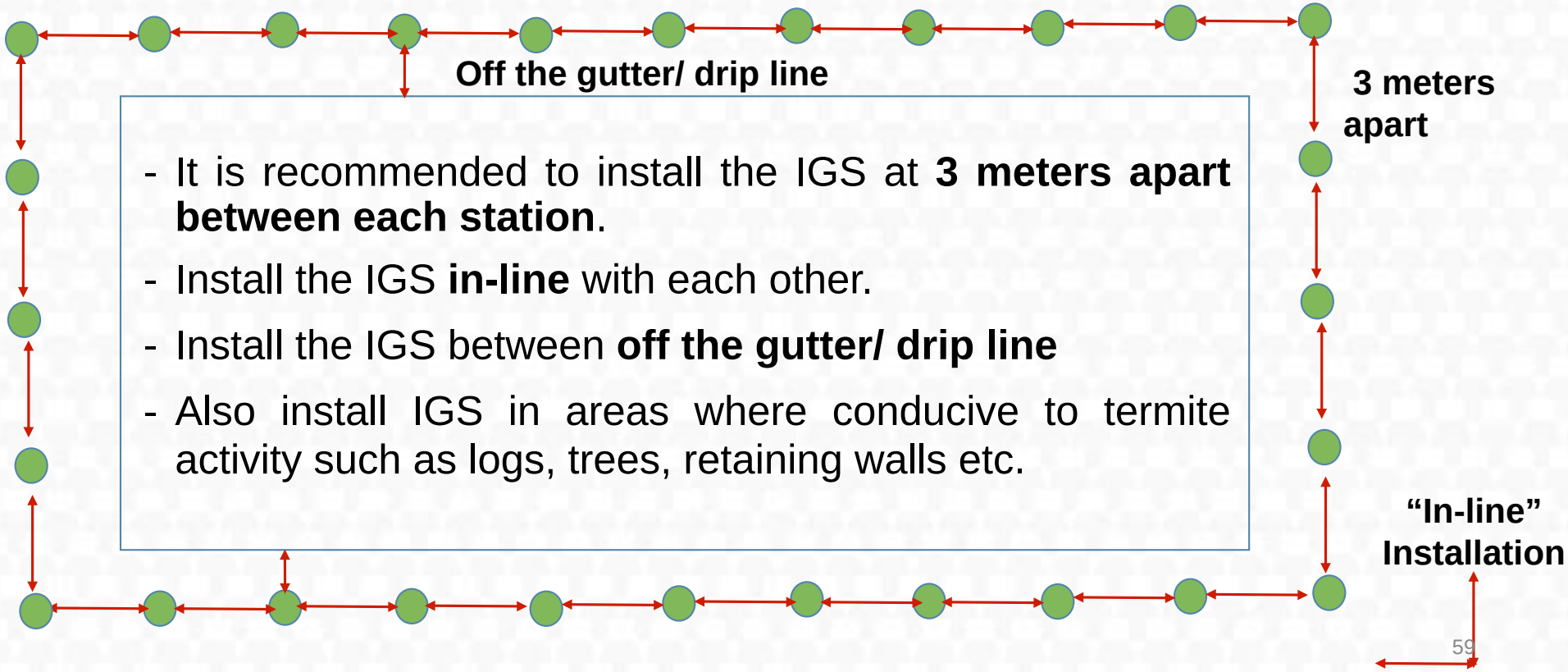
- A weakened colony is susceptible to parasite attack
- Helps in eliminating the colony



INSTALLATION OF STAGE 2:
MONITORING SYSTEM

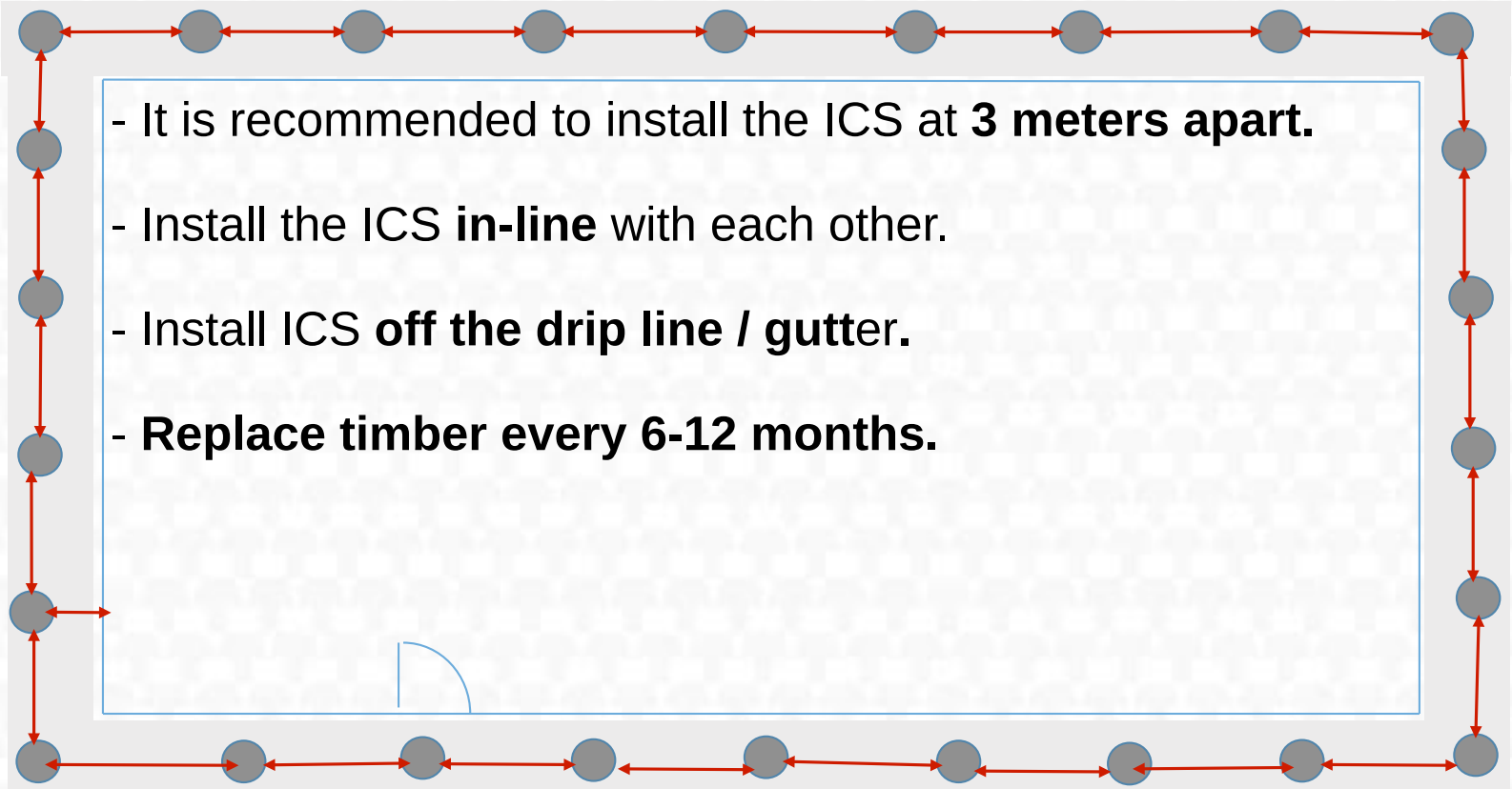
ExTermineX™

EXTERMINEX™ IG STATION INSTALLATION



- It is recommended to install the IGS at **3 meters apart between each station**.
- Install the IGS **in-line** with each other.
- Install the IGS between **off the gutter/ drip line**
- Also install IGS in areas where conducive to termite activity such as logs, trees, retaining walls etc.

EXTERMINEX™ IC STATION INSTALLATION



- It is recommended to install the ICS at **3 meters apart.**
- Install the ICS **in-line** with each other.
- Install ICS **off the drip line / gutt**er**.**
- **Replace timber every 6-12 months.**

3 meters apart

“In-line” Installation

INSTALLATION GUIDES

Drill hole using Auger

- Place the auger at the desired area and drill hole.
- Ensure the location is suitable and follow the recommended SOP.

Place IG inside the hole

- Ensure to gel ants if nearby in the area.
- Place IG sleeve on external of the station.

Place a pair of interceptor timbers inside the stations

- Ensure the station is fully planted inside the soil.
- Place the interceptors inside the station and visit every 6-8 weeks.

Place bait inside the station

- Should active termite found intercepted the station, place Exterminex™ Bait inside the station.
- Visit every 2 weeks until elimination, clean station and replace timbers.

INSTALLATION GUIDES

MONITORING IGS

Termites found inside the stations

MONITORING IGS

Termites not found inside the stations

IG SLEEVES

Benefits of using IG Sleeves

- Prevents sandy soil entering the IG station upon installation.
- As an added attractant to termite activity.
- Lengthens the lifespan of the interceptor timbers.

BENEFITS OF FULL SYSTEM

- Maximum risk reduction for your client

- On going work all year round

- More visits means more potential to upsell other seasonal pest services

- Customer relations

- Contracts add value to your Buisness

-Think about self monitoring

THANK YOU