Recent Advances in Rodent Pest Management

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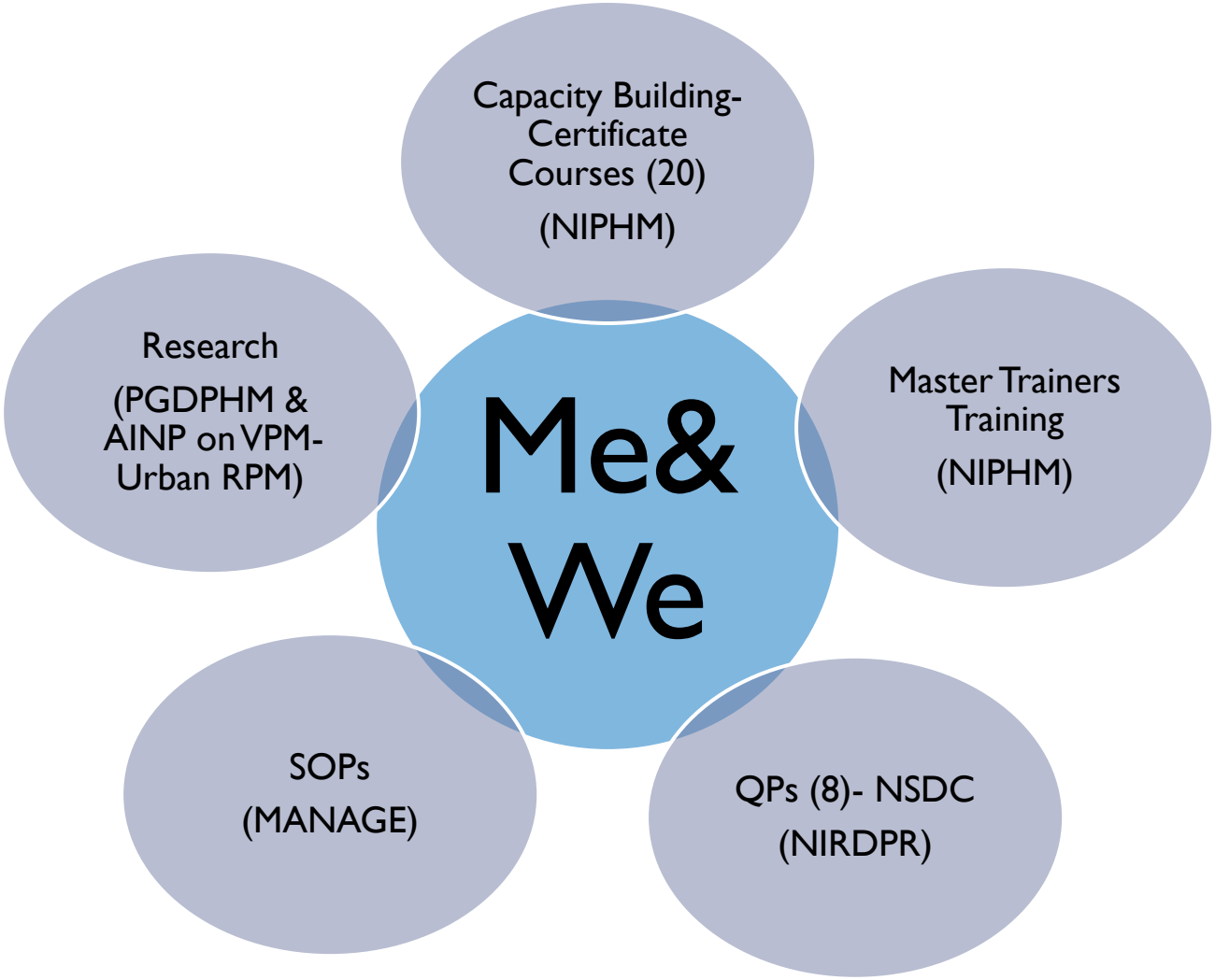
Who Am I ?


Capacity Building- Certificate Courses (20)
(NIPHM)
Research
(PGDPHM & AINP on VPM- Urban RPM)
Me& We
Master Trainers Training
(NIPHM)
SOPs
(MANAGE)
QPs (8)- NSDC
(NIRDPR)


Management under National Skills Qualification
Framework of India

Contents

- Rodent Problems in structures and Present Scenario
- Industry Existing Practices
- Success (or) Failure- Analysis
- Science behind Rodent Management
- Advancements and Opportunities
- Keys- Rodent Control Success
- Take home points

Mouse Plague in Australia

https://fb.watch/94KEwzNviu/

https://youtu.be/-vksIC6IJ-Q

Rodent Situation-Analysis

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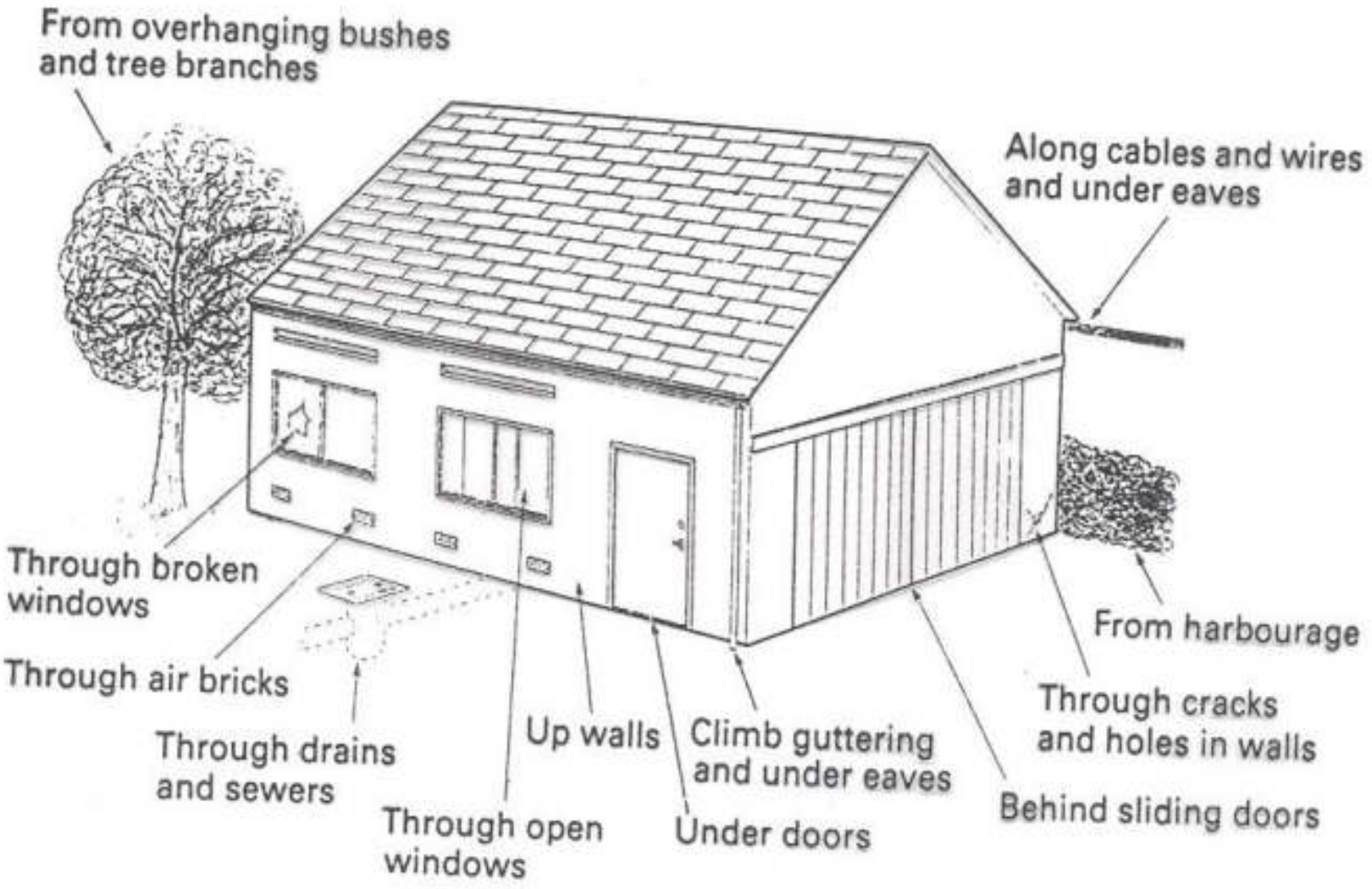
Situation Analysis

Bandicoot burrows

Potential routes and sites of rodent entry into a structure/house



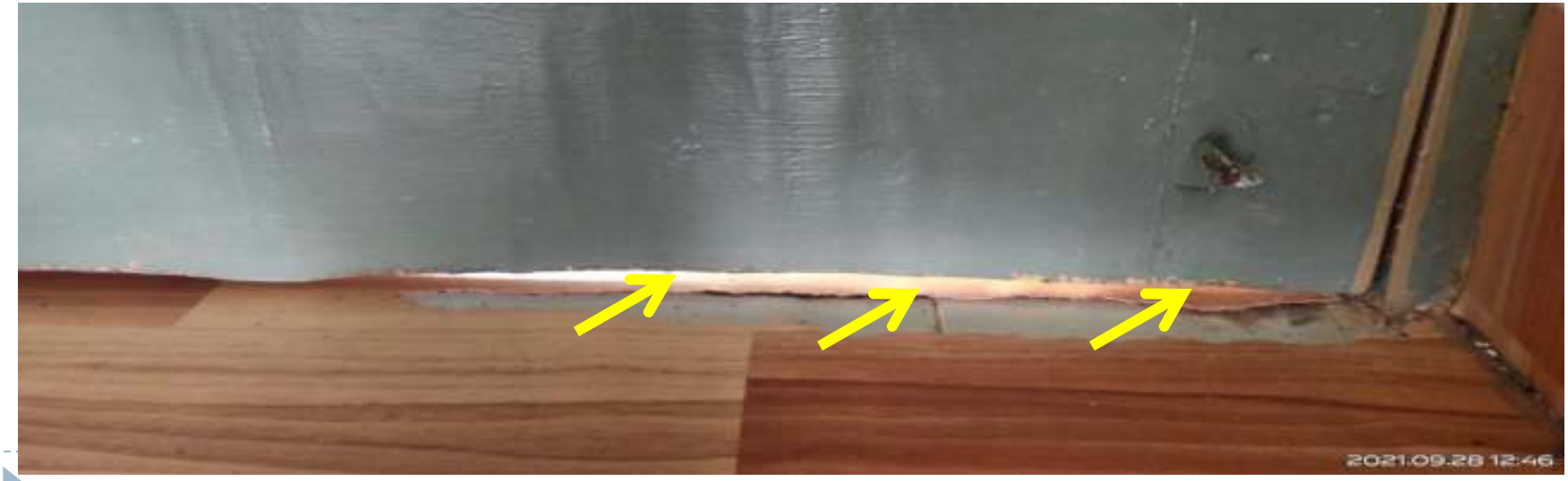
Possible Rodent Entry Points (Defects in civil Engineering)





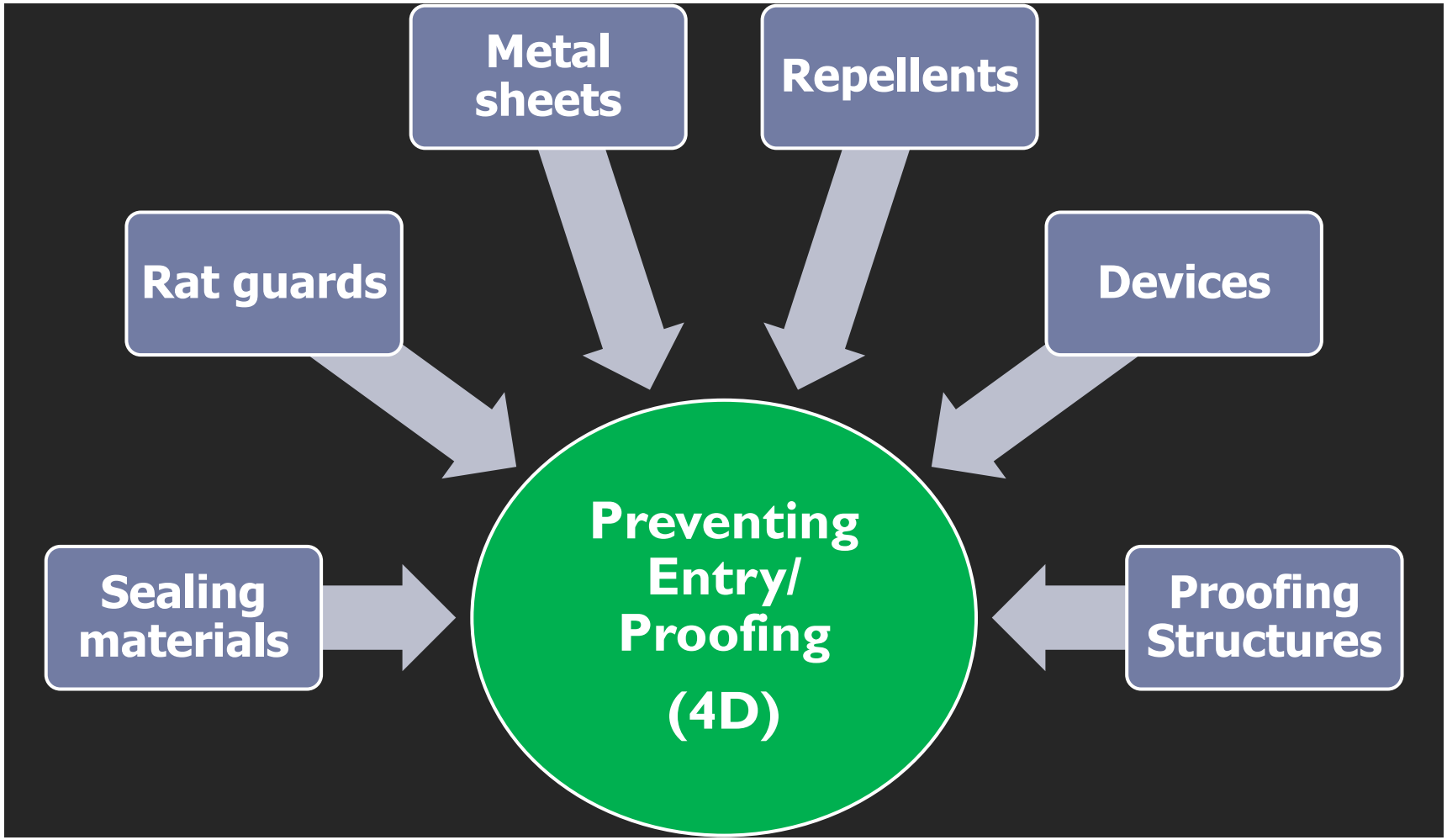

Possible Rodent Entry Points
(Defects due to electrical works etc.)

Rodent problem at my office (September 2021)



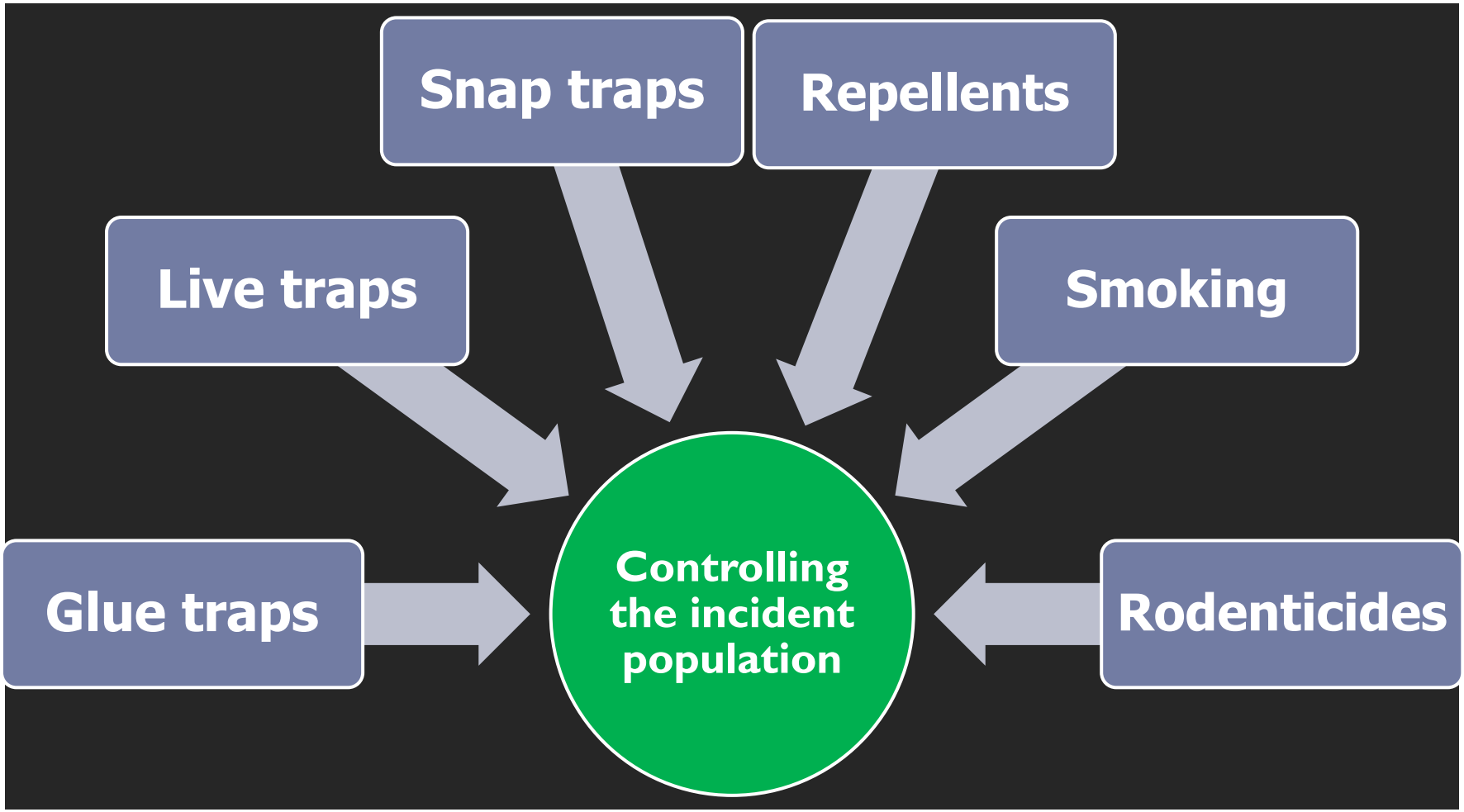
Existing Practices?

(part of preventive measure)



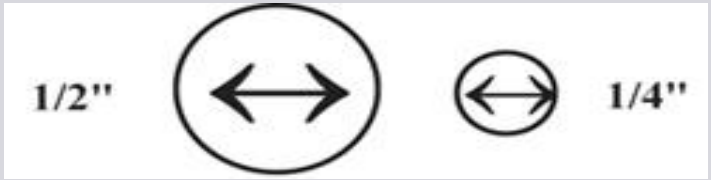
Existing Practices?

(part of curative measure)



Ability of a Rat

A Rats can:



- **Crawl** through or under any opening higher or wider than **1/2 inch**
- **Climb** the outside of vertical pipes and conduits up to **3 inches** in diameter
- **Climb** the outside of larger pipes attached to buildings by bracing themselves between the wall and the pipe.
- **Climb** the **inside of** vertical pipes, wall voids, or earthquake safety seams and joints between **1** 1/2 **and 4 inches** in diameter
- **Jump** from a flat surface up to **36 inches** (91 cm) vertically and as far as 48 inches horizontally
- **Drop 50 feet** (15 m) without being seriously injured
- **Swim** as far as **1/2 mile** (800 m) in open water
- **Dive** through water traps in plumbing, and travel in sewer lines against a substantial water current.

Ability of a House mice

House mice can:

- Enter openings larger than **1/4 inch** (0.6 cm)
- **Jump** as high as **18 inches** (46 cm) from a floor onto an elevated surface
- Travel considerable distances crawling upside-down along screen wire
- Survive and reproduce at a temperature of 24^{o} F (-4^{0}C) if adequate food and nesting material are available.

Rat Guards

Rat guards:

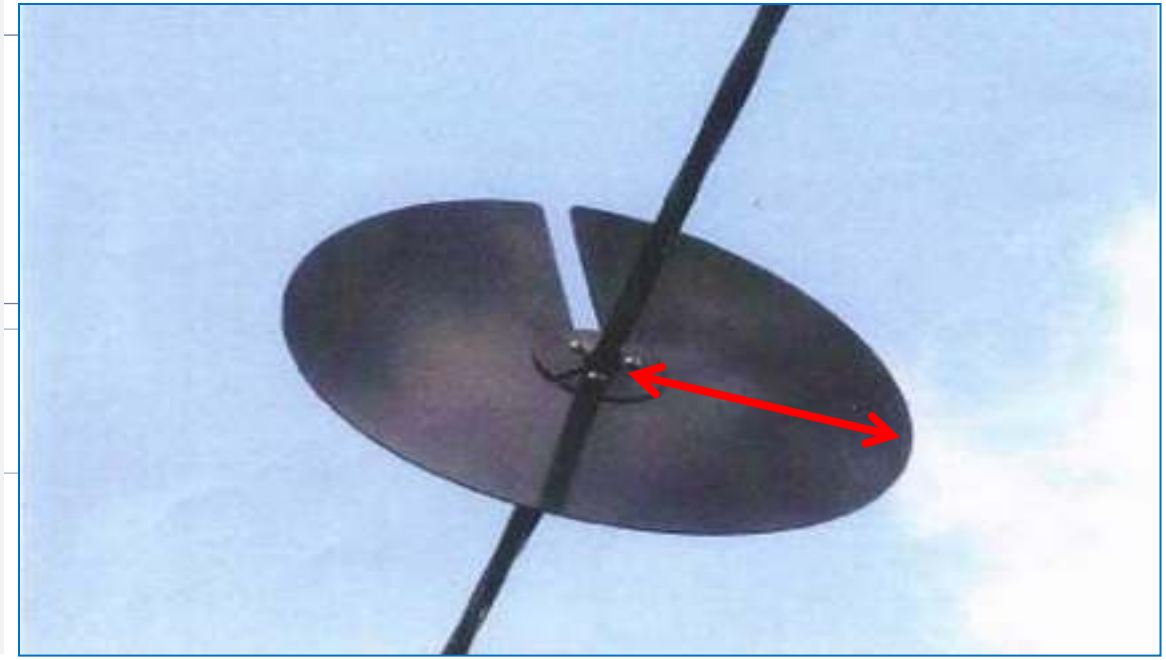
Arrest further movement of the animal

- ✓Shipping yards
- ✓Buildings
- ✓Cables
- ✓Pipes

Metallic sheet cones

Specifications:

Solid metal sheet min. 0.024 inch (0.61 mm) thick, projecting a minimum distance of 12 inches (305 mm) beyond and on either sides.



Rat guards around pipes, roof beams

Drain pipe grate and cover

Rodent Proof Structure is.....

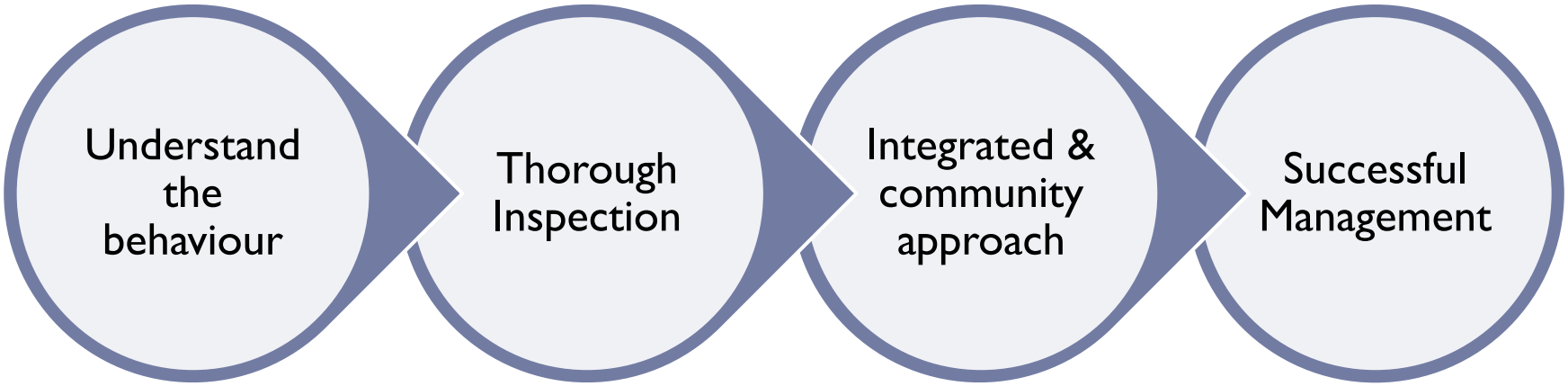
- The most effective means of limiting rodent damage is rodent-proof construction. New buildings should be designed and built to prevent rodent entry. Rodent-proofing is a good investment. Designing and constructing a rodent-proof building is less expensive than adding rodent-proofing later. Nevertheless, poor maintenance or management practices, such as leaving entry doors and unscreened windows open, will make the best constructed building susceptible to rodent entry.

TRAPS

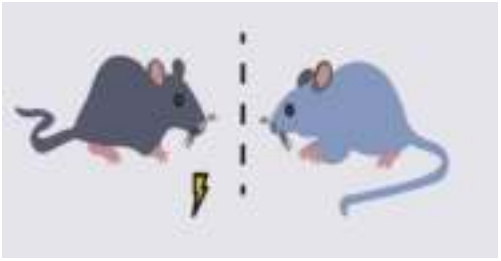
Wonder trap catches in a seed godown

Glue traps

Science Behind Rodent Management



Understanding the Behavior

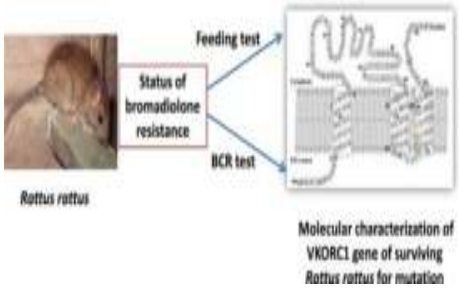


Neo-phobia

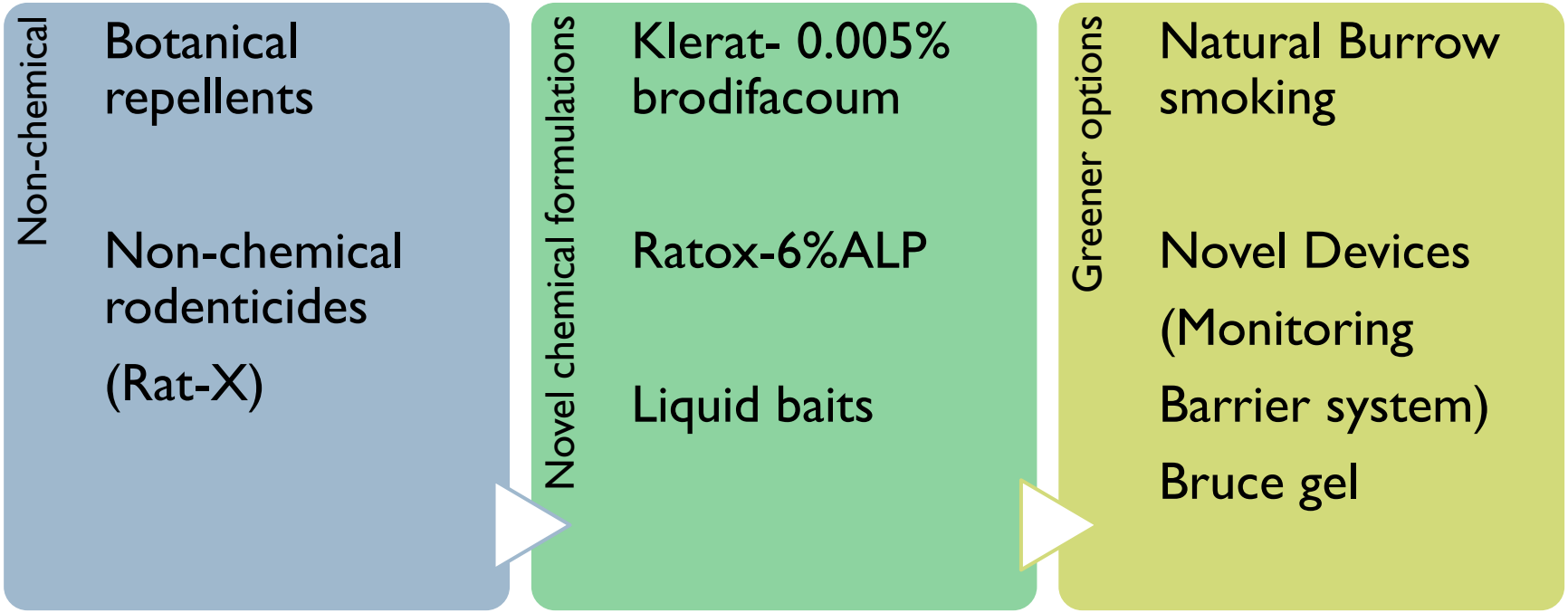
Bait shyness

Theigmotaxis

Anticoagulant resistance



Recent Advancements & Future opportunities



Botanical Repellents

Non-chemical Rodenticides

Liquid Baits

- Rodenticides in the form of liquids
- Semi solid baits/ Pastes
  - 3% Yellow phosphorous (Multiple organ failure)

Application of Baits as Liquids

Anticoagulant Rodenticide-Brodifacoum

Fumigant rodenticides

Treatment	% control success (LBC)	Remarks
XL-ALP-R- Fumirat (6% a.i) @ 1 tab/burrow (12 g tab.)	95.71	Highly effective

Burrow smoking

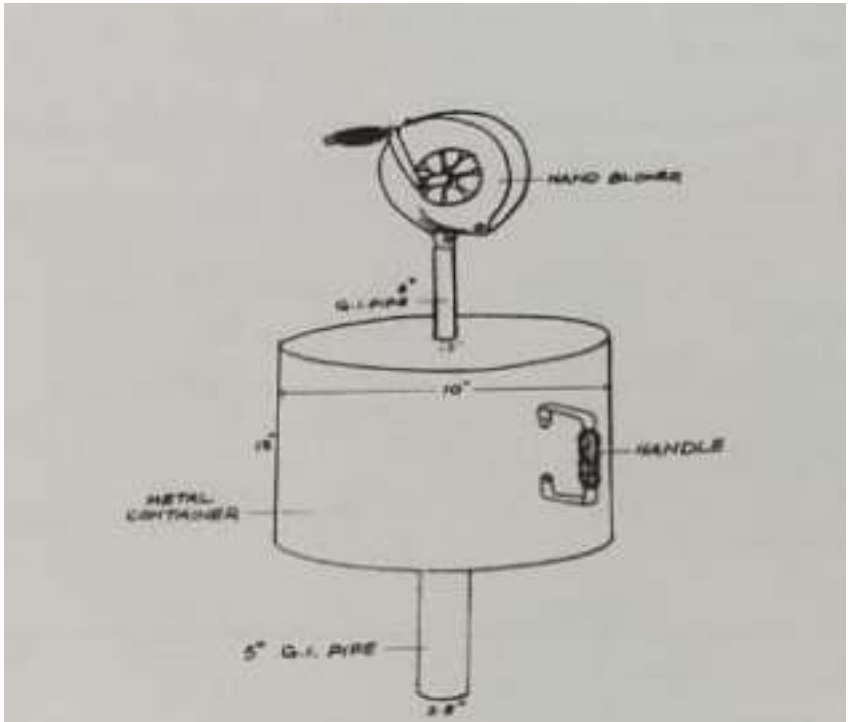


Fig. 1 Burrow Fumigator

A) Metal container
B) Air Blower
c) Smoking Material
(Organic crop wastes-
Dung flake
Straw
Shells
fallen leaves/weeds etc
D) Crowbar
D) Operator (2)

Burrow smoking in residential areas

Efficacy of Burrow Smoking

Efficacy of burrow smoking Vs ALP fumigation			
Treatment	No. of burrows treated	No. of burrows reopened	% Rodent Mortality
Burrow Smoker	280	23	91.79%
ALP	280	11	96.07%
't' value	1.79 NS		

Source: Burrow fumigator, technical bulletin, 2005

Key to success

Inspection

Key to success

Take home points

- Know about the Pest
  - Mosquitoes- oil saw dust pillows…… Floating baits
  - Flies- Insecticide ropes
  - Rodents- Dual bait stations
- Know from the Pest
  - Don't quarrel – Maintain healthy environment
  - SOPs
- Manipulate the Behaviour and judicious use of poisons
- Find out the strategies and prepare and implement action plan
- Educate the customer
- Fallow-up actions

AINP on VPM, ANGRAU, RARS, Maruteru

To Know Who You are?
Why You are?

Practice Meditation (Kundalini)

Thank You IPCA

Thank You All

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