Popular Article

PHEROMONES AND ITS APPLICATION IN VETERINARY SCIENCE

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Introduction

Pheromones are chemical substances secreted by animals that trigger a specific behavioral or physiological response in other animals of the same species. Unlike hormones, which work internally within an individual's body, pheromones are ecto-hormones that I they released externally and act on other individuals. They are typically detected through vomeronasal organ also known as Jacobson organ, which is specialized chemosensory located in nasal cavity or on the roof of the mouth of the many vertebrates. Anatomical, physiological and behavioural adaptations to retain the heat generated.

Types of Pheromones

Pheromones are classified based on the type of response they elicit:

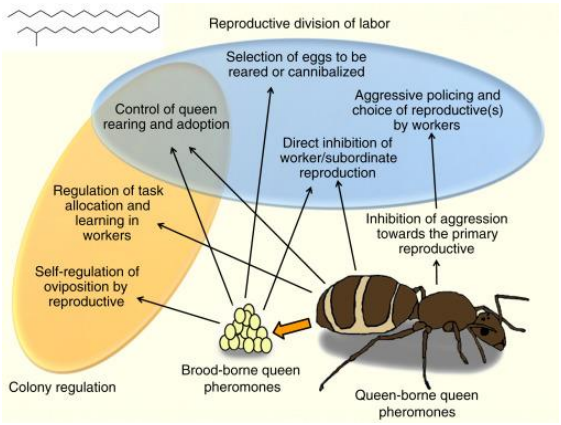
1. Primer pheromones.
2. Signaler pheromones
3. Releaser phorapsones
4. Modifier pheromones

1. Primer pheromone: These causes long-term physiological changes often affecting hormonal balances and reproductive cycles. For example, a male mouse's urine contains pheromones that can accelerate the onset of puberty in young female mice.

2. Signaler pheromones: These provide information about animal's identity, such as age, sex, social status, and so on. For example, a dog marking its territory with urine.

3. Releaser pheromones: These pheromones trigger an immediate short-term behavioral response. For example, sex pheromones released by a female in heat instantly attract and stimulates the male animal.

4. Modifier pheromones: These pheromones alter or modify the response to other pheromones. They can affect the perception of other chemical signals. For example, queen mandibular pheromone produced by a queen bee alters the behavior and physiology of worker bees, suppressing their ability to lay eggs & build queer cells.



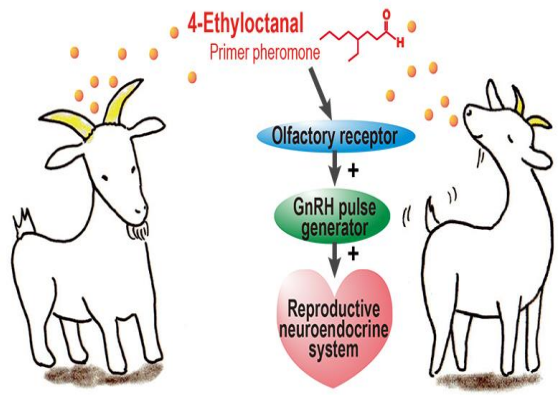


Fig 1. Pheromomnes in veterinary science

Application of Pheromones in Veterinary Science

Understanding pheromones is crucial in veterinary practice:

1. **Behavioral modification**: Synthetic pheromones as Eeliway for Cats and Adoptil for dogs, are used to reduce stress and anxiety in various situations like travel, change of home and so on

2.**Reproduction management**: Pheromone can used to influence breeding behaviour in animals and also to synchronize estrus in female livestock. For example, boar pheromones can be used to stimulate estrus in to sows.

3. **Diagnosis and Monitoring**: Changes in an animal's pheromone profile can sometimes signal stress and illness, providing a potential diagnostic tool for veterinarians.

Conclusion

Pheromones are chemical substances secreted by an animal that plays a vital role in communication and are critical for animal reproduction, social behaviour and survival. It also offers veterinarians a powerful tool for managing animal behavior and improving animal welfare.