



**INTRODUCTION:** Chemical treatments play a key role in varroa mite management in the UK, particularly when monitoring shows mite levels are rising to damaging levels. These treatments are classed as veterinary medicines and must always be used according to the product label and current official guidance.

This guide provides a high-level overview of the main types of chemical varroa treatments, how they differ, when they are typically considered, and why rotation matters. It is designed to help beekeepers make informed decisions — not to replace product instructions.

## IMPORTANT SAFETY NOTICE (READ FIRST)

### ⚠ Chemical varroa treatments are veterinary medicines.

Always:

- Use only products licensed for use in the UK
- Follow the product label exactly
- Observe temperature limits and withdrawal periods
- Keep treatment records for at least five years
- Check current guidance via BeeBase / the National Bee Unit

*This document does not provide dosages or application instructions.*

## UNDERSTANDING TREATMENT “TYPES” (NOT JUST PRODUCTS)

Varroa treatments are best understood by their active ingredient group, not just by brand name. Repeated use of the same group can encourage mite resistance, even if the product name changes.

## MAIN CHEMICAL VARROA TREATMENT GROUPS USED IN THE UK

Overview Table

Treatment group	Examples (UK products)*	Typical constraints	Resistance risk
Organic acids	Oxalic acid (e.g. Api-Bioxal), Formic acid products	Temperature, brood presence	Low
Thymol-based	Thymol formulations (e.g. Apiguard, ApiLife Var)	Temperature range, no supers	Moderate
Amitraz-based	Amitraz strips (e.g. Apivar)	Rotation essential	Increasing
Pyrethroids	Pyrethroid strips (e.g. Apistan)	Widespread resistance	High

*\*Product names shown as examples only. Availability and guidance may change.*



## ORGANIC ACID TREATMENTS

### What they are

Treatments based on naturally occurring organic acids, commonly **oxalic acid** and **formic acid**.

### Typical use

- Often associated with brood-less periods or specific temperature ranges
- Commonly considered in mid-winter or during planned brood breaks

### Key points

- Act primarily on mites on adult bees
- Low risk of resistance when used correctly
- Highly dependent on timing and colony condition

### Limitations

- Ineffective against mites protected in capped brood (depending on method)
- Incorrect use can harm bees

## THYMOL-BASED TREATMENTS

### What they are

Treatments derived from essential oils, primarily thymol.

### Typical use

- Often used in late summer or early autumn
- Applied after honey supers are removed

### Key points

- Widely used in UK beekeeping
- Can reduce mite levels before winter bees are raised

### Limitations

- Strongly temperature dependent
- Slower acting than some other treatments
- Odour can affect colonies if conditions are unsuitable



## AMITRAZ-BASED TREATMENTS

### What they are

Synthetic treatments based on amitraz, usually delivered via strips.

### Typical use

- Often part of a late-season treatment plan
- Used where resistance patterns allow

### Key points

- Can be effective when used correctly
- Should be rotated carefully with other treatment groups

### Limitations

- Resistance has been reported in some areas
- Overuse increases long-term risk
- Must never be under-dosed or reused incorrectly

## PYRETHROID TREATMENTS

### What they are

Synthetic treatments based on pyrethroids.

### Typical use

- Historically common in the UK

### Current considerations

- High levels of resistance reported in many areas
- Effectiveness varies widely

### Best practice

- Only used where resistance testing or local guidance supports their use
- Never relied on repeatedly



## TIMING AND TEMPERATURE – WHY THIS MATTERS

Chemical treatments do not work equally well in all conditions.

### Typical considerations include:

- Presence or absence of sealed brood
- Ambient temperature range
- Whether honey supers are present
- Colony strength and stress levels

### Seasonal overview (descriptive)

Season	Typical focus	Notes
Spring	Monitoring & planning	Avoid disrupting build-up
Summer	Care during honey flow	Many treatments unsuitable
Late summer / autumn	Key control window	Protect winter bees
Winter	Residual mite reduction	Often brood-less

Always check the product label - **season alone is not enough**.

## RESISTANCE AND TREATMENT ROTATION (CRITICAL CONCEPT)

Varroa mites can develop resistance when the same active ingredient group is used repeatedly.

### Good resistance management includes:

- Rotating between treatment groups over time
- Avoiding repeated use of the same type year after year
- Ensuring treatments are completed correctly
- Avoiding under-dosing or shortened treatments

### Example rotation principle (illustrative only)

Year	Main treatment group	Supporting actions
Year 1	Thymol-based	Monitoring + records
Year 2	Amitraz-based	Comb renewal
Year 3	Organic acid	Brood break planning

This shows **rotation of groups**, not a prescription.



## CHEMICAL TREATMENTS AND IPM

Chemical treatments work best when combined with:

- Regular monitoring
- Non-chemical controls (e.g. drone brood removal)
- Good hygiene and comb renewal
- Accurate record keeping

This is the core of Integrated Pest Management (IPM).

## RECORD KEEPING – A LEGAL REQUIREMENT

Record Keeping – A Legal Requirement

Many varroa treatments are veterinary medicines.

Records should include:

- Product name
- Treatment dates
- Hive identification
- Quantity used
- Any withdrawal period notes

Records should be kept for at least five years.

## OFFICIAL GUIDANCE AND FUTURE READING

Official Guidance and Further Reading

- National Bee Unit / BeeBase - <https://www.nationalbeeunit.com>
- Veterinary Medicines Directorate (VMD) - <https://www.gov.uk/government/organisations/veterinary-medicines-directorate>
- British Beekeepers Association - <https://www.bbka.org.uk>
- BeezKnees – Varroa Management - <https://beezknees.co.uk/varroa-management>