



HOW TO USE THE MONDEES BEES HIVE INSPECTION SHEET

This document is not meant to be prescriptive.

I have developed this document over several years of beekeeping in my own apiaries, documenting and editing as needed to support my learning and understanding. It is a living document that is still regularly updated as I identify new information I want to record.

I am sharing this information to support beekeepers who want to make meaningful observations and develop a deeper understanding of their bees.

The information in this document is not intended to be a training tool, and an established knowledge of beekeeping is assumed.

A regular practice of recording your hive observations will not only meet legal requirements but also help you deepen your knowledge and understanding of bee behaviour, biology and seasonal adjustments in your own apiary.

By consistently recording these details, you will begin to recognise patterns of behaviour that teach you about your bees. If there is a sudden change in the behaviour of your bees, the information you have recorded may suggest why.

The detail in the following pages aims to explain the purpose of each section and the importance and/or relevance of recording specific information in each section.

The Hive Inspection Sheet has been developed to make recording as easy as possible. Where there are grey boxes, some writing is required, but most sections only require a tick in a box. All you need to begin recording your observations is a Hive Inspection Sheet, a clipboard and a pen.

SECTION 1

Bees						HIVE INSPECTION SHEET			
Apiary location	1				Hive ID	2			
Date	3				Time	4			
Weather	5	Temp		Wind	☐	Sun	☐	Cloud	☐
Smoker used	Yes ☐	No ☐	Fuel in Smoker	6					

- 1 The **Apiary location** is the suburb where your hive is located (useful if you have multiple hives in different locations. Helps you determine if hives in one location do better/worse than hives in another.
- 2 A **Hive ID**, such as a number or name for each hive helps avoid confusion and keep your records about each hive together and accurate.
- 3 The **Date** is important. In spring I inspect every 7-10 days, in summer and autumn, every 3-4 weeks. Dating the sheet helps me determine the next inspection date, meets regulatory requirements and provides a timeline of each hive's progress.
- 4 **Time** of day plays a role in how the bees respond to your presence. Noting when your bees are most tolerant of your presence helps you establish patterns that work for you, e.g. if PM inspections have more defensive behaviour, then you may want to stick to AM.
- 5 **Weather** can affect the temperament of the bees. Some will be 'grumpy' on cloudy days or days with higher wind. Regular tracking helps you learn the behaviour of your bees.
- 6 The **fuel** in your smoker can affect how your bees respond to your presence. If you have consistently used one type of fuel and then change to a different type of fuel, your bees might react to the new fuel.

SECTION 2

Hive Configuration	7
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- 7 Knowing what components make up my hives is useful, especially as my hives are located away from where I store my equipment. I use a 'shorthand' that works for me, e.g. VBB; 2xBB; QE; 2 x HS, VL tells me it has a vented bottom board, 2 brood boxes, a queen excluder, 2 honey supers and a vented lid.

SECTION 3

Hive Entrance Observation	# Bees per minute	8	Debris/Dead bees/Wasps/Robbing?	9
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- 8** I only fill in this section towards the end of winter. As the weather starts to warm up, I count how many bees are actively coming and going in ten seconds, multiply that by 6 to get number of bees per minute. I repeat the count weekly and when the number is steadily growing week on week, that is my cue to do the first inspection of the season. As soon as there is a wind still day with a daytime temperature of at least 15C, I open and do the first inspection of the season.
- 9** I only fill in this section if I observe something of note at the hive entrance. Debris could include chalk brood mummies, newspaper if you have done a merge, elastic bands if you have done a cutout etc. If there are dead bees at the entrance, I note their appearance (usually tongues out means they have been poisoned), in autumn European wasps may be hanging around to prey upon evicted drones, robbing behaviour is very distinctive and results in bees fighting to the death. If a hive has been robbed, I check to assess the damage and determine what action I should take.

When you do your hive inspections, ensure you have a lit smoker that emits cool, white smoke. The FIRST thing you do is gently puff some smoke into the entrance of the hive. Then you use your hive tool to 'crack' the lid and puff some smoke into the top of the hive. Place the lid back down for about 10 seconds, before slowly and gently removing it and upturning it onto a flat surface. Work gently and calmly, avoiding vibrations and being mindful not to squish bees. Remove any honey supers and stack them on top of the upturned lid. If you have a queen excluder, remove it and put it on top of the supers. If you have two brood boxes, remove one and place it on top of the queen excluder and place something (hive mat, piece of corflute, towel, etc.) over the top of that stack. You have effectively separated the colony and can now inspect the bottom brood box without too many bees buzzing around. Once you have inspected the bottom brood box, put the cover that was on the stack onto the bottom brood box. Go ahead and inspect the top brood box where it is (do not put it back on top of the bottom brood box at this stage. By inspecting your brood boxes in this way, you do not risk over smoking (and thus agitating) your bees.

SECTION 4

BROOD BOX 1 (bottom) Record % of each in the corresponding boxes. Identify any issues, signs of disease or pest. or tick relevant box if appropriate (e.g. queen on this frame, this frame is a foundation frame, this frame is empty).

Frame Number	BROOD NEST				Pollen/ Bee Bread	Nectar	Honey	Queen	Foundation only	Empty Comb only	Issues?
	Eggs	Larvae	Worker Brood	Drone Brood							
1							85				
2					45	15	15				
3	40	10			15	20	10	✓			
4	5	5	50		15		15				
5	30	30	30	5							
6		15	80	5							
7			90								
8			20		25	15	30				
9					35	15	25				
10							100				

Record what you observe on every frame as a percentage of the entire frame space.

By recording your observations in detail, you will be better able to manage against swarming, prevent honey and/or pollen bound hives, address pest and disease early, identify queen issues, monitor the growth of the brood nest and identify if your hive is nutrient deficient.

If there is very little honey, nectar and/or pollen noted in any of the frames, that is a trigger that your hive is living ‘hand to mouth’ and you may want to consider supplemental feeding.

Conversely, if there is more honey, nectar and/or pollen than brood then your hive is either pollen or honey bound, limiting the brood space for the queen to lay and you need to intervene by replacing those bound frames.

If there are no eggs or larvae, then you need to investigate why your queen is not laying. If there is only drone brood, it may be a trigger to replace the queen.

The brood nest is identified in the area with the **red line** around it. In this example the brood nest is across six frames. You can also see on frames 4 to 8 there is a significant amount of worker brood, telling you that the number of bees in this colony is about to expand significantly, because 1 frame of bees will yield 2 ½ frames of bees. You need to identify if there is sufficient space for all these bees or is it time for a second brood box; a honey super or a split.

If you have two brood boxes on the hive, then repeat this for Brood Box 2. Depending on the time in the season, you may find that one box has much more brood than the other.

SECTION 5 (Page 2 of Hive Observation Sheet)

The information on this side of the inspection sheet can be filled in once the inspection is completed and you have reassembled the hive. However, during the inspection you do need to take note of the things that will be recorded on this page.

Words in **red** require immediate intervention

Words in **orange** are cautionary and must be investigated further.

11	10	Hive temperament	Calm ☐	Nervous ☐	Flighty ☐	Defensive ☐
		Colony condition	Dead ☐	Weak ☐	Marginal ☐	Strong ☐

10 You want bees that are calm on the frames and going about their business without paying much attention to you.

Nervous bees are “jittery”, scurrying about on the frames.

Flighty bees fly up into your face/veil as soon as you lift the lid and continue to fly around whilst you are inspecting.

Defensive bees release their alarm pheromone (a strong sweet ripe banana smell), buzz up against you and sting your suit/gloves.

If you experience anything other than calm bees, you need to investigate what may be the cause, e.g. weather or new smoker fuel or smoke that is too hot or using too much smoke. A nectar dearth or a pest? Is the hive queenright? Is the hive overcrowded? Is it the genetics of a new queen? Consider the condition of your hive ware and frames? Any of these things could be the reason why your bees are ‘acting up’.

11 The **colony condition** relates to how many bees there are in the hive. This can tell you if the bees are in trouble or thriving. Ideally, you want a strong colony with bees across all frames.

If the entire colony is **dead**, you need to investigate how/why they died. It could be a pest, disease or environmental factor such as foraging on weeds that have been sprayed with herbicides, or they could have starved to death.

A **weak** colony has very low numbers of bees, very little brood and little or no resources. This colony will die without immediate intervention. You could move them to a smaller hive (even a nucleus) or merge them with another colony. A merge does mean one of the queens has to be disposed of. Make sure it’s the inferior or oldest queen.

A **Marginal** colony is one appears to be doing ok despite having a small population. There is a laying queen, some brood and stores of pollen and honey. You may want to supplement the population with some frames of sealed brood and/or you may choose to supplement feeding with sugar syrup and/or pollen supplement.

SECTION 6

Frames with Bees	12	Drones	Low (<25) ☐	Ave (50+) ☐	High (>100) ☐
Frames with Brood	13	Brood Pattern	Solid ☐	Spotty ☐	
Eggs Yes ☐ No ☐	Larvae Pearly white ☐ Discoloured ☐ Yellowing ☐ Distorted ☐		Brood Cappings Uniform ☐ Chewed ☐ Pierced ☐ Sunken ☐		

12 To determine the number of **frames with bees**, Peer down the space between the frames and count the ‘full seams’ between the frames. Multiply the number by two because the bees you see are on the two opposing frames.

The number of **drones** in the hive can tell you a lot about the health of the colony. Very low numbers of drones indicates that the colony does not have enough resources to “afford” to have drones. An excessively high number of drones/drone brood indicates an imminent swarm, a failing queen or laying workers, depending on where the drone brood is located.

13 **Frames with Brood.** Refer to the previous page (section 3) to determine the size of the brood nest. In spring and summer, you want to see a large brood nest. As the weather cools, the brood nest starts shrinking.

A thriving colony will have a solid brood pattern (very few open cells in the brood frames). A spotty brood pattern is a warning sign that something is wrong. It could be a symptom of a disease or an invasive pest, or it could be a failing queen. Do not ignore a spotty brood pattern.

Eggs are always a good sign! It means you have a queen even if you have not been able to see her during the inspection. If eggs are present, a queen is present.

Most brood diseases affect the **larvae**. If the larvae is anything but pearly white and glistening, your hive is in strife and needs intervention. Make sure you know the symptoms for the various diseases that a hive can succumb to so that you choose the right corrective action. Some diseases must be reported to PirSA to avoid a biosecurity threat.

Brood cappings should be uniform and look like a carpet across the frame. If cappings have holes chewed into them, are sunken, appear greasy or there is an odour, you must intervene and diagnose the disease correctly, then take swift action, including mandatory reporting if required.

Plant Health Australia hosts a FREE, nationally recognised online course focused on hive health and best-practice bee biosecurity through its Biosecurity Online Training (BOLT) platform.

<https://honeybee.canopihr.com.au>

SECTION 7

Queen seen?	Y ☐	N ☐	Marked?	Y ☐	N ☐	Colour	14
Queen cups ☐	Queen cells ☐	Swarm cells ☐	Emergency ☐	Supersedure ☐			
Replace Queen	Y ☐	N ☐	Supplier	15			

It is not essential that you see your **queen** with every inspection. If you can see eggs, you know your queen is present. If she is marked, it is easier to see her.

14 The **international queen marking colour system** uses a 5-color/five year rotation. A small dot of coloured paint on the queen's thorax corresponding to the colour code instantly lets you know her age. Marking also helps confirm if your queen has been superseded.

The mnemonic “**Will You Raise Good Bees**” is an easy way to remember the colour code. The first letter of each word matches the colour Will = White, You = Yellow etc.

Years ending in 1 and 6 are White, those ending in 2 & 7 are Yellow and so on. (Refer to the end of this section for more information).

A **queen cup** is an extended beehive cell that resembles a teacup in shape. These cells are raised in readiness for rearing a new queen. It is a natural, healthy part of a hive and can be left untouched. Some beekeepers call them ‘practice cups’.

A **queen cell** is a special, oversized cell that honeybees build to raise a new queen. Queen cells are roughly the size and shape of a peanut shell, hanging vertically downward. Not all queen cells mean the same thing. The type of queen cell tells you what’s happening inside the colony.

Swarm cells are typically found along the bottom edges and margins of the comb, sometimes tucked along the sides of a frame. Finding multiple swarm cells with larvae inside is a strong signal that swarming is imminent. You can attempt a walk away split to try and save losing up to half your bees (and honey).

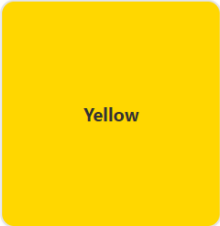
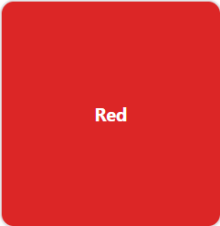
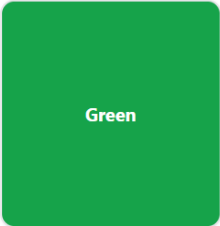
Emergency cells are raised from regular worker cells because the queen has suddenly died or been removed. Emergency cells are found anywhere on a frame and look more improvised than other queen cells because the bees have had no time to plan and execute a proper queen cell.

Supersedure cells are generally found centrally on the comb face and there will only be a few at most. Finding a supersedure cell means the colony has identified and solved its own queen problem and often requires no intervention at all from the beekeeper.

15 Sometimes it may be necessary to replace the queen in your hive. It helps to keep a record of the details, including where you obtained a new queen from.

International Queen Marking Color Code

The color system follows a simple 5-year cycle based on the last digit of the year.

				
White	Yellow	Red	Green	Blue
Ends in 1 or 6 2021, 2026	Ends in 2 or 7 2022, 2027	Ends in 3 or 8 2023, 2028	Ends in 4 or 9 2024, 2029	Ends in 5 or 0 2025, 2030

White: Years ending in 1 or 6

Yellow: Years ending in 2 or 7

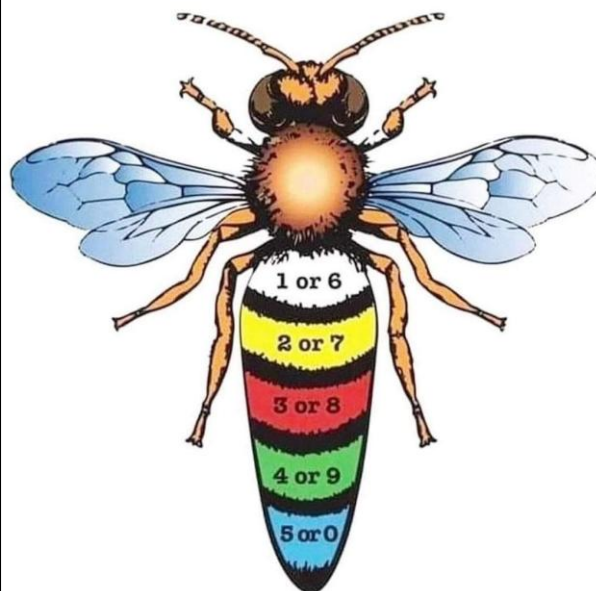
Red: Years ending in 3 or 8

Green: Years ending in 4 or 9

Blue: Years ending in 5 or 0

QUEEN COLOR CODE

Year Ends In:



- The international color code helps beekeepers track queen age at a glance.
- The 5-year cycle repeats, so colors recur every 5 years.
- Mark queens on the thorax with a small dot of paint or a numbered disc.
- Most queens are productive for 2-3 years, though some last longer.
- Marking also helps confirm your queen hasn't been superseded.

Courtesy of apiarytools.com

SECTION 8

Hive Manipulation

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Chequerboard/Pyramid Frames	☐	Replace Frames:	☐
Add /Remove 2 nd Brood Box	☐	Add/Remove Honey Super	☐
Add/Remove Queen Excluder	☐	Replace equipment:	☐
Merge Hive / Split Hive	☐	Harvest Honey:	☐
Feed Syrup 1:1 ☐ 2:1 ☐	☐	Feed Pollen Supplement	☐
Burr/Cloud comb removed	☐	Bottom Board Cleaned	☐

Hive manipulation is the single most valuable hive management practice to ensure maximum comfort and space for the bees.

16

Chequerboarding refers to manipulating frames in the HONEY SUPERS to break up the solid band of honey that is building in the hive. You do so by removing alternate frames of honey and replacing them with empty drawn comb or foundation. The removed frames of honey can go into a second super in the same position they were in the original box, e.g. 2, 4, 6, 8 and placing empty drawn comb or foundation in the other slots (1,3,5, 7, 9).

Pyramiding refers to manipulating frames in the BROOD BOX to prevent swarming. You do so by removing up to half the frames of brood. You then space the remaining frames of brood and insert drawn comb or foundation between them. The removed frames can be placed into a second brood box, but this time push them together in the centre of the box and fill the rest of the box with drawn comb or foundation frames. This effectively creates a pyramid shaped brood nest and is an effective swarm management technique. It must be repeated several times throughout spring and early summer.

The remaining options in the table are self-explanatory. In the Add/Remove rows, simply delete the one which is not applicable. If neither option was used, leave it blank.

If replacing frames, you can write which frames you replaced, e.g. #4, #7

If replacing equipment, record what equipment was replaced e.g. bottom board

If honey is harvested, you can record number of honey frames or number of honey supers removed.

Beekeepers generally refer to both methods described above as 'chequerboarding'. For clarity on the difference between chequerboarding to expand honey production and chequerboarding to avoid swarming in the brood box, I have used the two distinct descriptions. Suffice to say that the term 'chequerboarding' refers to frame manipulation for a deliberate outcome.

SECTION 9

Disease & Pests Observed			
Mould/Moisture ☐	Wax Moth ☐	Hive beetle ☐	EFB* ☐
Chalkbrood ☐	Nosema ☐	Varroa Mite* ☐	AFB* ☐
Ants ☐	Slugs ☐	Other:	

***Authorities must be notified if detected – contact PIRSA.beebiosecurity@sa.gov.au and/or 1800 084 881 Exotic Plant Pest Hotline**

Mould and moisture can build up in colder areas or if your hive does not get enough sunlight. It can be especially problematic in winter as the heat generated by the cluster creates condensation that rises to the top, cools as it hits the hive lid and the resulting moisture drips down onto the frames. Bees can manage the cold, but not cold and wet. One way to combat moisture dripping onto frames is to use a hive mat. Investigate other options to deal with mould and moisture if it is a problem in your hive, including vented lids.

Some pests and diseases are common in hives, and a strong, healthy colony can usually manage it by themselves.

Finding **wax moth** larvae is not uncommon, but they can wreak havoc if left to roam unchecked. If you spot crawling larvae, use your hive tool to squish them.

Hive beetle can be a problem, especially in weakened bee colonies. As with all pests and diseases, prevention is the best treatment. A strong colony with a thriving population will be able to chase out hive beetles to prevent an infestation. If you spot beetles scurrying in your hives, install beetle traps to give the bees a helping hand.

Chalkbrood is a fungal disease. A strong colony with good hygienic traits will remove the mummies and throw them out onto the landing board. However, if a hive is riddled with chalkbrood mummies, you will need to intervene to prevent colony collapse.

The more serious conditions **EFB, AFB** are notifiable diseases. **Varroa** is a notifiable pest. If found in your hive, you must notify the biosecurity team at PirSA. You can also contact the Exotic Plant Pest Hotline. Make sure you know how to identify these pests and diseases and ensure that you take the necessary precautions to treat the hive.

Ants are attracted to beehives because they follow the scent of the honey. Once again, a strong colony can manage them, but ants can cause your bees to abscond if they overrun a hive.

Other creatures like **slugs**, cockroaches, spiders and even lizards will sometimes take refuge in a hive, likely attracted by the warmth of the hive. These are usually harmless and are tolerated by the bees.

Make sure your beekeeping registration is up to date so that you regularly receive notifications from PirSA.

<https://pir.sa.gov.au/animal-management/animal-health/species/bees/beekeeper-registration>

SECTION 10

Test for Varroa Mite				
Brood Uncapping ☐	Observation:	17		
Alcohol Wash ☐	Soapy Wash ☐	Sugar Shake ☐	Mite Count per 300 bees:	18
Reported:				
Treatment:				

Varroa mite is the single greatest threat to honeybees worldwide. I monitor for varroa mite every four weeks, and once found, I will follow a treatment plan. Once infested, a hive will never be 100% rid of varroa mite, but proper management can ensure that your colony is able to flourish with minimal impact from the mite.

17 Brood uncapping is an effective monitoring tool. Varroa prefer to breed in drone brood, but in the absence of drone brood, they will enter worker brood cells. Using an uncapping fork, you can lift the developing bee from under the capping. Varroa mite will show up very clearly against the white pupae. Uncap about 100 cells if possible.

18 If you find varroa mite with brood uncapping, you must also do a varroa wash to determine the mite load per 300 bees. A half cup measure is approximately 300 bees.

An **Alcohol Wash** can be done using Isopropyl Alcohol or Methylated Spirits. You need 150ml of liquid per half cup measure of bees, and a receptacle that allows you to shake the bees in the liquid and observe any mite drop.

Another form of mite monitoring, called a **Soapy Wash** can be done using a low suds liquid soap. 1tsp in 150ml water is sufficient.

Sugar Shake is no longer recommended as a successful means of monitoring for mites.

Once you find mites in your hive, you must report it to authorities, and you must begin your treatment of choice.

Visit the PirSA website for current information about the outbreak of varroa mite in South Australia.

<https://pir.sa.gov.au/animal-management/animal-health/species/bees/varroa-mite>

The National Varroa Mite Management Program has ceased, but the website is still available at this stage. It contains a significant amount of information about varroa mite.

<https://www.varroa.org.au/nvmmp>

By observing and recording this information, you can draw conclusions that help you understand what is happening in your colonies and take corrective action.