

Note: in accordance with the National ND Management Plan 2013-2016, vaccination, monitoring and testing requirements vary between states and categories of birds

The following three tables show:

1. the vaccination programs (Table 1)
2. the serological targets for vaccination outcomes in each program, expressed as mean haemagglutination inhibition titres (Table 2)
3. the sampling protocols where sampling and testing are required to demonstrate that those targets have been reached (Table 3).

The information is provided by bird category (in rows) and jurisdiction (in columns).

In each table, ‘meat chicken’ includes off sex layers (cockerels) or meat chickens grown for meat and kept longer than 12 weeks. The titres need to stay at 2³ for the duration of their life. This may require repeated vaccination with live vaccine. If chickens are grown for longer than 24 weeks of age, the requirements are as per layers in each jurisdiction.

Table 1 Vaccination programs

	Age of birds at vaccination ¹	Tasmania, Western Australia	Queensland, South Australia	New South Wales, Victoria
Layer breeders	2-4 weeks, and	Live V4, and		
	12-18 weeks, or	Inactivated ND vaccine, or		Inactivated ND vaccine
	12-14 weeks and every 6 to 8 weeks thereafter	Live V4		Not permitted
Meat breeders	2-4 weeks, and	Live V4, and		
	12-18 weeks, or	Inactivated ND vaccine, or		
	12-18 weeks and every 6 to 8 weeks thereafter	Live V4		
Laying hens and pullets (grown in cages during the vaccination program)	2-4 weeks, and	Live V4, and		
	6-8 weeks, and	Live V4, and		
	10-14 weeks ² , or	Inactivated ND vaccine, or		Inactivated ND vaccine
	10-14 weeks and every 6 to 8 weeks thereafter	Live V4		Not permitted

¹ Additional vaccination may be permitted (for example, in day-olds).

² A gap of 4 -6 weeks between the last V4 and inactivated ND vaccine is the optimal interval. For example, to be able to vaccinate with inactivated ND vaccine at 10 wks of age, V4 should have been given no later than 6 weeks of age.

	Age of birds at vaccination ¹	Tasmania, Western Australia	Queensland, South Australia	New South Wales, Victoria
Laying hens and pullets (grown on litter/ ground during the vaccination program)	2-4 weeks ³ , and	Live V4, and		
	10-14 weeks ⁴ , or	Inactivated ND vaccine, or		Inactivated ND vaccine
	12-14 weeks and every 6 to 8 weeks thereafter	Live V4		Not permitted
Meat chickens	Day-old, or	Optional: Live V4 as coarse spray ⁵ , or		Live V4 as coarse spray ⁵ , or
	7-14 days	Optional: Live V4 in drinking water		Live V4 in drinking water

³ Guidance: In case of multi-age rearing of birds, it is recommended to vaccinate closer to 2 weeks.

⁴ If there is evidence of HI titres lower than 2³ prior to administration of inactivated vaccine, additional live V4 should be introduced between 6-8 weeks of age for subsequent flocks.

⁵ For two of the three available vaccines, this route is currently not a registered product label claim and therefore requires off-label use permission by a registered veterinarian who is supervising these flocks.

Table 2 Serological target for vaccination outcome

Please note that the definition of adequate titres (mean haemagglutination inhibition titres) as shown in this table does not automatically require sampling and testing to demonstrate those titres; the requirements for sampling and testing vary between states and vaccination programs and are detailed in Table 3.

	Tasmania, Western Australia	Queensland, South Australia	New South Wales, Victoria
	The following titres are defined as adequate:		
Layer breeders	A titre of 2 ³ at 16-18 weeks of age, with 66% or more of samples at or above 2 ³ .	A titre of 2 ³ for the duration of the life of the bird. Continuous vaccination with live V4 requires monitoring as per Table 3 and revaccination with V4 or inactivated ND vaccine if titres are below 2 ³ and 66% of the birds sampled do not have at least a titre of 2 ³ .	From four weeks after the first vaccination with V4, the titre of the flock is at least:
Meat breeders			(1) 2 ³ to 18 weeks of age; and (2) 2 ⁵ thereafter, with 66% or more of samples at or above 2 ⁵ .
Laying hens and pullets (grown in cages during the vaccination program)			From four weeks after the first vaccination with V4, the titre of the flock is at least:
Laying hens and pullets (grown on litter/ ground during the vaccination program)			(1): 2 ³ and (2) 2 ⁵ by 6 weeks post vaccination with inactivated ND vaccine, with 66% or more of samples at or above 2 ⁵ .
Meat chickens	Not applicable (vaccination optional)		By 35 days of age, the titre of the flock is at least 2 ³ , and at least 66% of the samples reach a titre of 2 ³ or higher.

Table 3 Sampling protocol

All serological sampling should be undertaken under veterinary supervision or a person approved by the CVO of the relevant state or territory in accordance with the approved sampling protocol.

On each occasion samples from a minimum of 15 birds should be tested to determine mean haemagglutination inhibition titres.

Although sampling and testing may not be required, records must still be kept to demonstrate during any audit that vaccination has taken place.

	Vaccination program	Tasmania, Western Australia	Queensland, South Australia	New South Wales, Victoria
Layer breeders	Live V4 and inactivated ND vaccine	Not required		
	Live V4 every 6-8 weeks	Not required.	Producers must be able to demonstrate a titre of 2 ³ or above in at least 66% of the sampled birds, at least 3 times, at point of lay, mid and late lay.	This vaccination program is not permitted in these states.
Meat breeders	Live V4 and inactivated ND vaccine	Not required		
	Live V4 every 6-8 weeks	Not required.	Producers must be able to demonstrate a titre of 2 ³ or above in at least 66% of the sampled birds, at least 3 times, at point of lay, mid and late lay.	Producers must be able to demonstrate a titre of 2 ⁵ or above in at least 66% of the sampled birds, at least 3 times, at point of lay, mid and late lay.
Laying hens and pullets (grown in cages during the vaccination program)	Live V4 and inactivated ND vaccine	Not required		
	Live V4 every 6-8 weeks	Not required.	Producers must be able to demonstrate a titre of 2 ³ or above in at least 66% of the	This vaccination program is not permitted in these states.

	Vaccination program	Tasmania, Western Australia	Queensland, South Australia	New South Wales, Victoria
			sampled birds, at least 3 times, at point of lay, mid and late lay.	
Laying hens and pullets (grown on litter/ ground during the vaccination program)	Live V4 and inactivated ND vaccine	Not required		
	Live V4 every 6-8 weeks	Not required.	Producers must be able to demonstrate a titre of 2 ³ or above in at least 66% of the sampled birds, at least 3 times, at point of lay, mid and late lay.	This vaccination program is not permitted in these states.
Meat chickens	Live V4	Not compulsory, to be conducted only if deemed necessary. If titres of 2 ³ by 35 days of age in 90% of sheds are not achieved, report the sampling results to the jurisdiction and review vaccination program and technique.		