



Animal Welfare Science  
Ministry for Primary Industries  
PO Box 2526  
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New Zealand

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By Email

## **Submission on behalf of the New Zealand Veterinary Association regarding changes to the Code of Welfare for Pigs**

The New Zealand Veterinary Association (NZVA) is the only membership organisation representing veterinarians in New Zealand. It supports members through leadership, education, standard setting, and wellbeing support.

### **Introduction**

The NZVA wants to be proud of our livestock sectors, including commercial pig farms. We can look back at our welfare record to date with some pride and share some of New Zealand's victories and achievements in creating a proactive and determined attitude to animal welfare, despite the substantial disadvantage of being a country with high grain and labour costs without any protective trade barriers or government financial support for agriculture.

The NZVA wants to speak with pride of our continued progressive attitude to animal welfare and how we have been able to further drive down sow confinement in New Zealand while preserving piglet welfare. As with all worthwhile progress, achieving this outcome can only occur with consultation, rigour, determination, and open dialogue and debate. The NZVA encourages the National Animal Welfare Advisory Committee (NAWAC) to engage with this when finalising the Code of Welfare for Pigs.

There are many areas in the draft Code that suggest the NAWAC needs guidance about the reality of working on commercial pig farms. The NZVA also has concerns for the small-scale and backyard pig sector, which is substantial in New Zealand, and which will find it difficult to comply with this draft. Monitoring and policing of this sector is a major challenge.

### **Economic Assessment and Impact of Code**

By 3 December 2015, all pig farms in New Zealand had to achieve zero confinement for the whole gestation period, a move that put New Zealand in a group of very few countries including the United Kingdom, Sweden, Norway, and Switzerland. This change cost the average 380-sow New Zealand pig farmer \$40–150K in capital expenditure (Capex). Some farmers built new gestation facilities that cost even more than this. Farmers learned to cope well with the change after adjusting feeding and management approaches, despite some having lower conception rates after the change. This led to more variable numbers of sows farrowing each week and, in some cases, the need to vary weaning age by a greater amount to maintain uniformity in pigs weaned per week or batch. The impact of this change on cost of production has been significant but relatively

minor with the adaptations made; in hindsight, the NZVA considers this change a success. The cost to industry for that change was many times smaller than the intended change proposed in this draft Code.

Some NZVA members work closely with pig farms and view their financial information. Their conclusion is that the Sapere model overestimates the profitability of New Zealand pig farms at profits of >\$1,000 per sow per year. NZVA members believe average profitability in a normal year is closer to \$650 per sow per year. Nonetheless the Sapere model provides a useful reference point. Assuming \$650 per sow per year before tax, most farms would incur debt servicing costs and tax in addition, leaving them with \$100–200K net profit per annum. This is similar to other New Zealand family businesses but, with a turnover of \$3.3 million, this business model is sensitive to minor movements in efficiency.

The Sapere model states that the 350-sow farm would have to spend approximately NZ\$2.5 million in Capex to comply with Farrowing Option B and Space Option A, after which their profitability will be more than halved. It also states that if they borrow the money, they will never pay it back. Conspicuous in its absence from the Sapere report is the outcome for Farrowing Option A and Space Option B. NZVA members extrapolate the cost of this option to be NZ\$4.3 million using the assumptions around building cost that Sapere most likely used. Banks do not like to finance Capex on pig farms for many reasons, including the fact that the buildings are highly specific and cannot be repurposed if the venture fails (which is almost certain with competing non-compliant imports). As such, farmers would generally have to source the money from other means if they chose to invest these sums to continue farming. The NZVA believes very few farmers would pursue such a financially naïve decision.

Analysing which parts of the Code create such high compliance costs, a minor contribution comes from the increase in piglet mortality. While farmers would find it confronting to move piglet mortality from 12 to 18% if they were forced to move to free farrowing, they would likely adapt by running more sows to maintain weaner output and by spending a moderate amount on expanding gestation facilities and refitting farrowing facilities. Most New Zealand farmers should survive that change alone.

The major costs of the draft Code come from the space requirements for farrowing pens and grower pigs. These requirements are higher than any other country in the world, including countries like Switzerland and Norway that protect and subsidise their farms and where a 50–100 sow farm is a viable family business. The space requirements are 18–180% higher than the Royal New Zealand Society for the Prevention of Cruelty to Animals (SPCA) standards that were issued in 2020. New Zealand farms are still being accredited against these standards, which pertain to deep litter systems that typically require more space than conventional finishing systems.

The NZVA is unclear what has led to this situation. There can be no debate that spending \$2.5–4.3 million on a business that makes \$100–200K after debt servicing is not a viable proposition for any type of business, even without halving the profit margin. According to the NAWAC, half of the NAWAC Committee was in favour of Farrowing Option A and Space Option B, which would cost NZ\$4.3 million to finance. This raises the following questions:

- Did these Committee members realise the compliance cost would be NZ\$4.3 million?
- Was the Committee aware of the cost implications of these unprecedented requests?

If the Committee was aware of these costs, the NZVA believes the NAWAC has not adequately considered the economic impact as the Act requires. If the Committee was not aware of these costs, the NZVA highlights the imperative for consultation through this process. If the NAWAC assumed the government would provide financial assistance or impose a level playing field for imported pork, this should be clearly stated in the NAWAC's economic assessment. Providing the pork industry with financial assistance or trade barriers based on welfare would set precedents for New Zealand's other, more valuable livestock sectors that may have severe economic repercussions for the New Zealand economy.

## Five Domains Assessment

The following comments have been made by a NZVA member with specialist interests and qualifications in animal welfare who is not directly involved in the pork industry:

It is unclear how the NAWAC came to the conclusions in their Five Domains Assessment.

It appears piglet welfare has not been fully considered in the farrowing system scenarios. The report states that piglets in all systems have the same likelihood of multiple impacts. In reality, the systems are very different, meaning the possibility of these impacts is also different. For example, there is a big difference in the possibility of hypothermia in a piglet born outside during winter versus a piglet born in a temperature-controlled environment inside with close monitoring by stockpeople.

In all the farrowing systems analysed, there is no mention of a system where the sow is crated for one or two days before farrowing and released four days after farrowing. This system is already in use overseas and allows the piglets' welfare needs to be met while reducing the time the sow is confined.

Several statements in the executive summary do not appear to reflect the body of the report. For example:

- the summary states "The negative impacts of exposure to adverse weather conditions on the affective state of pigs managed outdoors may require mitigation"; this contradicts Table 3 which states the likelihood of occurrence of long-term heating is the same for all systems.
- The rating system used states that the duration of the impact or enhancement was considered but this does not seem to be reflected in the tables.
- The graph on page 28 suggests there are no enhancements of moderate or high likelihood for piglets in temporary crating or the current systems. Surely being warm and fed without competition from the sow would be at least two enhancements available in these systems.
- The mating system graph on page 31 has some discrepancies around the heating/chilling ratings and the sow/sow riding injuries.

These are a few of the inconsistencies identified in this report. The supporting evidence seems to contradict the information in the tables in several instances. Overall, the data appears to have been made to fit the desired outcome. The NZVA recommends the report is peer-reviewed to ensure robust decision-making.

Yours sincerely,



Kevin Bryant  
Chief Executive Officer  
New Zealand Veterinary Association

## Answers to consultation questions

### Farrowing systems – animal welfare focus

#### Q1. Do you support Option A (Free Farrowing) or Option B (Temporary Crating)? Why / why not?

Please refer to Appendix 1 – NZVA Position Statement: Housing of lactating sows indoors.

The NZVA supports a modified version of Option B. Free farrowing systems and approaches have not yet progressed to a point where key aspects of piglet welfare (such as robust colostrum intake and all piglets having access to a functional teat) can be achieved with husbandry measures. While there is no question that free farrowing must be the desired goal (assuming sow and piglet welfare can be adequately balanced), the science is not yet able to provide a production system where both welfare needs can be met simultaneously.

The NZVA acknowledges the welfare conflict between a sow and her piglets. A short-term period of confinement for the sow has some adverse effects on her welfare and her affective state, yet it can improve the welfare of the piglets in the pen.

Temporary confinement allows the stockperson to apply advanced husbandry in the form of assisted suckling for weak piglets, split suckling or colostrum sharing, cross-fostering, shunt fostering, and fallback fostering. These are not easily done with free farrowing systems without compromising staff health and safety.

The NZVA acknowledges the above husbandry procedures cannot become requirements in the Code due to free farrowing and outdoor facilities, but believes piglets deserve the right to these husbandry measures as the differences in piglet mortality are evident in many trials. Typically, trials that do not show a substantial difference between free farrowing and confined systems are those with higher mortality rates where advanced husbandry has not been applied to either system.

The NZVA does not support the National Animal Welfare Advisory Committee's (NAWAC's) proposal to confine the sow after nest-building since it is not clear to stockpeople when nest-building is complete and when farrowing commences. Interfering with the sow during either activity could become dangerous to staff.

In combi-pens, sows lie facing the passageway (away from the feeder) when loose-housed, resulting in manure build-up in the feeder area. This causes hygienic and logistical issues, as clearing such manure before farrowing is not easy. In addition, getting into the pen to turn the sow around and confine her while small piglets are moving underneath her will cause substantial upset to the sow and could lead to piglet casualties.

The greatest insight into operating temporary confinement systems would be gained by:

- working with New Zealand farms that have fine-tuned temporary confinement systems
- talking to European farmers who have used temporary confinement systems for many years.

It is unfortunate that most trials published using these systems do not reflect their ability to achieve good piglet mortality rates. European farmers with many years of experience using combi-pens confine the sow one to three days before expected farrowing or when the sow starts to show imminent signs. They typically process the piglets (iron, coccidiostat, tails etc.) on day three after birth, then allow the litter to settle and loose the sow the following day. This method causes the least amount of piglet mortalities.

The NZVA's position statement proposes a maximum period of seven days confinement. It may be plausible to add another clause using the wording "no more than four days after farrowing" so that sows that farrow earlier than expected will not get confined after farrowing longer than four days.

The NZVA encourages the NAWAC to consider the position statement based on the lack of reliable pre-eminent signs of farrowing (such as milk let-down and restlessness), the normal distribution of gestation length, and the inability to predict when a sow will farrow.

The NZVA understands that nest-building during confinement is partly compromised but believes suitable manipulable material can still achieve many welfare and production benefits for piglet welfare.

The NZVA does not believe there is sufficient evidence to support a minimum standard of 6.5m<sup>2</sup> pens; combi-pens with a footprint of 5.4 – 5.8m<sup>2</sup> are used in Europe successfully using hyper-prolific genetics (Average Born Alive of ~18 with physically larger sows) which are not currently used in NZ.

A minimum standard should not be aspirational; it should be the minimum required to meet the Act. Farrowing houses are expensive as they create well-controlled and hygienic environments to meet the needs of both sow and piglet. The extra cost of creating a 6.5m<sup>2</sup> pen could contribute to greater demise of the local industry. Using existing farrowing channels that are 2.4m wide would mean much of the local industry could convert around 70% of their farrowing spaces.

There are multiple pressures currently facing the farming industry, including animal welfare, greenhouse gas emissions, environmental impact, water usage, and workplace health and safety. Larger farrowing pens would increase greenhouse gas emissions, which are directly proportional to the surface area of the manure pit. Manure systems need to have adequate flexibility in how they operate to manage multiple aspects. Manipulable material requirements need to be flexible to accommodate effluent systems (eg jute bags or shredded cardboard).

It is not always possible to maintain a separate dunging area from lying, nesting, and feeding areas. There are many factors that contribute to lying and dunging behaviour, including variations in temperature and humidity and where the sow perceives threats to her piglets. It is not uncommon for sows to dung in and near their feed troughs. European experience suggests the only way to maintain control over mastitis and piglet scour is by using fully slatted flooring with dedicated sow slats to improve physical and thermal comfort. The NZVA strongly supports this.

New Zealand pig farms typically having more staff per sow than overseas competitors (~100-150 sows per labour unit farrow to finish, compared to ~300 in Europe and North America). However, this difference is primarily due to greater automation on large farms overseas and does not allow any New Zealand farms to have constant supervision of farrowing. It is vital that systems still provide some protection for new-born piglets against crushing and hygiene challenges in case the sow farrows when staff are not present.

The NZVA believes a free farrowing system is a worthy goal, as current systems do not yet seem to be meeting the same standards for piglet mortality. While many New Zealand farrowing systems are fully up to date, those that are not could achieve superior piglet mortality rates and welfare using a modern combi-pen.

#### **Recommendations:**

- Identify the desired outcomes from a free farrowing system that will permit innovation in this area.
- Update the wording to include a maximum period of seven days confinement. It may be plausible to add another clause using the wording “no more than four days after farrowing” so that sows that farrow earlier than expected will not get confined after farrowing longer than four days.
- Remove the proposal to confine a sow after nest-building.
- Review the minimum standard that states pens must be 6.5m<sup>2</sup>.

#### **Q2. Would Option B (Temporary Crating) meet the minimum animal welfare requirements of the Act? Why / why not?**

The NZVA supports Option B and believes it meets the wording in the Act, which states that measures must be “appropriate to the species and circumstances in question.” There are many examples in

other codes of conduct where the NAWAC prioritise neonatal animal needs, and piglets should be no different.

**Recommendations:**

- Consider the duration and extent of any negative effects to all stock classes involved in temporary crating systems.

**Q3. Is there another option that could be considered? Please provide your reasoning and evidence that this alternative option would meet the minimum requirements of the Act.**

N/A

### **Mating stalls – animal welfare focus**

**Q4. Do you support the NAWAC proposal to limit the use of mating stalls? Why / why not?**

The NZVA supports limiting the use of mating stalls. Please refer to Appendix 3 – NZVA Position Statement: Sow housing at mating.

**Q5. Is there a different approach to managing mating that could be considered? Please provide your reasoning and evidence that this different approach would meet the minimum requirements of the Act.**

The NZVA is not currently aware of a suitable alternative to manage mating.

### **Additional question - Collective effect of changes in sow confinement**

**Add: Farrowing and mating**

The NZVA believes it is premature for the NAWAC to be firmly prescriptive about lactating and weaned sow housing. Greater knowledge and experience will be gained as other countries use these systems more.

### **Behaviour – animal welfare focus**

**Q6. Do you support the proposal to provide access to materials that can be manipulated? Why / why not?**

The NZVA supports the proposal to provide access to manipulable materials, provided the options are compatible with existing effluent systems. New Zealand is not a key grain-growing country, which means products like straw are not available in large enough quantities to provide to all pig farms in the country. With current fertiliser prices, some grain farmers are choosing to retain their straw to return the nutrients to the soil. Farmers can be inventive when required but there needs to be some flexibility. The NZVA supports the NAWAC's wording.

**Q7. Is there a different approach to providing for the expression of normal behaviours that could be considered? Please provide your reasoning and evidence that this different approach would meet the minimum requirements of the Act.**

N/A



## Space for grower pigs – animal welfare focus

### **Q8. Do you support Option A (k value of 0.047) or Option B (k value of 0.072)? Why / why not?**

Please refer to Appendix 2 – NZVA Position Statement: Housing of growing pigs (post-weaning).

The NZVA does not support either of the proposed options. Both options are higher than any other country in the world requires or has indicated requiring in the future.

Space is one of several criteria that impact pig health and wellbeing. More important factors include thermal management (either via deep litter or automated control), hygiene, air quality, humidity, and enrichment.

Pig grower space currently costs over \$1,000 per m<sup>2</sup> to construct, which means the proposed space allocations would force farmers to move and mix pigs more times. Research shows that moving or mixing pigs increase stress and aggression, resulting in negative outcomes for the animals. The most modern pig housing generally provides for only one of two stages of a pig's lifetime, which allows for minimal disease while keeping the pigs at a k value far above 0.034 (where most studies show that welfare indicators start to deteriorate) for most of the pig's life.

Expecting a k value of 0.047 at the end of a period would force farmers to move their pigs more often to comply, and/or have too much space at the start of the production phase. This could lead to inability to manage air quality and temperature regulation, since minimum air exchanges to maintain air quality would mean inability to maintain temperature inside a pig building. Most growing pigs in New Zealand are housed in indoor slatted facilities with automated ventilation and temperature control; any changes should be focused primarily on these systems.

A k value of 0.047 represents the space required for all pigs to lie in lateral recumbency with a rectangle drawn around each pig that does not overlap with the rectangle of any other pigs. Even in hot weather, pigs do not lie in this way. On many New Zealand pig farms, the computer increases the ventilation rate to increase air speed at pig level or activates high speed stirrer fans that provide cooling at pig level.

Less than 30% of pigs in New Zealand are reared in deep litter systems. When these systems provide excess space, newly weaned piglets often create a dunging area closer to their lying area rather than walking all the way to the designated dunging area. It is difficult to stop a group of pigs once they start dunging in a certain area, which is often along a side wall or the edge of a feed pad. In either case the inappropriate dunging pattern means that the lying area cannot be kept separate in the pen and dunging behaviour becomes increasingly haphazard.

There is a finite (and shrinking) amount of straw available to pig farms in New Zealand. Providing more space means more straw or sawdust will be used per pig, so fewer pigs will be able to be housed on straw. Additional space would also increase greenhouse gas emissions from pig farms (Moustsen 2021), which would become an additional financial burden to New Zealand pig farmers. The cost of changing the infrastructure to accommodate the space requirements would cause many New Zealand pork producers to go out of business.

#### **Recommendations:**

- Conduct research trials within New Zealand farming systems to model the impact these changes will have on resources, disease management, welfare outcomes, and the environment.

## Space for grower pigs - animal welfare focus

### **Q9. Do the two options proposed by NAWAC around spacing for grower and weaner pigs) meet the minimum requirements of the Act? Why / why not?**

The NZVA believes the proposed options meet the minimum requirements, but other standards also meet the requirements. Both proposed options would compromise temperature and air quality in certain situations on certain farms – possibly to the point of breaching the minimum standard requiring newly weaned pigs to be kept warm enough. Most newly weaned pigs are reared in automated fully slatted rooms.

## Space for grower pigs – animal welfare focus

**Q10. Is there another option (around spacing for grower and weaner pigs) that could be considered? Please provide your reasoning and evidence that this alternative option would meet the minimum requirements of the Act.**

Please refer to Appendix 2 – NZVA Position Statement: Housing of growing pigs (post-weaning).

## Code update: Weaning – animal welfare focus

**Q11. Do you support this proposal (weaning at 28 days)? Why / why not?**

In a week's worth of weaned pigs, there is often a range of 10 days or more when it comes to weaning age. As such, the wording of the proposed standard would mean an actual weaning age of around 35 days to allow for the minimum age to be met.

The NAWAC needs to consider the following standard practice on farms:

- Most farrowing sheds on New Zealand farms are operated in a continuous 'snake' as neighbouring farrowing pens are filled in order. These pens are loaded in expected farrowing order; often gilts are loaded next to each other to assist farrowing management and differential feeding if practised.
- Sometimes gilt mating dates are not certain so farms will use an estimated farrowing date which is not always correct.
- Gestation length follows a normal distribution curve from 111 to 120 days. While most sows farrow on day 115 or 116, some will not, meaning gestation length cannot be predicted with confidence. Farrowing induction is only available on certain farms.
- Sows tend to concentrate farrowing on the same day as weaning (eg Thursday weaning, Monday mating, Thursday or Friday farrowing) but this can spread over the whole week. Gilts can be mated on any day of the week and therefore farrow on any day of the week, but they are generally loaded into the farrowing department once a week. Sows loaded in the same week can farrow over a period of more than a week due to the variation in gestation length, but they still need to be weaned together to maintain hygiene and other standards in farrowing operations.
- Despite farrowing throughout the week, weaning usually occurs once a week or every two to four weeks on batch farrowing farms. On large overseas farms with more than 2,000 sows, weaning can occur twice a week or more; this is not practised in New Zealand due to smaller farm sizes.
- Sometimes a farmer needs to wean a sow early due to illness or excessive weight loss during lactation. When this occurs and there are no suitable sows available to foster onto, the piglets need to be weaned early.
- When the number of live piglets exceeds teat numbers in an individual week, the farm does a shunt foster to ensure every piglet has ownership of a functional teat. Roughly 2-5% of litters will be shunted in New Zealand. In some countries, such as Denmark, closer to 30% pigs are shunted. The final stage of a shunt foster is to select a sow at around three weeks of lactation with a larger than average litter; the piglets are then weaned so the sow can accept the piglets shunted forward from a seven to 10-day farrowed sow.
- If weaning was done based on farrowing day, then islands of farrowing pens would be left as certain pens vacated the 'snake'. This would mean the sows and piglets in the remaining pens would need to wait another week before weaning since water-blasting and disinfecting the neighbouring pens would chill and stress the animals. Moving them to the end of the 'snake'



would not allow enough time to clean, dry, and disinfect the pen and would likely chill and stress the neighbouring litter.

- Milk production peaks at around 21 days after birth, while feed intake increases steadily and plateaus eight to 12 days after farrowing. After approximately 26 days of lactation, most older parity sows become anabolic. This encourages modern sows to come on heat five days later during lactation. If five-week weaning was practised, then feed intake in late lactation would need to be restricted and controlled to prevent lactational oestrus. Since most farms feed lactating sows ad lib, this would not be practical and would likely lead to some sows losing excessive weight during the five-week lactation.
- Outdoor sows are more prone to lactational oestrus issues since piglets visit multiple huts and suckle from multiple sows when they are around 21 days old. Research shows that five-week weaned pigs eat three times the pre-weaning creep feed per lifetime compared to four-week weaned pigs. This disrupted milk demand and increasing creep feed intake leads to a high incidence of lactational oestrus, especially in winter. Even with four-week weaning, many outdoor farms have periods in winter when 30-50% of sows do not cycle after weaning; this means the farms do not meet batch mating targets and either wean too many or too few pigs for the post-wean facilities, which are both undesirable from a welfare perspective. With five-week weaning, it would become impossible to do and the 43% of outdoor sows in New Zealand would refuse to wean at five weeks. Many farms have moved from four-week weaning to three-week weaning because of this issue.
- Five-week weaning usually ranges from 28 to 39 days, with an average weaning age of around 33 days. Four-week weaning can range from 22 to 33 days, with an average weaning age of around 26 days. Three-week weaning can range from 18 to 25 days, with an average weaning age of around 20 days.
- Some farms batch farrow to achieve 'all in, all out' by grower building or area. This makes a huge difference to the health and wellbeing of growing pigs as they are not exposed to diseases from older pigs. Four-week batch farrowing farms wean at three weeks to get five evenly spaced batches within a 20-week cycle (16 weeks gestation + three weeks lactation + one week wean-service). Three-week batch farrowing farms wean at around four weeks to achieve a 21-week cycle, so they get seven even batches of sows through the cycle. Five-week weaning has a 22-week cycle which is not compatible with three- or four-week batching (the two most common systems used in New Zealand).
- Parity, health, genetics, body size, feeding system, litter size, and many other factors determine whether a sow is anabolic (which leads to lactational oestrus) or excessively catabolic (which requires her to be weaned earlier for her own welfare). An individual litter may chew the sow's teats and vulva, which requires early weaning for the sow's sake. Farmers apply their practical reasoning and sound practice of weaning individual sows at the most appropriate time dictated by a range of circumstances.
- Many farms in New Zealand wean at an average age of 19–20 days. The NZVA is not aware of any evidence that the welfare of these piglets is compromised, provided the post-weaning diet is complex enough and has suitable milk powders and the post-weaning temperature and hygiene is suitable. Conversely, the NZVA is aware of some pig farms where five-week weaning is unquestionably too early to match the post-weaning diets and accommodation, and where six- to eight-week weaning is most appropriate. A one-size-fits-all regulation for weaning age is inappropriate for pig welfare in New Zealand's diverse farming systems.
- If a calf can be weaned onto a milk diet at one-day, then a piglet can be weaned onto a suitable milk-containing diet with a well-controlled environment at 18 days.

#### **Additional points:**

- The proposal states that the minimum weaning age in the Code is currently 21 days. Although this is mentioned as an example indicator, the NZVA could not find any minimum standard that states this.
- The 2018 code requires a maximum weaning age of four weeks if the sow is confined. It is not clear why the NAWAC have proposed changing this to a minimum of four weeks.
- Farms in the EU are expected to wean at a minimum of 21 days. The average piglet weaned would comfortably conform with this but many individual piglets in the EU are weaned before 21 days. The EU does not have the same punitive force behind its welfare laws as New Zealand which is why many EU farming laws are not adhered to.

## Weaning – animal welfare focus

**Q12. Is there a different approach to weaning age that could be considered? Please provide your reasoning and evidence that this different approach would meet the minimum requirements of the Act.**

The NZVA believes that weaning weight is more important than weaning age. In Europe, there is a minimum weaning age of 21 days (28 days minus one week with caveats) due to low weaning weights and the high percentage of litters that are shunt fostered.

The NZVA believes the most appropriate minimum standard would be for post-weaning diets to include sufficient complexity and milk components to match the piglet weaning age and weight. This, along with post-weaning accommodation, hygiene, and temperature control, must ensure that piglets maintain adequate body condition and health and survival after weaning.

The NZVA believes that minimum standards must allow farmers to apply logical decisions on when to wean individual sows and litters. Ideally, these would outline the outcomes that need to be avoided, such as:

- post-weaning diets
- accommodation not sufficiently sophisticated to match weaning weights
- too many weaned pigs failing to thrive after weaning as indicated by poor body condition and/or morbidity and mortality rates
- excessive sow lactation weight loss.

Although Europe has a minimum weaning age of 21 days, farms in the EU have genotypes with larger litter sizes than New Zealand. This means weaning weights are far lower (typically 6kg at 24 days), with some litters weaned at 21 days and others up to 33 days.

On many farms, holding back the lightest 5-10% of piglets at weaning onto a cull or nurse sow is good practice to ensure all weaned pigs are mature enough to cope after weaning. The NZVA believes this would be an appropriate recommended best practice.

### **Recommendations:**

- Change the minimum standard to: *“Post-weaning diets must include sufficient complexity and milk components to match the piglet weaning age and weight. This, along with post-weaning accommodation, hygiene, and temperature control, must ensure that piglets maintain adequate body condition and health and survival after weaning.”*

## Stockpersonship – animal welfare focus

**Q13. Do you support this proposal (on stockpersonship)? Why / why not?**

The NZVA believes this is a worthy aspiration and that using the word “should” means that good farmers or staff that have had no formal training can still operate.

**Q14. Is a different approach required?**

N/A

## Feed – animal welfare focus

### **New Zealand Veterinary Association**

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**Q15. Do you support this proposal on feed? Why / why not?**

The NZVA supports the proposal on feed but is concerned about how bulky material in a restricted diet will be measured. Barley is currently not available in some parts of New Zealand and suitable fibre sources are in short supply. Fat is a slow energy release nutrient.

Sometimes farmers must find other ways of satisfying restricted gestating sows and these alternatives can contribute to the sow's fertility. Sows are adaptable to different feeding regimes and can regulate blood sugar levels and gut activity. Studies on interval feeding (feeding three days a week) show this, however the NZVA does not support interval feeding.

The NZVA supports the current standard practice of once daily checks on feeding systems. It is not practical to carry out 12-hourly checks with an eight-hour working day.

**Recommendations:**

- Change the wording to "should" rather than "must".

**Q16. Is a different approach required?**

N/A

### Air Quality – animal welfare focus

**Q17. Do you support this proposal on air quality?**

The NZVA supports the proposal on air quality.

**Q18. Is a different approach required?**

N/A

### Mixing Pigs – animal welfare focus

**Q19. Do you support this proposal on mixing pigs? Why / why not?**

The NZVA supports the proposal on mixing pigs but is concerned the dramatic increase in space allowance would drive many New Zealand farmers to move and mix more frequently.

Providing extra space, structures, and barriers is not achievable in many pens and is often of little benefit. Two pigs that are unknown to each other would spend a good period fighting regardless of the obstacles in their way.

Flight distance is relevant with mixing pigs, but farmers cannot suddenly enlarge their pens to mix two groups; occasionally mixing is unavoidable. Mixing and fighting stress often settle sooner in smaller groups in smaller pens.

**Q20. Is there a different approach to mixing pigs that could be considered? Please provide your reasoning and evidence that this different approach would meet the minimum requirements of the Act.**

N/A

## Tail Docking – animal welfare focus

### Q21. Do you support this proposal on tail docking? Why / why not?

The NZVA is concerned that outdoor pig farms or farms with straw bedding will not be able to use hot iron cautery due to the associated fire and safety risk. Most indoor farmers use this now and the NZVA does not object to the NAWAC encouraging more farmers to do so.

## Welfare Assurance System – animal welfare focus

### Q23. Do you support this proposal on a Welfare Assurance System for pigs? Why / why not?

The NZVA supports the intention behind this proposal but does not believe it is feasible to get every pig farm of all shapes, sizes, and markets to be part of a Welfare Assurance System. Any attempts to enforce it will likely result in sham programmes being created. Since over 90% of commercial pig farms in New Zealand are accredited under the current industry program, this ideal has largely been achieved in the commercial sector.

## General Questions on the Code - animal welfare focus

### Q25. Do you agree that the minimum standards in this Code are the minimum necessary to ensure that the physical, health, and behavioural needs of pigs will be met? For example, do the minimum standards reflect good practice (not just current practice), current scientific knowledge and available technology? If not, what alternative(s) do you suggest? Please state your reasons.

New Zealand pig farmers currently have several minimum standards that conflict with each other on commercial farms, meaning farmers must occasionally choose between which standard to breach.

It is important the NAWAC applies feasibility assessments to such controversial minimum standards. This includes consulting individual farmers and industry support people so the minimum standards are written with a thorough understanding of the realities of a commercial pig farm.

The NAWAC's Guidelines for Writing Codes of Welfare (2009) state the desired outcome should be described in preference to specific prescriptive measures with cut-off values that would only be relevant in a certain set of circumstances.

#### **Recommendations:**

- Conduct feasibility assessments and consult with farmers and industry support people to ensure the minimum standards are written with a thorough understanding of the realities of a commercial pig farm.

## General Questions on the Code – animal welfare focus

### Q26. Do you agree the example indicators given in this Code are appropriate to describe how to measure or assess the achievement of the intended outcome of the minimum standards? If not, what alternative(s) do you suggest? Please state your reasons.

The NZVA has identified two example indicators that it considers inappropriate.

The example indicator requiring most of the flooring in the nest area to be solid does not allow for moisture drainage. If moisture is excessive, the sow would be forced to lie on a wet surface which

would increase her risk for mastitis. It is not necessary to require solid floors if substrates other than straw are permitted, as the current wording allows.

The example indicator requiring an unobstructed area behind the sow when farrowing does not account for sows that are not confined during farrowing. Farrowing onset cannot be accurately predicted, and the sow may choose to lie with her back end against an object or wall that impedes the exit of piglets. The NZVA's assessment of the five domains assessment done by the NAWAC is that :

**Recommendations:**

- Remove the example indicator requiring the majority of flooring in the nest area to be solid.
- Remove the example indicator requiring an unobstructed area behind the sow when farrowing.

## General Questions on the Code – animal welfare focus

**Q27. Do you agree that the recommendations for best practice in this Code are appropriate? If not, what alternatives do you suggest? Please state your reasons.**

The NZVA does not believe all the recommendations are feasible in certain circumstances. Guidance should be sought from industry leaders as to the feasibility of proposed minimum standards and recommended best practices to ensure proposals are practical and can provide the intended welfare outcomes.

**Recommendations:**

- Review the feasibility of the proposed minimum standards and recommended best practices with industry leaders.

## General Questions on the Code – animal welfare focus

**Q28. Do you have anything further you wish to say on the Code from an animal welfare perspective?**

The NZVA questions whether desired outcomes should be created for the treatment or handling of compromised pigs. This is a complex subject but one that could improve the welfare of individual compromised pigs on certain farms. This is an area where it takes time to change facilities and culture so some guidance for recommended best practice could be valuable as a starting point.

## Proposed regulations: Criteria (MPI – practicality, efficiency and economic outcomes focus)

**Q29. Do you agree with MPI's choice of criteria for whether a regulation is needed (practicality, efficiency and economic impact)? Why or why not?**

The NZVA does not support a regulation around weaning age for reasons described above. There are many interconnected factors that determine the best weaning age on each farm for pig health and welfare. The NAWAC must understand these before MPI considers regulating this area.

The NZVA does not support the increased space requirements proposed since they are not based on sound science or a logical understanding of pig farming and the potential negative consequences.

Manipulable material for all farrowing sows would only be feasible if the material includes a range of options; most New Zealand farms cannot handle straw in farrowing sheds without major consequences. In most cases, creating straw-friendly effluent systems would increase greenhouse gas emissions and require reconstruction of the farm.

**Q30. Has MPI missed any other criteria that could help meet the overall objectives?**

MPI needs to calculate fair and reasonable transition times for each proposed change. It is unacceptable to not consider the findings of the independent economic analysis. This would shut down the local industry, resulting in a market of only non-compliant imports

**Recommendations:**

- Calculate fair and reasonable transition times for each proposed change.

**Proposed regulations: Farrowing (MPI – practicality, efficiency and economic outcomes focus)**

**Q31. Do you agree with NAWAC that a regulation is needed to implement either Option A or Option B? Why / why not?**

The NZVA does not believe such prescriptive standards should be regulations. Many backyard and intermediate sized pig operations would not comply and MPI cannot fairly determine when to apply the law to a regulation. Please refer to Q1 for more detail.

**Proposed regulations: Farrowing (MPI – practicality, efficiency and economic outcomes focus)**

**Q32. Do you agree with MPI's initial analysis on farrowing stalls in Appendix Three? Why / why not?**

The NZVA requests on-farm research trials to investigate the feasibility of the proposed changes in a standard New Zealand farming situation. Not every sow will follow the expected sequence of events before farrowing. The perils of trying to turn around and confine a sow after she has farrowed is a health and safety risk to both staff and animals. Practicality must be a priority if compliance is mandatory.

**Recommendations:**

- Conduct on-farm research trials to determine the feasibility of the proposed changes.

**Proposed regulations: Mating stalls (MPI – practicality, efficiency and economic outcomes focus)**

**Q33. Do you agree with NAWAC, that a regulation is needed to implement this proposed change to the Code? Why / why not?**

The NZVA supports a regulation that allows confinement of a sow for up to four hours at a time for specific tasks, such as treatment or artificial insemination which can take this long in larger herds or batch farrowing herds.

**Proposed regulations: Mating stalls (MPI – practicality, efficiency and economic outcomes focus)**

**Q34. Do you agree with MPI's initial analysis on mating stalls in Appendix Three? Why / why not?**

The NZVA agrees with MPI's initial analysis on mating stalls.



## Proposed regulations: Nesting material (MPI – practicality, efficiency and economic outcomes focus)

**Q35. Do you agree with NAWAC, that a regulation is needed to implement this proposed change to the Code? Why / why not?**

The NZVA supports a regulation around manipulable material but does not agree that all farms constructed after 2010 will be able to deal with difficult materials such as straw. The 2005 Code did not describe which types of manipulable material to use and therefore did not ensure certain types of drainage were implemented. Farmers would need flexibility about the types of manipulable material used, including options such as jute sacks, shredded cardboard, and shredded paper. Straw is not currently available in all parts of New Zealand.

**Q36. Do you agree with MPI's initial analysis on nesting material in Appendix Three? Why / why not?**

The NZVA does not agree with the initial analysis on nesting material. The specific manipulable material to be used must be considered using industry expertise to identify materials that would be feasible in all situations.

**Recommendations:**

- Consult experts in the pig farming industry to identify manipulable materials that would be feasible in all situations.

**Q37. How long a transition period would you need to implement this proposed change to the Code? Please provide the reasons for your answer.**

The length of a transition period depends on which changes are finally agreed upon.

## Proposed regulations: Minimum space for weaner and grower pigs (MPI – practicality, efficiency and economic outcomes focus)

**Q38. Do you agree with NAWAC that a regulation is needed to implement either Option A or Option B? Why / why not?**

There is currently a regulation around space so the NZVA assumes there will be one in future. However, the NZVA does not support the proposals in the draft Code as they are not appropriate for optimal animal welfare.

**Q39. Do you agree with MPI's initial analysis on minimum space for weaner and grower pigs in Appendix Three? Why / why not?**

Please refer to Appendix 2 – NZVA Position Statement: Housing of growing pigs (post-weaning).

The NZVA is concerned that the Sapere economic assessment underestimates the cost of the proposed changes for the following reasons:

- Building costs have increased significantly since the estimate was completed a year ago.
- The assessment assumed that grower herds would be down-sized due to elevated piglet mortality.
- The environmental and greenhouse gas footprint of New Zealand pig farms would increase as the proposals would worsen FCR cost.

**Q40. How long a transition period would you need to implement Option A and Option B? Please provide the reasons for your answer.**

The NZVA does not support the change.

**Recommendations:**

- Seek advice from economists and farming groups about practical and sustainable improvements.

**Proposed regulations: Weaning at 28 days (MPI – practicality, efficiency and economic outcomes focus)**

**Q41. Do you agree with NAWAC that a regulation is needed to implement this proposed change to the Code? Why / why not?**

The NZVA does not believe a regulation around weaning age is appropriate, as the system is not able to wean each piglet on a specific day. The value of the Code would be eroded since farmers would be unable to comply with the regulation due to it sitting so far outside of modern practices.

**Q42. Do you agree with MPI's initial analysis on weaning at 28 days in Appendix Three? Why / why not?**

The NZVA does not agree with the initial analysis on weaning at 28 days, as this is a misunderstanding of the system. When practically applied to farming systems, a 28-day minimum weaning date results in weaning at five weeks.

**Q43. How long a transition period would you need to implement this proposed change to the Code? Please provide the reasons with your answer.**

N/A

**Proposed regulations: Transition period – grower space, weaning age and changing slurry systems (MPI – practicality, efficiency and economic outcomes focus)**

**Q44. What is the timeframe that would be required for farmers in order to meet higher standards of animal welfare proposed for an amended Code of Welfare?**

The first step is to finalise options that will optimise animal welfare for pigs in New Zealand. The current draft Code falls far short of this, making any discussion around transition times spurious.

**Q45. Is there an alternative option available to enable farmers to better transition to the new regulatory requirements?**

Farmers need a Code of Welfare that focuses on practical, achievable, and progressive movement towards increased welfare. Implementing industry-wide changes that require unsustainable economic inputs over a short period is not achievable. The NZVA supports the advancement of welfare through technology and practices that improve both welfare and practical farming systems. The NZVA believes there is a more sensible rate of change that could be considered.

**Q46. What transition support would be useful for ensuring farmers can meet higher standards of animal welfare proposed for an amended Code of Welfare?**

For a Code of Welfare to be valuable to the public, farmers, and animals, it must be applicable, achievable, and functional. If industry-wide changes of farming systems are deemed to be in the best interest of the public, farmers, and animals, then the government would need to provide financial support to New Zealand pig farmers. Without financial support to implement change, the Code can no longer be valuable to the public, farmers, or animals.

**Proposed regulations: Completeness of proposed regulations (MPI – practicality, efficiency and economic outcomes focus)**

**Q47. Do you consider that any of the other minimum standards require regulations? Please provide reasons for any proposals. If possible, please also include a comparison of your proposals against the practicality, efficient and economic criteria in section 4.4.3.**

The NZVA does not believe any other minimum standards require regulations.

**Proposed regulations: Types of systems (MPI – economic and financial implications)**

**Q48. Sapere undertook an assessment of the SWAP farrowing system. Are there any other systems available besides the one identified in the report? If so, what are they and can they fulfil the requirements of the Act?**

The NZVA believes it is too early to choose a narrow spectrum of options since discovery and assessment in this area is ongoing.

**Q49. How much would it cost for you to install the SWAP system? What would the ongoing additional costs of using this system be for your enterprise?**

The NZVA cannot answer this question with accuracy. Pig building costs for farrowing sheds are currently well above \$1,000 per square metre.

**Proposed regulations: Transition periods (MPI – economic and financial implications)**

**Q50. Does the Sapere report identify all relevant costs of transitioning to alternative farrowing and mating systems? If not, please describe any other relevant costs.**

The Sapere report suggests current profitability is over \$1,000 per sow per year. This is a vast overestimate, and it is unlikely that a farm in New Zealand could make this much money this year. The buildings costs in the report are a year out of date and have increased by 15–25% since Sapere derived their initial figure. The Sapere analysis assumes that the number of pigs weaned per week would decrease as piglet mortality increases. In reality, farmers would increase the breeding herd in an attempt to produce the same number of slaughter animals. As such, building costs would be higher than shown in the report.

**Q51. The report identifies that an average 350 sow farmer would need 19 years to transition to the draft proposals. Do you think this is an accurate reflection of resource implications, viability and costs that farmers would face?**

The Sapere report is not accurate and should be updated to current building costs. It also need to be peer-reviewed against current industry performance.

**Q52. How much of a transition period would you need to implement the proposed regulations on grower space, weaning age and changing slurry systems? Why?**

N/A

**Q53. What are the implications of the proposed regulations for your farm? What are the implications for the industry?**

New Zealand pig farmers are currently held to higher standards than imported pork is produced under, while also having some of the highest grain costs in the world. Increasing this gap would result in farmers exiting the industry or reducing staff numbers to the bare minimum and struggling to meet basic needs of the animals. Exhausted, overworked people lose empathy for the people and the animals around them; they also lose their own quality of life and undergo consequences such as divorce, illness, or suicide.

Sectors that support the pork industry, including transport, grain production, nutrition, veterinary, and slaughtering, will also suffer. It is unlikely the government believes these outcomes are positive changes for the sector.

The only option is a feasible and logical Code created in consultation with stakeholders. One round of public feedback on a draft Code proposing industry wide changes is not sufficient consultation. Limiting public feedback contradicts the NAWAC's Guidelines to Writing Code of Welfare which states, *"Under the Animal Welfare Act, people preparing a code of welfare must consult with representatives of persons likely to be affected by the code before submitting it to NAWAC."*

**Recommendations:**

- Open the Code for two rounds of public consultation, in line with other proposed codes such as the Code of Welfare for Dairy Cattle.

**Proposed regulations: Other changes to the code (MPI – economic and financial implications)**

**Q53. What are the implications of the remaining proposed changes to the Code? For example, what would the costs be to you of providing manipulable material? What would it cost you to address hunger in pigs fed a restricted diet?**

The NZVA has not calculated these costs.

**Proposed regulations: General comments (MPI – economic and financial implications)**

**Q55. Do you see any barriers to the implementation of the proposed Code? If so, what are they and how might they be resolved?**

Barriers to implementing this Code include farmers being unable to afford the financial implications of industry- and system-wide changes. Farmers who prioritise animal welfare may not adhere to proposals that worsen animal welfare outcomes. Imported pork does not have to comply with these standards, which are tougher economically than any other country in the world including countries that protect and subsidise farmers.

## Proposed regulations: General comments (MPI – economic and financial implications)

**Q56. What benefits do you see from having this proposed Code? Benefits may include, for example, increased certainty about animal welfare requirements.**

The NZVA strongly supports codes of welfare that improve animal welfare and the sustainability of farming. This would include a strategy for transitioning to farrowing systems that reduce sow confinement, provide more space for sow and litter, and reduce stress on growing pigs.

This does not simply mean multiplying the space; it means understanding all the factors that lead to healthy, happy, and productive grower pigs, and supporting the industry through the transition. The NAWAC members lack relevant experience in commercial pig farming which has led to requirements far tougher than any other country in the world. It would only be logical to open this Code for another round of consultation on key intended changes.

The NZVA would like to speak with pride about how progressive our animal welfare is and what we have learned on the journey to a modern, forward-thinking pork industry. Removing the local industry and replacing it with imports (as this Code will do) would undermine New Zealand's reputation, resulting in a slower progression in improved worldwide welfare outcomes.

## Proposed regulations: General comments (MPI – economic and financial implications)

**Q57. What broader impacts do you think this proposed Code could have on New Zealand society, the economy and the environment?**

The NZVA believes the proposed Code would lead to increased food miles to bring pork to New Zealand. The Code would support other countries' economies more than our own.

Animal welfare would decrease due to imported pork replacing local production with no expectations placed on exporters. New Zealand would not be seen as a leader in animal welfare if the Code causes an entire industry to close while we continue to purchase the same products from overseas suppliers with lower standards.

Families could lose their livelihoods and local communities could lose the economies generated from the businesses.

## Proposed regulations: General comments (MPI – economic and financial implications)

**Q58. How do you think consumers could be made aware of the benefits of purchasing pork produced under improved animal welfare conditions?**

Unfortunately, this information lies with retail and wholesale within the pork industry. Most consumers purchase based on price and would not pay a premium for animal welfare. Those who do pay a premium for higher welfare (or perceived higher welfare) would support a small but relatively inefficient pork production sector.

## Proposed regulations: General comments (MPI – economic and financial implications)

**Q59. Do you have any other comments you would like to make?**

The NZVA recommends this draft is given another round of public consultation. Changes that impact key factors for farming require more than one round of consultation. Expert stakeholders need to be consulted for practical analysis of the proposed changes in New Zealand systems, and further

research into the reality of the intended welfare outcomes needs to be completed in the New Zealand setting.

The proposed changes exceed any other system in the world, which means there is no current evidence to support the intended welfare outcomes. In addition, the unintended consequences on animal welfare because of the changes has not been researched. The NZVA cautions against mandating industry-wide changes until there is evidence to show they will provide the intended welfare outcomes.



## Appendix 1 – Position Statement: Housing of lactating sows indoors

**Status:** Current

**Date ratified:** June 2022

### Position Statement

The New Zealand Veterinary Association (NZVA) has produced a position statement on the use of farrowing crates to reflect the diversity of opinions within the membership. The NZVA encourages and supports efforts to identify systems (including farrowing crate free) where the conflicting needs of the sow and piglet (using the Five Welfare Domains) can be better met simultaneously.

1. The NZVA finds the use of combination farrowing pens in which the sow may be loose housed or confined to a stall within the pen where the following points are met, to be within the current Animal Welfare Regulations as they are currently written.
  - i. The sow is confined to the stall for no more than one (1) day pre-farrowing and no more than five (5) days post-farrowing and, given the difficulty in accurately predicting time of farrowing, that the sow is confined for no more than seven (7) days in total during any lactation.
  - ii. When loose housed within the farrowing pen the sow is able to turn around freely.
  - iii. The flooring throughout the pen provides a hygienic environment and secure footing to minimize events such as mastitis, piglet diarrhoea and slipping (e.g., purpose-designed slats).
  - iv. The sow is provided with deformable and destructive manipulable material prior to farrowing. The NZVA believe the combination farrowing system provides the best balance between piglet welfare and the sows ability to express a range of normal behaviours prior to farrowing.

### Explanation

1. The NZVA recognises that in any animal production system that includes more than one class of stock, as any farrowing system must, it may not be possible to give full effect to all of the physical, health, and behavioural needs of one class of stock (i.e., the farrowing sow) where these conflict with another (i.e., the newborn piglet). Consequently, some compromise may be required. The NZVA position on farrowing crates promotes a system it believes achieves the best net welfare outcome for both the sow and the piglets, while ensuring that the period of any compromise that arises is minimised.
2. The NZVA recognises that temporary confinement of the sow during farrowing and for a limited period of time after farrowing improves piglet welfare through a reduction in physical injuries that may result in death (such as crushing and trampling), improved colostrum intake and an ability for staff to provide more proactive management (fostering, piglet treatments).
3. The NZVA encourages and supports the adoption of new technologies and knowledge to improve production systems that support viable farm businesses that are consistent with advances in animal welfare science and changing societal expectations.

### Guiding Principles

1. As the benefits of sow confinement during lactation reduce with each successive day of confinement, the period of confinement should be kept to a minimum;
2. Current scientific research, while clearly demonstrating that confinement does restrict or prohibit some sow behaviours, is equivocal as to the impact this has on sow welfare;
3. Around farrowing some sows present a significant health and safety risk to staff when unconfined.

### Further Reading

Moustsen, V. A., Hales, J. Lahrmann, H.P., Weber, P.M. and Hansen, C.F. 2013. Confinement of lactating sows in crates for 4 days reduces piglet mortality. *Animal* 7(4), 648 – 654.

Hales, J., Moustsen, V.A., Nielsen, M.B.F. and Hansen, C.F. 2016. The effect of temporary confinement of hyperprolific sows in Sow Welfare and Piglet protection pens on sow behaviour and salivary cortisol concentrations. *Applied Animal Behaviour Science* 183, 19 – 27.

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Kielland, C., Wisløff, H., Valheim, M., Fauske, A.K., Reksen, O. and Framstad, T. 2018. Preweaning mortality in piglets in loose-housed herds: etiology and prevalence. *Animal* 12:9, 1950 – 1957.

### **Additional Resources**

Baxter, EM. (2022). 'Free' Farrowing: Exploring different international farrowing regulations, industry- and market-led initiatives. (Policy Spotlight; No. 5). SRUC's Rural Policy Centre.

## Appendix 2 – NZVA Position Statement: Housing of growing pigs (post-weaning)

**Status:** Current

**Date ratified:** June 2022

### Position Statement

The New Zealand Veterinary Association (NZVA) has produced a position statement on the housing of growing pigs to reflect the diversity of opinions within the membership.

1. The NZVA supports a minimum space allowance determined by the formula  $m^2 = 0.034 \times \text{liveweight(kg)}^{0.67}$  where this space does not include open drains, outside dunging areas and areas that are excessively fouled in deep-litter systems.
2. The NZVA believe all growing pigs should be provided with manipulable materials (toys) to enrich their environment in a manner that is safe and hygienic (e.g. chains, balls, untreated wood, fibre). that more than one type of material/toy should be available at any one time and that these materials/toys should be changed to provide variety and stimulation.
3. The NZVA supports housing systems that provide minimal disease/immune challenge, good environmental conditions and that minimise social disruptions (e.g. all-in, all-out).

### Explanation

1. The NZVA recognises that the health and welfare implications of different housings systems on pigs between weaning and slaughter is multifactorial and is the cumulative result of space, temperature, air quality, flooring, hygiene, health status, access to feed and water, group dynamics, and environmental stimulation. As pigs are social and hierarchical animals, moving and mixing events are extremely stressful to them and the impact of these events may outweigh perceived advantages such as the provision of more space.
2. Scientific evidence supports the conclusion that where the 'k' value\* is 0.034 or above, space allowance has no further impact on measurable pig welfare where other factors are not limiting e.g. ability to provide a dry lying area.

### Guiding Principles

1. Where any 'k' value is applied, the pigs have relatively more space during their first weeks in the area which reduces as they grow and increase in size. The 'k' value determines the minimum space allowance permitted before the pigs must be moved to a more generous space allowance.
2. The social disruption associated with additional moving is likely to be more detrimental to the welfare of the pig than the 'k' value at the end of a production stage.
3. Within a given available space, a greater 'k' can only be provided by moving pigs more frequently and each move causes increased stress and has a negative welfare impact.
4. Providing too much space i.e. a high 'k' value, will in some circumstances have the unintended consequence of making it challenging to maintain adequate environmental temperature and prevent pig from developing appropriate dunging habits.

\* *'The area for static space allowance for pigs is calculated from metabolic liveweight using the model equation: Area (m<sup>2</sup>) per pig = k x liveweight<sup>0.67</sup> where k is a constant. The formula gives an indication of the 'footprint' of a pig that is lying down (without sharing space with another pig). A k value of 0.019 represents the static space (area occupied when the pig is not moving) while lying on its belly while a k value of 0.047 represents a pig recumbent on its side. [The minimum value for k under New Zealand regulations is currently 0.03.](#)' MPI*

### Further Reading

Gonyou, H.W., Brumm, M.C., Bush, E., Deen, J., Edwards, S.A., Fangman, T., McGlone, J.J., Meunier-Salaun, M., Morrison, R.B., Spoolder, H., Sundberg, P.L. and Johnson, A.K. 2006. Application of broken-line analysis to assess floor space requirements of nursery and grower-finisher pigs expressed on an allometric basis. *Journal of Animal Science* 84, 229 – 235.



Fels, M., Konen, K., Hessel, E. And Kemper, N. 2018. Determination of static space occupied by individual weaner and growing pigs using an image-based monitoring system. *The Journal of Agricultural Science* 156, 282–290.

## Appendix 3 – NZVA Position Statement: Sow housing at mating

**Status:** Current

**Date ratified:** June 2022

### Position Statement

The New Zealand Veterinary Association (NZVA) has produced a position statement on the use of sow housing at mating to reflect the diversity of opinions within the membership.

1. The NZVA supports the use of free access stalls to manage the welfare and physiological needs of sows in the immediate post-weaning period.
2. The NZVA only supports confinement for the period required for performing artificial insemination.

### Explanation

1. The physiology and behaviour of sows when on heat must be considered in proposed housing systems where sows are kept in groups.
2. The immediate post-weaning period is stressful for newly-mixed sows due to re-establishment of the social hierarchy, the addition of young sows to the group and the onset of heat. This is especially important to smaller and subordinate sows as fighting and riding behaviour at this time may result in terminal injuries.
3. Individuals within groups of sows need an opportunity to avoid negative social interactions during this time. Free-access stalls provide the best opportunity for sows to do this by enabling them to choose when to withdraw and when to reenter the group.

### Guiding Principles

1. Sows should not be confined unless this is absolutely necessary.
2. The housing of sows in groups where possible is desired.

### Further Reading

Knox, R., Salak-Johnson, J., Hopgood, M., Greiner, L. and Connor, J. 2014. Effect of day of mixing gestating sows on measures of reproductive performance and animal welfare. *American Society of Animal Science* 92: 1698 – 1707.

Rault, J-L., Morrison, R.S., Hansen, C.F., Hansen, L.U. and Hemsworth, P.H. 2014. Effects of group housing after weaning on sow welfare and sexual behavior. *American Society of Animal Science* 92: 5683 – 5692