Weaning before the rut has obvious benefits for mating management, but may not encourage early conception

Weaning management

How do farmers' weaning practices compare with research results?
To find out, AgResearch Invermay scientists Jo Pollard and Tony Pearse surveyed a number of deer farmers on their weaning management, and compared the results with what is known from the little research done to date.

Jo Pollard

The results were surprising. For instance, most deer farmers wean before the rut, which obviously makes for easier mating management. However, many also believe that it has a positive effect on early conception.

But this is not supported by research, although late weaning may boost subsequent weaner growth rates, compared with early weaned fawns.

At the same time, Dr Pollard and Dr Pearse found that many farmers' practices were by and large supported by the findings of scientific research. But they say more work needs to be known on certain practices, such as pre- versus post-rut weaning and separation distances between hinds and fawns.

The postal survey was mailed to deer farmers in the lower South Island. Fifty-nine replies were received, mostly from large farms (47 per cent had more than 200 breeding hinds) running Red or hybrid animals.

Weaning statistics

The average weaning weights were 53 kg for Red males and 48 kg for Red females, with a range of 38-65 kg for stags and 35-59 kg for hinds. These figures are similar to weaning weights found in an earlier survey of farms in the North Island, ranging from 42-59 kg for

weaner stags and 39-51 kg for hinds.

The average weaning percentage was greater for adult hinds (90 per cent) than for first-fawning hinds (78 per cent). This is also similar to results obtained in the North Island survey, where 98 per cent of adult hinds conceived but 9 per cent lost fawns by weaning, while 85 per cent of first-fawning hinds conceived but 17 per cent lost fawns by weaning.

Fawn behaviour at weaning

Farmers were asked whether they had observed any disturbed behaviours in newly weaned fawns and if so, how long these had lasted.

Nearly all respondents had observed vocalisation, fence pacing, and trying to escape through fences, and these behaviours generally lasted for 1-3 days. A small minority of farmers felt that these behaviours lasted for more than a week.

Timing of weaning

Pre-rut weaning was carried out by 72 per cent of farmers, mainly for reasons of mating management, but also because farmers believed that hinds would more readily conceive.

However, there is little evidence to support this belief. One study has shown no significant difference in the subsequent mean fawning dates of the hinds, although the early weaned hinds had a significantly greater spread in fawning dates than the late weaned hinds.

However, in a Canadian survey, older Elk cows whose fawns were weaned pre-rut subsequently calved on average eight days earlier than cows that were bred with their calves at foot.

On the other hand, with pre-rut weaning, 2-year old heifers calved six days later that those weaned post-rut. Pre-rut weaned calves were also heavier at 200 days of age than post-rut calves, although this could have been the result of more intensive management.

An experiment on pre-rut (mid March, with mating in April) versus post-rut (late June) weaning on Fallow deer found no difference in the date of oestrus or pregnancy rates between treatments. However, the unweaned fawns had a higher growth rate from autumn until June.

Similarly, in a study of lactation performance of Red deer, it was found that pre-rut weaning may penalise fawn growth rates because hinds were still providing a considerable amount of milk, although milk yield apparently had little influence on hind fertility.

Another influence on the time of weaning among the surveyed farmers was concerns about weaner health. Pre-rut weaning has the advantage of allowing drenching and other health treatments without having to yard mating mobs, while weather conditions are more likely to be favourable in the autumn than later in the year.

Indoor wintering of young fawns is another factor identified by research in favour of pre-rut weaning. This allows fawns to become used to humans, and enables the manipulation of lighting as well as supplementation with high quality feed.

Convenience and the weather were the main factors that determined the actual day of weaning. Research supports the importance of weaning in good weather for maintaining immunity from disease when fawns are under stress.

Weaning environment

Most farmers weaned all their stock on a single day rather than in successive groups. Most also put the separated fawns into a different paddock, while 25 per cent put their fawns indoors.

The remainder either transported weaners to a different farm from their usual one, or put them in the same paddock as before weaning. When hinds and fawns remained on the same farm, the surveyed farm-

Better growth rates and easier handling are two of the claimed benefits of confining fawns indoors

ers had quite different views on the optimal distance between the paddocks for hind and fawn groups.

The majority separated the weaners and hinds to a moderate distance, with only 11 per cent using a distance of more than a kilometre, while 13 per cent used neighbouring paddocks. Several farmers commented that the deer were most settled when in paddocks as far apart as possible, out of sight and hearing of the hinds. Those using neighbouring paddocks felt that this settled the deer better than keeping the deer a short distance apart.

In view of these differences of opinion, Dr Pollard recently carried out a study comparing groups of newly weaned fawns put in paddocks 100 m from the hinds — out of sight but within hearing — with groups transported 2 km to a different farm.

Pacing and vocalisation were reduced in the fawns which were widely separated from their mothers compared with those who were within hearing. On the other hand, fawns kept near their mothers gained the most weight over the two weeks post-weaning.

Cold weather also affected the behaviour of the fawns, with more pacing and calling in wet, cold weather than on fine days. Dr Pollard plans to carry out further trials on the effects of early and late weaning on fawn growth and hind conception dates.

"Soft" weaning has also been investigated, in which three to four hinds per day were shifted into a neighbouring paddock, and it was considered that this treatment caused less behavioural disturbance than separating all the deer at once.

While two-thirds of farmers in the survey put their fawns into a different paddock at weaning, some felt it was desirable to put them back into a familiar environment. This is consistent with a study on newly weaned piglets, which showed that piglets in an unfamiliar environment showed more behavioural and physiological stress than piglets in a familiar environment.

Indoor weaning

The 25 per cent of respondents who housed their fawns at weaning used a range of confinement periods — from 10 hours to the entire winter. The benefits of indoor confinement were considered to include settling the fawns — it was also felt they were more settled when eventually released to pasture — the ability to "keep an eye on them", better growth rates, easier handling and the development of social bonds with other fawns.

Research has also shown that indoor confinement of Red fawns is associated with greater weight gains and reduced pacing compared with confinement on pasture. However, aggression can be a problem with close, long-term confinement of fawns.

Farmers were asked to list ways of modifying the environment to reduce stress in newly weaned fawns. Shelter was considered important by several respondents, as was the practice of putting some non-breeding hinds or stags in with the weaners.

There is some scientific support for this practice, which has been associated with improved weight gains, reduced fence pacing and other activity, and less fear of both humans and new situations. The unrelated adults may provide leadership in the absence of the fawns' dams, similar to the matriarchal social system seen in the wild, where an older hind leads the younger hinds.

Handling at weaning

The average weaner mob size used by farmers in the survey was 114, with a range between 20 and 400. The average paddock area was 9 ha.

The most common time period given before shifting weaners again was more than 10 days, with only a quarter of farmers shifting them again within five days of separation from the hinds. When asked to list techniques to ease handling of weaners, several farmers said they left gates to neighbouring paddocks or yards open so that the fawns could become accustomed to moving through them.

There was a wide range of techniques used to handle weaned fawns, from leaving them completely alone to shifting them frequently between paddocks using a heading dog, to confining them indoors and handfeeding them or rubbing their heads.

Research material also emphasises the need for care when handling newly weaned fawns, and the use of unrelated adult hinds to facilitate movement of the mobs. One recommendation is to leave the raceway into the deer yards open the night before weaning, and operating the door into the yards remotely, using a rope.

Most farmers noted occasional injuries during weaning, including hair loss, mouth injuries, cuts and scrapes, and limb damage. These were most likely to happen during yarding, particularly when dealing with large mobs.

Unfamiliar, inexperienced or too many people handling the deer were also thought to lead to injuries. Half the respondents said deaths occurred occasionally at weaning, with the first seven days after weaning being the period of most risk, and broken necks

being the most frequent cause of death, followed by Yersiniosis.

Feeding regimes

Many of the surveyed farmers used a specific pasture for their newly weaned fawns, as well as supplementary feed.

The most common supplement used was barley, followed by lucerne. Some respondents commented that weaners settled more rapidly if they were well fed, and three felt that grain feeding in particular had a calming effect.

This is also backed up by research, which has shown that newly weaned fawns need familiar, high quality feed to minimise the stress of weaning. Respondents felt that feeding supplements tamed the fawns and facilitated the shifting of mobs, while pre-weaning feeding with supplements allowed the hinds to introduce the fawns to the feed and prepare them for indoor confinement.

Other benefits of supplements were the ability to add minerals, to improve growth rates and increase disease resistance.

The contention that good feeding is important over the weaning period is supported by a study comparing the performance of newly weaned Red deer fawns grazed on a pasture with a sward height of either 10 cm or 5 cm, over a six-week period.

The fawns on the higher sward height showed greater weight gains and none of them died, while fawns on the lower sward height had lower weight gains and 20 per cent died from Yersiniosis within 12 weeks of weaning.

Health and other treatments

Half of respondents gave the fawns Yersiniavax at weaning, and also treated for parasites. One third applied ear tags at weaning, although this could be carried out before weaning to minimise stress.

Many farmers put non-breeding hinds or stags in with the weaners, to help settle them

Best bets for weaning

The following points are worth keeping in mind when weaning:

- Wean in good weather.
- If possible, keep fawns in neighbouring paddocks rather than separated by a short distance.
- Returning the weaned fawns to a familiar environment may help to settle them.
- Indoor confinement can reduce stress and boost weight gains.
- Putting non-breeding hinds or other adult deer with newly weaned fawns is beneficial.
- Injuries and deaths occur mostly during mustering, particularly with large mobs in the yards, and when unfamiliar, inexperienced or too many people handle the deer.
- High quality feeds and supplements may settle fawns, boost growth rates and disease resistance, and ease the shifting of mobs.
- Treatment for parasites and vaccination against Yersiniosis are the most common health treatments at weaning, although a range of other treatments are also carried out.

More research

Areas where research into weaning management would be valuable include the effects of the timing of weaning on hind fertility and weaner growth.

Also worthy of further study are the need for shelter for newly weaned fawns, the long-term behavioural effects of intensive handling at weaning, and the productive and behavioural effects of feeding supplements. ■

This article is a summary of a paper presented by Jo Pollard and Tony Pearse to the 1998 Conference of the Deer Branch of the NZ Veterinary Association. The full paper is published in the Proceeding of a Deer Course for Veterinarians, No. 15.