



Two Heads Are Better Than One: A Starter Guide to Pairing Dairy Calves

1. INTRODUCTION

Why all the fuss about pair housing?

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Most preweaned dairy calves in the United States and Canada are housed individually. However, current research shows benefits to raising calves in well-managed pairs or small groups with full social contact.

Housing calves with at least one companion can improve animal welfare, calf growth, and consumer perception. Although the impact on calf health is less clear, many of the benefits of pair housing are promising for the vitality and sustainability of the dairy industry. A growing number of producers have found when raising dairy calves, two heads (or more) are better than one.

This article is the first of seven in a starter guide for pairing or group-housing dairy calves (*see tabs on the top for the list of topics*). Throughout this guide, we cover best practices to promote good health outcomes in calves raised in pairs or small groups.

Social Development

Companionship is important for calves because they are social creatures. In pairs and groups, calves learn to play well with others both literally and figuratively. In the literal sense, calves play more when housed with companions because of the social contact and access to more space. Figuratively, social contact early in life helps

calves learn to interact appropriately with each other and their learning ability is improved. Calves raised with companions also show greater adaptability to change. They are more willing to try new feeds such as grain, hay, and TMR. This translates into better resilience to stress and less bellowing during weaning. When moved into larger groups after weaning, calves previously housed in pairs or groups start eating sooner and do not show the growth slump often seen in individually raised calves.

Grain Intake and Growth

Several studies have shown calves raised in pairs or small groups consume grain and grow as well or better than individually housed calves. [Table 1](#) summarizes studies comparing individually housed calves to those housed in groups of two to eight. The table shows the number of studies which found pair- or group-housed calves measured ahead of (+) or similar to (=) individually housed calves. To date, no study has detected reduced (-) growth or feed intake in pairs or small groups compared to calves housed individually. Growth advantages are especially apparent when group-housed calves are fed greater milk or replacer allowances (such as 8 quarts per day or more at the peak).

Table 1. Studies¹ comparing growth or grain intake of individually vs. pair- or group-housed calves

Measure	+	=	-
Dry matter intake of grain	11	8	0
Average daily gain of bodyweight	6	7	0
Bodyweight at weaning	8	4	0

¹Adapted from Costa et al., 2016, plus seven studies published from 2016-2022.

The scale of these benefits was as follows:

- **Grain intake:** greater by $\frac{1}{4}$ to 1 pound per day before weaning and by $\frac{3}{4}$ to $2\frac{1}{2}$ pounds per day after weaning
- **Average daily gain:** greater by $\frac{1}{4}$ pound per day
- **Body weight at weaning:** greater by 5 to 9 pounds

Eating grain is critical for rumen development and a successful transition through weaning. Better early-life growth also means earlier onset of puberty and higher milk production.

Consumer Acceptance

In a recent study, over 1,300 adults were surveyed at the Minnesota State Fair. Nearly all of these fair-goers were consumers of dairy products. Participants were shown photos of dairy calves in individual, pair, or small-group pens in a barn. They were asked to rate how acceptable they found each calf housing system.

Approximately half of the participants disapproved of individual housing. Only 14% disapproved of pair housing, and only 7% disapproved of group housing. In contrast, two thirds of participants approved of pair housing and three quarters approved of group pens. Only a third thought individual housing was acceptable. For each housing system, roughly 20% of participants expressed no opinion. This is the first study evaluating consumer perceptions of calf housing. The researchers concluded social housing may be important for continued consumer acceptance of dairy production.

Calf Health

In general, having sick calves reflects problems in colostrum management, hygiene and sanitation practices, nutrition, housing strategies, or preventive care and monitoring.

Research outcomes so far are mixed regarding the impact of social housing on calf health. Although some farms manage large groups successfully, the most consistent research finding is that large group size generally affects calf health negatively compared to smaller groups. Two studies however have found less diarrhea in group-housed calves than individually raised calves. For respiratory disease, some studies report worse outcomes in groups, whereas others found similar health status between individually or group-housed calves. To date, no studies have detected significantly better respiratory health outcomes for pair- or group-housed calves compared to those housed individually.

Individual housing may mask the impact of less-than-ideal management on calf health by limiting disease transmission — much like a long-term quarantine. To avoid an increase in disease when moving to group housing, it is important to get the management ducks in a row beforehand. Because it can be harder to notice sick calves in a group setting, calves may already be sicker and less responsive to treatment when first discovered.

These bottlenecks are manageable and should not discourage producers from considering social housing. With planning focused on raising calves in pairs or small groups, farms can reap the benefits of social housing and promote healthy calves.

The second part of this guide, [Benchmarks for calf health before pair housing](#), covers transfer of passive immunity, mortality, and morbidity. Measuring these outcomes will help determine if the time is right for pair or group housing.

The third part of this guide, [Hygiene practices](#), covers best practices for biosecurity, sanitation, and bedding. Limiting the spread of disease *between* different pairs or groups remains a best practice. The principles are similar whether managing individuals, pairs, or groups.

Housing Options

Social housing can be done in many ways. Calves can be housed in a barn or outdoors in hutches or super hutches. The fourth part of this series, [Options for housing pairs or groups](#), describes various practices producers currently use to house calves in social groups. We also discuss the latest recommendations on space allowance. The fifth part of this series, [Grouping strategies](#), covers group size, age range within a group, and strategies for pen and barn moves. These are also important management aspects for ensuring good calf health.

Managing Undesirable Behaviors

Some producers are concerned social housing gives calves the opportunity to cross suck on each other. Excessive cross sucking is thought to lead to frostbitten ears, navel infections, mastitis, or udder damage. The little research on this topic has not found a consistent relationship between cross sucking and those negative outcomes. Nonetheless, there are strategies to reduce this abnormal behavior. The sixth part of this series, [Feeding practices and reducing cross sucking](#), covers research on milk allowance, feeding methods, and weaning strategies to reduce unwanted behaviors like cross sucking, pen sucking, and milk stealing.

Disbudding

Finally, the seventh part of this series, [Disbudding and dehorning considerations](#), presents the latest standards of care for disbudding, including considerations for pair- or group-housed calves.

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