

The Fundamentals For Good Hoof Health

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The Roadmap to target three hoof lesions

- Hoof trimming accountability
- Functional and therapeutic hoof trimming
- Hoof trimming schedule
- Lameness treated within 24hrs
- Integrated approach to managing digital dermatitis
- Making the hoof bath work



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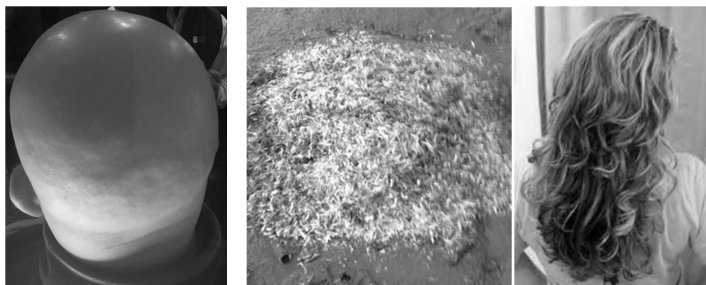
Considerations for improving hoof health

- Using best practice management tools and action plans.
- Animal welfare = "No Lameness Tolerance" policy
- A scientific approach
- Improving the bottom line



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What is a producer paying for?

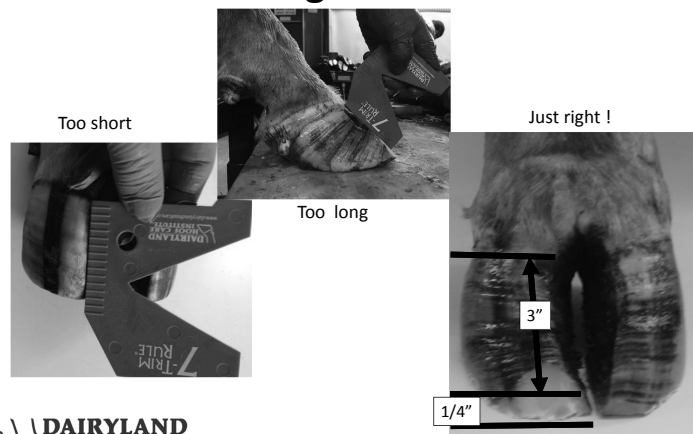


The hoof chips on the floor?



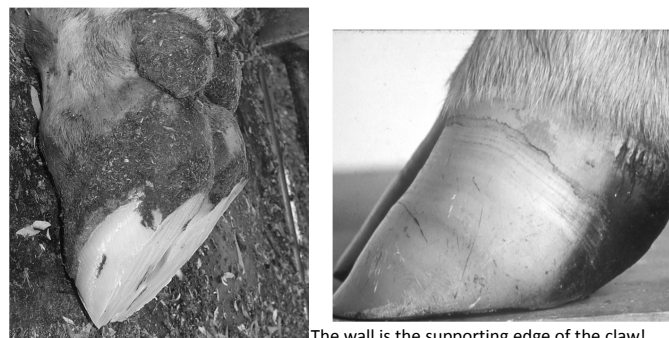
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1. Trimming toes too short



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4. Excessive removal of the abaxial or outside wall



The wall is the supporting edge of the claw!
It should never be removed except when lame!



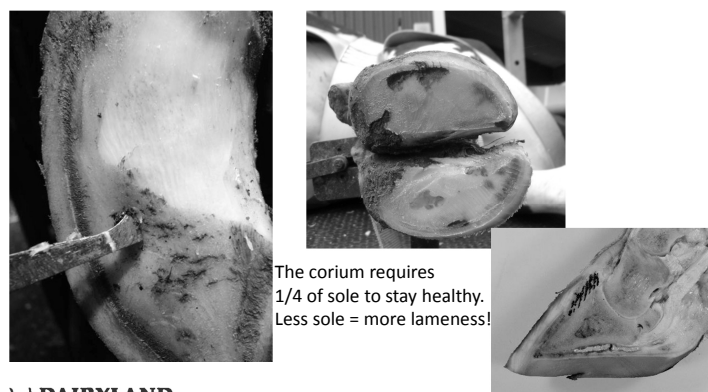
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2. Excessive trimming



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5. Trimming the soles too thin

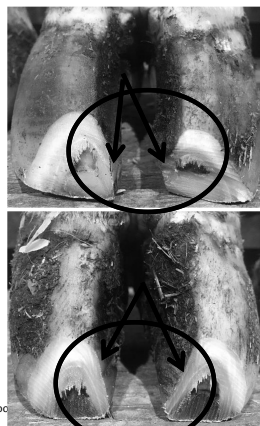


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3. Removal of the axial or inside wall of the toe

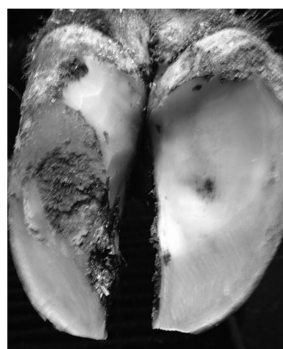


Trimming between the toes with the grinder



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Industry measuring stick



"How many cows can you trim in a day?"

What is the correct question?

Do we prevent or cause claw horn lesions with hoof trimming?



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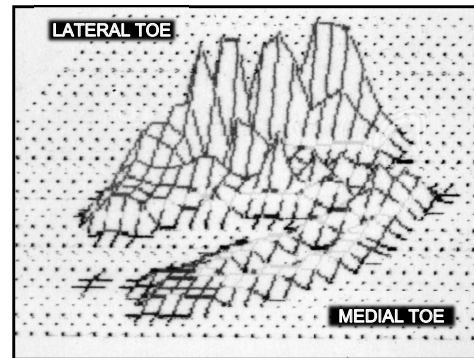
Industry measuring stick

- Is hoof trimming preventing lameness or causing lameness?
- Are lame cows recovering following therapeutic hoof trimming?
- Do cows become lame and stay lame?
- Low lameness = good hoof trimming!



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95% Lameness = rear outside claws



Left rear hoof pressure plate results!



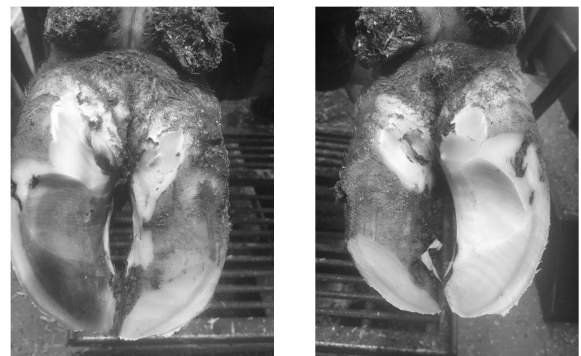
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Is hoof trimming the problem?



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Functional hoof trimming



Re-establishes healthy claw function



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95% claw lesions = rear outside claws



The real story

Timed trimming schedule

- Every dry cow, every springing heifer is assessed and functionally trimmed 8 to 3 weeks prior to calving
- Perform one or two more lactation assessments and trims depending on:
 - Cow housing, environment and management
 - Age of cow
 - High maintenance cows



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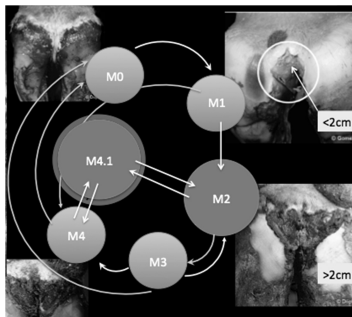
Timed trimming schedule

- First lactation cows next trim at 125 days
- Second lactation and over at 80 days for mattress barns, 125 days sand barns
- All cows every 120 - 150 days thereafter
- SOP for chronic lame cows (check rear feet 3 to 6 times extra per year) Flag in management software!



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Digital dermatitis (hairy warts)

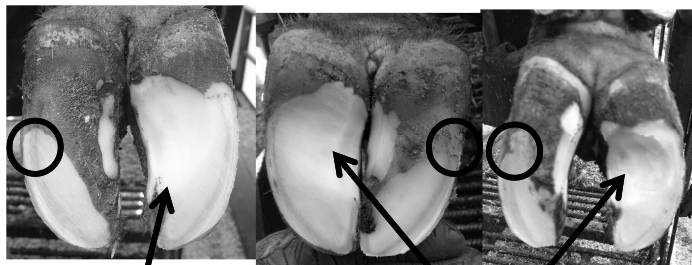


- Primary cause: breakdown in immune system
- Compromised skin integrity
- Opportunity for bacteria to enter
- Also need low oxygen environment
- **NOTE:** Placing bacteria that cause digital dermatitis on healthy skin *will not* result in digital dermatitis



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Trim springing (pre-calving) heifers



More modeling of the outside hind claw significantly reduced onset of digital dermatitis in 1st lactation animals

○ Sparing the heel of the inside rear claw is good for DD prevention



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< 20 mm

Regular foot bathing will prevent disease progress or disease outbreak.



M 1
Subclinical stage



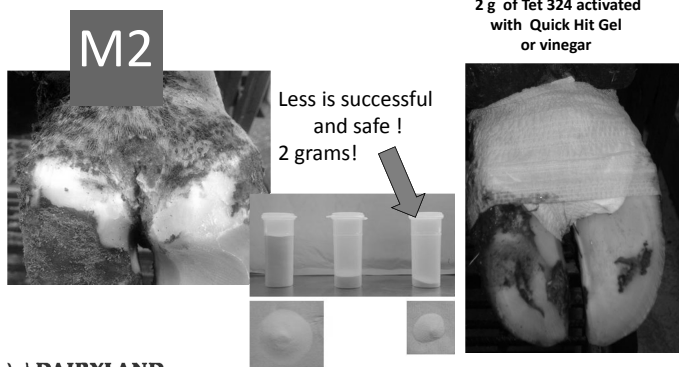
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The typical sign of digital dermatitis



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Early identification and prompt treatment can *interrupt* this disease!



M2

Less is successful and safe !
2 grams!

2 g of Tet 324 activated with Quick Hit Gel or vinegar

Remove bikini wrap after 24 hrs !!!



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Delayed treatment results



Progression of disease. Bacteria have begun to migrate deeper into the epidermis and encyst!

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Hygiene influences DD occurrence



Leg hygiene score in animals with no DD is better than in animals with DD

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This is a permanent DD lesion



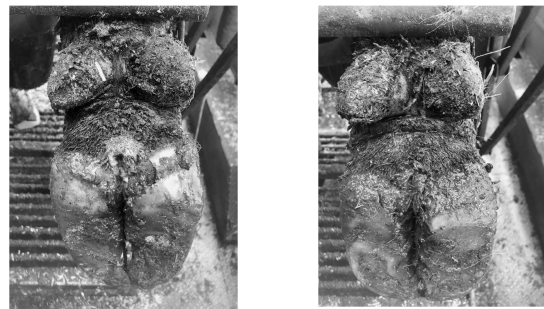
Lesion present for life

- Spirochetes migrated deep into the epidermis = are encysted
- Hyperkeratosis present
- Encysted bacteria have colonized/organized and will surface again
- New infections must be prevented with regular hoof baths and good hygiene

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Hygiene influences DD occurrence

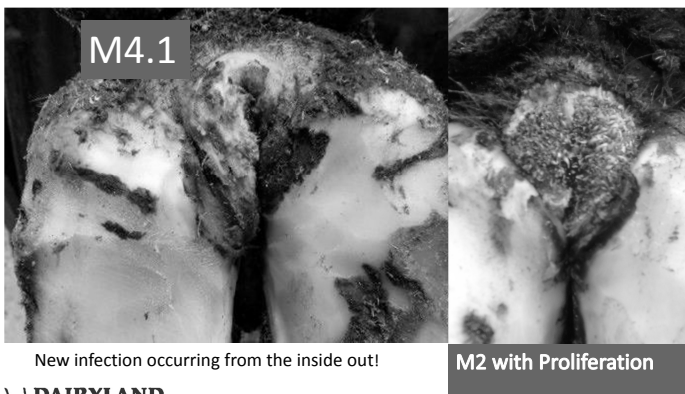


DD increases with higher leg hygiene scores.
Animals with DD have higher leg hygiene score!

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New infection = disease shedder



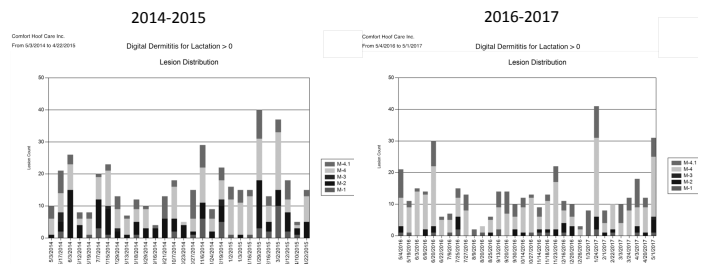
New infection occurring from the inside out!

M2 with Proliferation

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Improving hygiene and its effects on DD



June 2015 - Introduced Hypochlorite NaClO
as a cleaning product twice per week!

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Integrated approach for controlling DD

- Close observation of heifers >10 month
- Prompt treatment of early lesion
- Must use topical antibiotic the first time!
- Excellent hygiene and low stress environment
- Footbath to control M4 lesions and prevent M1 lesions
- If the hoof trimmer is treating all DD the approach is not integrated



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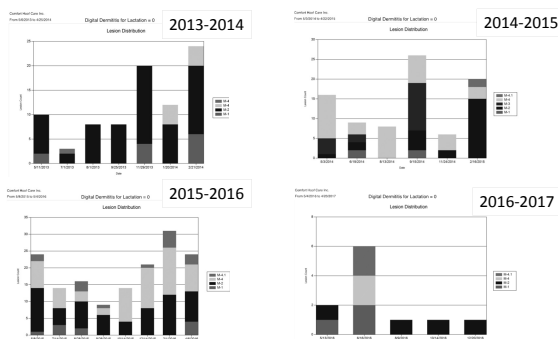
The Role of the Hoof Bath

- Improve hygiene condition of hooves
- Disinfect hooves for prevention and control of hygiene influenced hoof diseases
- Prevent foot rot infections
- Control and treat early DD (M1) infections
- Control chronic DD (M4) from re-infecting



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Heifer DD program with Availa Plus® and early antibiotic treatment



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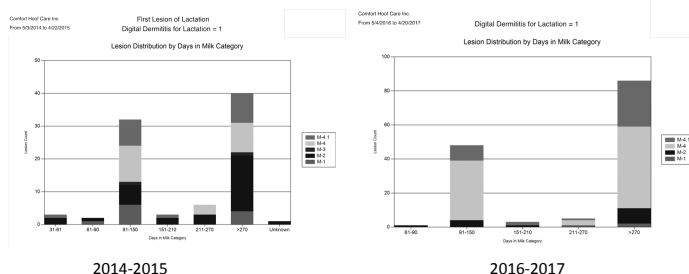
Efficacy of hoof bath solution

- “The best solution in the hoof bath is 12 feet or 4 meters in length”
- Dr. Dopfer at UW Veterinary school will run a test to determine solution efficacy
- Change solution after “x” amount of cows walk through
- Defecation into the bath
- Leg hygiene score determines hoof bath frequency



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DD 1st in Lactation change in 3 years



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Constant inoculation = challenging







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Hoof and leg hygiene

Hoof and Leg Hygiene Scoring Chart

Score at least 20% of the cows in each pen in a free stall herd or all of the cows in a tie stall herd

Score 1	Score 2	Score 3	Score 4
			
Clean, little or no manure contamination of the lower limb	Slightly dirty, where the lower limb is lightly splashed with manure	Moderately dirty, where there are distinct plaques of manure on the foot, progressing up the limb	Very dirty, where there are confluent plaques of caked on manure on the foot and higher up the lower limb

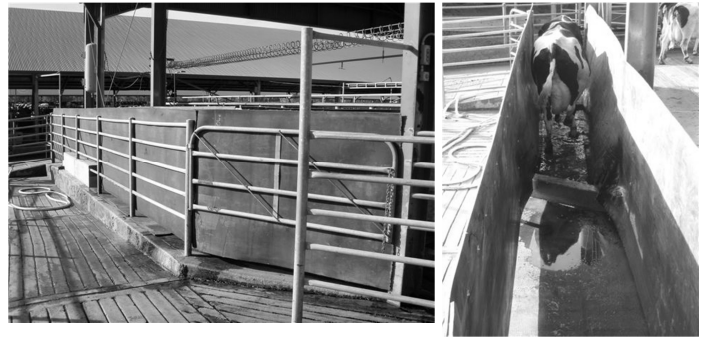
Interpretation

Proportion of cows scoring 3 and 4	Comment	Your Herd	Suggested Foot Bath Frequency
<25	Good		As required
25-50	Fair		2 days per week
51-75	Poor		5 days per week
>75	Very Poor		7 days per week



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Footbath with sidewalls or a race

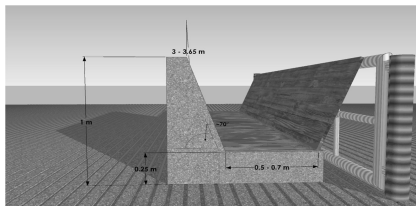


Cows will pass through the bath without defecating!



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The ideal hoof bath? H



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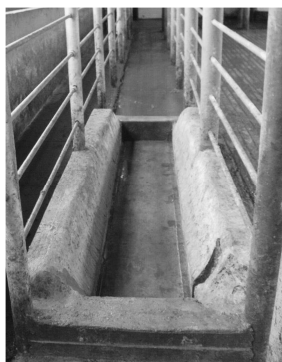


Foot bath with sidewalls or a race



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Effective hoof bath dimensions



- 12 feet (4m) long
- 20 inches (50cm) wide
- 36 inch (75cm) sides
- 6 foot (1.80m) side panels
- 12 inch (25cm) entrance and exit curb
- 3 ½ inch (10cm) solution



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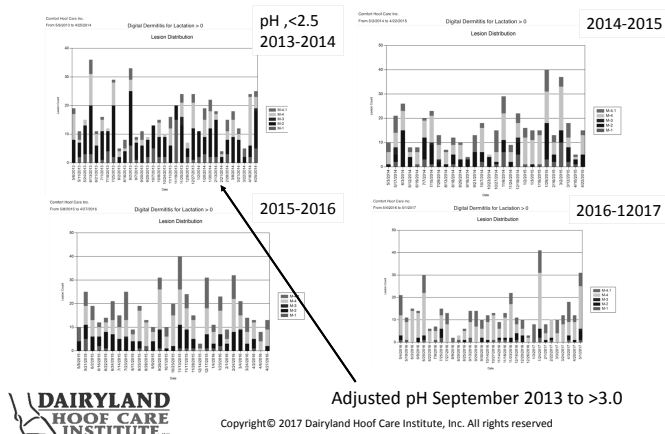
Hoof bath chemicals

- Manure contamination dependent (200 – 600 cow passes?)
- At what point does the chemical cease to kill Treponema spp ?
- **Acid based hoof bath** keep pH between 3.0 and 5.0 for best results
- How much does the chemical promote skin hyperkeratosis !!!? (low pH, strong concentration, etc.)



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Low pH chemical caused more DD



Acidifying copper sulfate to reduce concentration

Copper sulfate ionized

50% less copper sulfate used

Standard copper sulfate

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Common hoof bath solutions - cleaning

- Mild soap/ bleach 1 quart soap/4 quarts bleach
50 gal water
- Mild soap/ bleach/ salt 1 quart soap/4 quarts bleach
5 lbs salt/50 gal water
- Hypochlorite NaClO 2 1/2 gallon 50 gal water

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Footbath frequency

- Farm Dependent!
- Adapt the footbath frequency based on DD prevalence (M4) and foot rot prevalence
- Use records to predict changes in stocking density or determine high risk periods
- Careful with environmental accumulation of chemicals and costs

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Common hoof bath solutions - disinfecting

- Copper Sulfate 2.5% 12 lbs (5kg) CU +
Sodium Bisulfate 6oz(100g)/50gal water
(NaHSO4) (.0.5g/l)
(monitor pH regularly, 3.0 – 5.0)
- Use hot water for initial mix of CU and NaHSO4
- Hoof Zink (Follow manufactures recommendation)
- Formalin 1.5 - 2% 2-3 quarts/50gal water
- **Integrate other commercial products only if effective!**

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Take Home...

- Hoof baths are used to keep chronic or subclinical DD from going into active DD
- The hoof bath design matters!
- Hoof bathing protocol is farm dependent

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Conclusion for achieving good hoof health

- Evaluate functional and therapeutic hoof trimming
- Evaluate lame cow recovery
- Every cow is assessed 1 to 3 times per year
- Identify DD early and treat first lesion with topical antibiotic
- Use a well managed hoof bath
- Ensure hoof bath chemical proves efficacy



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Success in the Details

Thank You!



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