

The following article appeared in the December, 2001 issue of *The Virginia Dairyman*, a publication of The Virginia State Dairyman's Association. Thanks to Andy and his 'crew' for letting us use their article!!

If you are interested in setting up a youth tour of a local farm, contact you local Extension Service office. You can find them in the government section of your telephone directory, or start at: <http://www.reeusda.gov/1700/statepartners/usa.htm>



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This Spotlight was written by children who participated in a special field day as part of their curriculum. This trip illustrated beautifully the great lessons that are possible when vocational (agriculture) education and academic courses (Biology, Chemistry, Math, etc) are blended into an integrated curriculum. It is a shame when we in education continue to ignore the "living laboratories" just beyond the borders of our school campuses.

I was contacted by a local parent regarding setting up a farm tour. Her daughter had to milk a cow and obtain a milk sample so that she could observe milk and cream separating. As our group grew in number, it was decided that a literacy and writing assignment might compliment the lesson nicely. From that idea, this article was born.

Our writers range in age from 5-14 years of age. I would like to thank them for their interest in this assignment, their parents for their assistance, and our host farms, Huffard Dairy Farm and Highland Dairy Farm.

*Enjoy!
Andy*

On October 30, Andy Overbay from Virginia Cooperative Extension guided a group of 19 home schoolers from Abingdon on a field trip. Our objective was to learn about dairy cows and the dairy industry. We started our tour in Rural Retreat at Huffard Dairy Farm, and finished the day at the Johnson family's Highland Dairy Farm in Glade Spring. The following summarizes what we learned.

Our first visit was with the newborn calves at Huffard Farm. Mr. Overbay told us that this "nursery" protects the new calves from harmful bacteria normally found in the soil that could potentially kill a calf. He told us that calves are born sterile. Until their digestive systems mature, they are prone to illness if they come in contact with certain

kinds of bacteria instead of the antibodies in their mother's first milk. We enjoyed watching a calf take its first bottle of that milk called "colostrum." It looked like it was difficult to get it to take the nipple of the bottle, but some of us still agreed we would like to have a calf of our own to take home and feed on the bottle.

We then visited the area where the calves are moved to after they are a little more mature and ready to be weaned from the bottle. We wondered why there was gravel on the ground, and Mr. Overbay explained that the rock provided better drainage, and helped to keep the calves dry and healthy. Their housing looked like little igloos, and we enjoyed watching them peer at us from their doors.

We then learned about their food. We didn't realize how many different products they can digest! The most surprising ingredient we saw was cottonseed and fiber. Mr. Overbay asked us initially if we thought cows could eat blue jeans. He was talking about the by-products that came from blue jean making, but the way the calves at the Johnson's farm nibbled at our Levi's while we petted them, we didn't think they would wait for the seeds! We were also surprised to learn that some of the by-products used in their grain are leftovers from the manufacturing of some of our favorite soft drinks!

We also wondered about the dark blue silos called Harvestores. Mr. Overbay explained that these silos use carbon monoxide produced by the feed inside to force out oxygen. The oxygen would make the feed inside rot, and the color of the silo helped by heating the inside of the silo up, which in turn built up even more pressure inside. We never realized that color and chemistry worked together to make cow feed!

After examining an anatomical drawing Mr. Overbay did of the inside of a cow's udder, and listening to how a cow's udder produces and releases milk, we were able to take turns milking one of the Jersey cows by hand. It was more difficult at first because she had to relax and let her milk down into the teat. It would take forever to milk all those cows if machines weren't able to do the job! Mr. Overbay told us that it would take about half an hour for us to milk Nellie out by hand, but a machine could milk her in about six minutes! Eighteen cows were milked at the same time at the Huffard's farm.

We wondered why all the cows had orange "anklets" on their legs. Mr. Overbay said that they wear these "pedometers" all the time. While the cow is being milked, the information in the orange box is downloaded into a computer system. The data is based on how many steps the individual cow has taken that day. If the cow has taken too few steps, she may be sick. If she has taken too many steps, she may be in heat and is ready to be bred. The computer also keeps track of how much milk each cow produces. We were surprised to learn that an average milk cow produces about 8 gallons of milk per day!

At the Johnson farm, we saw a large herd of Holstein cows. Mr. Overbay explained that Holsteins came from the Netherlands and they are the most popular breed of dairy cow in the United States. They also give the most milk, although their milk is not as rich as the Jerseys we saw at the Huffards.

We saw the cows being fed and Mr. Overbay held up the mixed feed while we picked out some of the ingredients we recognized like cottonseeds and corn. The cows are housed in large barn and we surprised how clean they stayed. Mr. Overbay showed how air flowed through the barns and how fresh air helps keep cows healthy. At the end of the barn, we saw a huge pond for holding the cow's waste until it is time to fertilize the fields. From the pond, we could see several large fields where corn was grown. Mr. Overbay explained that the manure helps the soil and the environment. We were surprised to learn how much the Johnson's had invested in keeping our environment clean, and we were happy to learn what a great job they do for the Earth. We concluded our visit to the Johnson Farm by visiting the baby calves. Everyone selected his or her favorite.

Before our trip, we never realized how much math, science, and computer technology goes into milk before we buy it to keep us healthy!