

# MINNESOTA DAIRY STUDY TOUR

UNIVERSITY OF MINNESOTA  
DOCUMENTS

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## UNIVERSITY OF MINNESOTA

## AGRICULTURAL EXTENSION SERVICE

Office of Special Programs  
405 Coffey Hall  
1420 Eckles Avenue  
St. Paul, Minnesota 55108  
(612) 373-0725

Dear Dairy Farm Operators:

The University of Minnesota Agricultural Extension Service, Department of Animal Science, and the Office of Special Programs are pleased that you can join us on our DAIRY STUDY TOUR TO NORTH CAROLINA. This booklet describes the specific farms we will visit and gives you information about the North Carolina dairy industry and other items important in the area we will visit. We still have room for more people so if you have friends that may be interested, have them give me a call.

This study tour is designed to interest all dairy farm operators, especially those who are considering expanding their herd size or are becoming involved in a multi-family operation. We expect the participants to see, hear of, and take home many valuable ideas on dairy cow and heifer replacement, housing, milking, breeding, management, record keeping, feed handling, waste handling, and handling the sick cow or any cow needing individual attention.

Most Minnesota dairy farm operators with large or small herds will someday want to either (a) make a major change in the feeding program, (b) replace or expand an out-of-date cow or calf housing facility and/or (c) adopt some labor-saving device. Here is a once-in-a-lifetime opportunity to see what other progressive dairy farm operators in another part of the United States are doing.

The group will have ample opportunity to personally inspect all dairy facilities and ask questions of host dairy farmers. The dairy specialists are on the tour to answer your questions, and assist you with future plans for your dairy operation. You have a great opportunity to spend six days to learn from these farmers and dairy specialists.

Our travel will be via Republic Airlines Charter leaving Minneapolis/St. Paul International Airport late Sunday evening July 31. An earlier departure is preferred but the aircraft is not available until it has completed regular service about 9:00 p.m. On arrival at Raleigh/Durham Airport chartered buses will take us directly to the hotel. Because of our late arrival we will not start until midmorning on Monday. Two dairy farms and N.C. State University dairy facilities are on schedule Monday. This is the major tobacco growing area in the country so we will make a short stop at a tobacco farm that day. In the evening we'll have a get acquainted dinner with N.C. State dairy Extension specialists. We shall visit the Duke Homestead Museum and three dairy farms on Tuesday. Later in the afternoon, we will stop at some of the outlet stores in Burlington. Our motel is next to an outlet store mall so you may also shop in the evening, too. Three dairy farms are scheduled on Wednesday, concluding with a dinner with some of our N.C. dairy hosts. Thursday we get to the scenic part of the state and have two farms scheduled. N.C. is a major furniture manufacturing state so we are scheduling a tour of a factory in Hickory. On Friday morning we will visit one farm and a twenty acre bedding plant, vegetable plant and poinsettia farm under glass. In the afternoon, we will either

visit the Biltmore Estate or sight-see in the area. That night we will be in Cherokee where we will see the Cherokee drama "Unto These Hills." Saturday we'll enjoy more of the Smoky Mountains traveling to Gatlinberg and spend some time in Gatlinburg. Then more of the mountains enroute to the airport south of Knoxville and depart about 6:00 p.m.

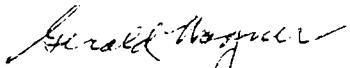
This program was developed with the help of Robert Appleman, U of M Dairy Extension specialist. Frank Sargent and Don Wesen, N.C. State Dairy Extension specialists, were very instrumental in selecting the dairy farms and assisting with local arrangements. Without their help, this tour would not have been possible.

Remember this educational tour is a legitimate tax deduction for dairy farmers. This includes your travel from home and return.

We are sending you this copy so you may learn as much about the farms and families in N.C. and about Minnesota tour members as possible before the trip. I suggest you get as much information as possible on N.C. from your library, too. The more you know about the area the more you will enjoy the trip. Leave the book with your family at home or others who may need to contact you in case of an emergency. Another book will be given to you at the Airport with more up-to-date information.

I look forward to seeing past travelers and meeting those of you who are new to our dairy study tour.

Sincerely,



Gerald Wagner  
Extension Specialist  
Program Development

GW/vr

Note: If your family/farm information we requested does not appear in this book, please send it in now so we can put it in the final one we are preparing. Thanks.

## TRAVEL INFORMATION

- Departure will be on a Republic Airline charter from the Minneapolis/St. Paul International Airport to Raleigh/Durham. Everyone will check in at Republic Airline ticket counter. We had hoped for late afternoon departure but at this time we are informed the plane is not available until after 9:00 p.m. It must then be serviced so we expect to leave about 10:00 p.m. Please check in between 8:00 and 8:30 p.m. At 8:45 we shall meet and go over trip details and board around 9:30.
- The return flight will be made on Republic Airline charter from Knoxville departing at 6:00 p.m. and arriving Minneapolis/St. Paul about 7:00 p.m. This will allow time for most to drive home that evening.
- General outdoor parking at the airport is \$5.00 per day. Allow enough time to park your car. Because of the cost of parking, it is best if you can leave your car with a friend or relative.
- A list of those going on the tour is included in this book. You may wish to form a car pool with others from your area who have similar plans.
- Phone numbers where you can be reached: For numbers at night, Sunday/Monday-North Raleigh Hilton (919) 872-2323; Tuesday-Holiday Inn Burlington (919) 227-3681; Wednesday-Hyatt Hotel Winston-Salem (919) 725-1234; Thursday-Sheraton Inn Asheville (704) 253-1851; Friday-Best Western Great Smokies Inn Cherokee (704) 497-2020. For numbers during the day, see the list of farms visits.
- The weather in North Carolina is warm and humid especially at lower elevation in the Raleigh, Burlington and Winston-Salem areas. In the mountain areas it is usually much cooler especially in the evening. Average maximum/minimum temperature for August: Raleigh 88/67; Winston-Salem 87/67; Asheville 74/63. Be prepared for warm weather with cotton clothing. A windbreaker/sweater may be useful in the cooler area. Also you may need rain gear. Dress casual. Have appropriate clothing for walking around yards and barns. Good comfortable shoes are a must. This is no place to break in new shoes. Don't bring extra clothing, etc. because you carry what you bring. The motels have pools so if you like to swim bring swim-wear.
- The tour package includes: Chartered air travel from Minneapolis/St. Paul and return, chartered bus transportation during the week from Raleigh to Knoxville, all lodging based on double occupancy, \*noon lunches and dinner two evenings, insurance, and programming costs. \*A breakfast may be substituted if group arrangements for lunch are not practical.
- Phone calls: You are responsible for all phone calls made from your room. If you make any long distance calls and charge them to your room, please pay in the morning before leaving the motel.
- Label all your luggage, camera, and other items before leaving home. Bring an alarm clock.
- If you have any questions and cannot reach our office, you may contact me, Gerald Wagner, at my home (612) 644-5390.
- We shall try to adhere to our schedule as much as possible. Therefore, prepare yourself to be on time for departures so that the group will not have to wait.
- Time zones: Please note that there is a time difference of one hour between Minnesota and North Carolina. When it is 6:00 p.m. in Minnesota it is 7:00 p.m. in North Carolina.

- ° Picture taking: many persons will want to take pictures of dairies, scenery, and sights of interests; therefore, be sure to take along enough film. The cost of film is usually less here. Also, the motels may not have film and it is not always convenient or economical to buy extra film while traveling.
- ° Insurance: Everyone on the tour is covered by a group policy for accidental death of \$2500.00, medical coverage of \$2000.00, and sickness of \$500.00. The airflight insurance is available at the airport. If you wish additional trip insurance (accident and life), check with your local insurance agent.

TENTATIVE ITINERARY  
DAIRY STUDY TOUR TO NORTH CAROLINA

Sunday, July 31	8:00	
	8:30 p.m.	Check in at Republic Airlines Ticket Counter Minneapolis/St. Paul International Airport
	8:45	Tour briefing before departure
	9:30	Board Republic Charter
	10:00	Depart Minneapolis/St. Paul
	1:15 a.m.	Arrive Raleigh/Durham
	2:00	Arrive North Raleigh Hilton
Monday, Aug 1	9:30 a.m.	Depart North Raleigh Hilton
	10:00	Arrive Triple R Farms - Walter R. Franks, Operator *Sheila Jordan-Curl, Wake County Assoc. Agric. Ext. Agt.
	11:00	Depart Triple R Farms
	11:30	Visit Tobacco Farm
	12:30 p.m.	Lunch in Raleigh
	1:30	Depart for Edgewood Farm
	2:00	Arrive Edgewood Farm - M.A. Perry, Operator *Sheila Jordan-Curl
	3:00	Depart Edgewood Farm
	3:15	Arrive at North Carolina State University Dairy Unit No. 2
	5:15	Depart for North Raleigh Hilton
	7:00	Get acquainted dinner and visit with N.C. State University Dairy Extension Specialists, Frank Sargent and Don Wesen
Tuesday, Aug 2	7:45 a.m.	Depart North Raleigh Hilton for tour to Durham, Hillsborough, Chapel Hill and Burlington
	8:30	Arrive Duke Homestead and Tobacco Museum, Durham
	9:45	Depart Duke Homestead
	10:15	Arrive Cedar Grove Farm - W. Glen Caruthers, Jr., Operator, Hillsborough *Ebert Pierce, Orange County Extension Chairman
	11:15	Depart Cedar Grove Farm for lunch at Colonial Inn at Historic Hillsborough
	1:00 p.m.	Depart for Maple View Farm
	1:30	Arrive Maplevue Farm - Robert Nutter, Operator, Hillsborough *Ebert Pierce

	2:30	Depart Maple View Farm
	2:45	Arrive Lemola Farms Inc., - Lewis and Everett Cheek, Operators, Chapel Hill *Ebert Pierce
	4:00	Depart for Burlington and Outlet Stores
	6:30	Check in Holiday Inn Burlington Evening for shopping outlet stores
Wednesday, Aug 3	8:00 a.m.	Depart Holiday Inn Burlington for Julian, Asheboro, Lexington and Winston-Salem
	8:45	Arrive Keck's Dairy - LeeRoy Keck, Operator, Julian *John A. Crawford, Guilford County Extension Chairman
	10:15	Depart Keck's Dairy
	10:45	Arrive Buttke Dairy Enterprise - Arlin Buttke, Operator, Randleman *Harvey Fouts, Randolph County Assoc. Agric. Ext. Agent
	12:00 p.m.	Depart Buttke Dairy
	12:30	Lunch
	1:30	Depart for Hillyn Farm
	2:30	Arrive Hillyn Farm - H.L. Hill, Operator, Lexington *W.W. Johnson, Davidson County Agric. Ext. Agent
	3:45	Depart Hillyn Farm
	4:30	Arrive Hyatt-Regency Hotel, Winston-Salem
	6:30	Dinner with host farmers at Brown Bottle Room Strohs Brewery
Thursday, Aug 4	7:30 a.m.	Depart Hyatt Regency, Winston-Salem for Yadkinville, Hickory and Asheville
	8:15	Arrive at the Milk House - Wiley Shore, Operator, Yadkinville *Doug Reece, Yadkin County Asst. Agric. Ext. Agent
	9:15	Depart the Milk House
	10:30	Arrive Cherub Jersey Farm - Major and Lucille Bond, Operators, Hickory *Edwin Nolley, Catawba County Ext. Chairman
	11:30	Depart Cherub Jersey Farm
	12:00 p.m.	Lunch American Legion Post #48, Hickory
	1:00	Visit furniture factory in Hickory
	3:30	Depart Hickory for Asheville
	5:00	Arrive Sheraton Motor Inn, Asheville Evening on your own

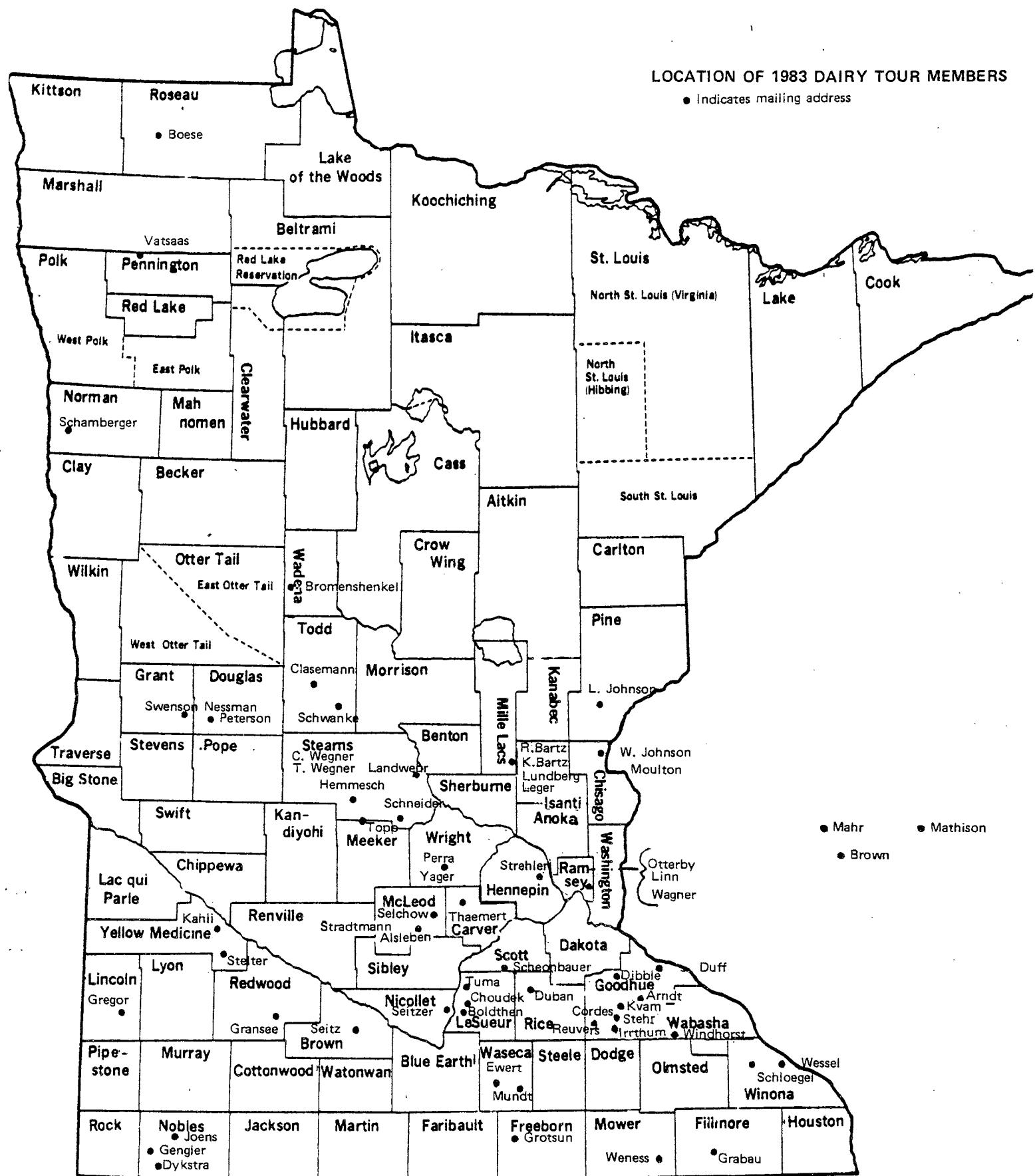
Friday, Aug 5	8:00 a.m.	Depart Sheraton Motor Inn Asheville for Hendersonville, Asheville and Cherokee
	8:30	Visit Van Wingerden Inc. - Van Wingerden, Operator, Hendersonville Approximately 20 acres under glass at two locations to grow vegetable plants, bedding plants and poinsettias *Grover Westmoreland, Henderson County Ext. Chairman
	9:45	Depart Van Wingerden Inc.
	10:00	Arrive Silverlane Farms Inc., - B.F. Nesbitt, Operator, Fletcher *Grover Westmoreland
	11:30	Depart Silverlane Farms
	12:00	Lunch Asheville
	1:30	Sight-see and/or Biltmore Estates (tentative)
	4:30	Arrive Best Western Motel Cherokee Dinner on your own
	8:30	The Drama of the Cherokee Nation "Unto These Hills"
Saturday, Aug 6	8:00 a.m.	Depart Best Western Motel Cherokee for Gatlinburg to enjoy scenery and sight-see enroute
	12:00 p.m.	Lunch in Gatlinburg Enjoy more scenery and sight-seeing from Gatlinburg to Maryville (near Knoxville)
	6:00	Depart Knoxville Airport on Republic Airline Charter for Minneapolis/St. Paul
	7:00	Arrive Minneapolis/St. Paul (approximate time)

\*County Extension Agents who will be assisting on the tour

Some adjustments will likely be made in this schedule.

LOCATION OF 1983 DAIRY TOUR MEMBERS

• Indicates mailing address



**1983 DAIRY TOUR REGISTRATION LIST**

<b>NAME</b>	<b>ADDRESS</b>	<b>PHONE</b>
Alsleben, Andrew	R.R. 3, Box 9, Glencoe, MN 55336	612-864-4509
Bartz, Kenneth Bartz, Phyllis	Rt. #2, Box 61, Princeton, MN 55371	612-389-1956
Bartz, Roy Bartz, Florence	Rt. #2, Box 76, Princeton, MN 55371	612-389-1087
Bergstrom, Arnold Bergstrom, Mildred	R.R. #4, Box 96, Austin, MN 55912	507-433-2421
Boese, Arthur Boese, Regina	Box 144, Greenbush, MN 56726	218-782-2245
Boldthen, Lionel Boldthen, Helen	Rt. #1, Box 167, LeSueur, MN 56058	612-665-3673
Bromenshenkel, Gene	Wadena Co. Courthouse, Wadena, MN 56482	218-631-2332
Brown, John Brown, Mary	Rt. #1, Box 144, Unity, WI 54488	715-223-4381
Choudek, Harold Choudek, Shirley	Rt. #2, Box 165, Montgomery, MN 56069	612-364-5380
Clasemann, Alois Clasemann, Annella	Rt. #1, Long Prairie, MN 56347	612-732-2370
Cordes, Lloyd Cordes, Avia	RR #3, Box 129, Kenyon, MN 55946	507-824-2433
Dibble, Willard Dibble, Eleanor	RR #4, Box 36, Cannon Falls, MN 55009	507-263-2467
Duban, George Duban, Charlene	Rt. #1, Box 100, Lonsdale, MN 55046	507-744-2211
Dykstra, Doward Dykstra, Shirley	RR #1, Box 36, Bigelow, MN 56117	507-683-2597
Ewert, Edwin Ewert, Bernice	Rt. #1, Box 251, Janesville, MN 56048	507-234-6428
Gengler, Paul Gengler, Loretta	Rt. #2, Box 146, Adrian, MN 56110	507-483-2254
Grabau, Melvin	Rt. #2, Box 254, Preston, MN 55965	507-937-3148

Gregor, Duane	RR #1, Box 56, Tyler, MN 56083	507-247-5360
Gregor, Alice		
Grotsun, James	RR #1, Box 171, Hartland, MN 56042	507-845-2315
Grotsun, Beverly		
Hemmesch, Robert	RR #3, Box 370, Paynesville, MN	612-243-4350
Hemmesch, Sandy	56362	
Irrthum, Walter	RR #1, Box 142, Wanamingo, MN 55983	507-824-2141
Irrthum, Patricia		
Joens, James	Rt. #1, Box 117, Wilmont, MN 56185	507-926-5387
Joens, Agnes		
Johnson, Lonnie	Rt. #2, Box 322, Pine City, MN 55063	612-629-2128
Johnson, Shirley		
Johnson, Wendell	Rt. #2, Box 211, Rush City, MN 55069	612-358-4119
Johnson, Margaret		
Khali, Remy	176 Washington, Granite Falls, MN 56421	612-564-4394
Khali, Margaret		
Landwehr, Bruno	Rt. #3, St. Cloud, MN 56301	612-251-5469
Landwehr, Agnes		
Leger, Stanley	Rt. #6, Princeton, MN 55371	612-389-1795
Leger, Rosemary		
Linn, James	101 Haecker Hall, St. Paul, MN 55108	612-373-1014
Lundberg, Jere	Rt. #2, Princeton, MN 55371	612-389-4488
Lundberg, Barbara		
Mahr, Donald	Rt. #1, Boyd, WI 54726	715-644-2282
Mahr, Rozella		
Mathison, Gerhard	Rt. #3, Box 345, Thorp, WI 54771	715-669-3156
Mathison, Esther		
McNamara, Charles	RR #2, Box 8, Goodhue, 55027	612-923-4486
McNamara, Dorothy		
Moulton, Clyde	Rt. #2, Box 146, Rush City, MN 55069	612-358-4877
Moulton, Norma		
Mundt, Lloyd	Rt. #3, Box 64, Waseca, MN 56093	507-835-1489
Mundt, Mary		
Nessman, Maynard	RR #2, Kensington, MN 56343	612-965-2768
Nessman, Elna		
Otterby, Don	130 Haecker Hall, St. Paul, MN 55108	612-373-1110

Peterson, Lester	Rt. #1, Box 39, Kensington, MN 56343	612-965-2478
Peterson, Lydia		
Reuvers, Lawrence	Rt. #5, Box 128, Faribault, MN 55021	507-334-9782
Reuvers, Beverly		
Schamberger, Carroll	Rt. #2, Ada, MN 56510	218-784-4369
Schamberger, Elsie		
Schloegel, John	Rt. #1, Box 210, Lewiston, MN 55952	507-523-3578
Schloegel, Rita		
Schneider, Walter	Rt. #1, Box 223, Kimball, MN 55353	612-398-7225
Schneider, Evelyn		
Schoenbauer, Glen	24820 Drexel Ave., New Prague, MN 56071	612-758-3444
Schoenbauer, Margie		
Schwanke, John	Rt. #1, Box 94, Grey Eagle, MN 56336	612-285-4118
Schwanke, Wilma		
Seitz, Ronald	Rt. #2, Box 153, Sleepy Eye, MN 56082	507-359-9844
Seitz, Catherine		
Seitzer, Lyle	Rt. #1, Box 52, St. Peter, MN 56082	507-931-3992
Seitzer, Bernita		
Selchow, Verndale	RFD #1, Box 101, Lester Prairie, MN 55354	612-395-2473
Stehr, Richard	Rt. #2, Box 101, Zumbrota, MN 55992	507-732-5900
Stehr, Elizabeth		
Stelter, Dennis	Rt. #1, Box 16, Wood Lake, MN 56297	507-485-3346
Stelter, Carole		
Stradtman, Duanne	RR #3, Box 231, Glencoe, MN 55336	612-864-4686
Stradtman, Tina		
Strehler, Wilferd	22505 Strehler Rd., Hamel, MN 55340	612-498-8545
Strehler, Diann		
Swenson, John	Box 2A, Hoffman, MN 56339	612-986-2970
Swenson, Deanna		
Thaemert, Verlan	4520 Tacoma Ave., Mayer, MN 55360	612-657-2127
Thaemert, Lorraine		
Topp, Dan	Rt. #1, Box 210, Eden Valley, MN 55329	612-453-7682
Tuma, Glenn	Rt. #2, Box 148, Montgomery, MN	612-364-7934
Tuma, Agnes	56069	

Vatsaas, Duane	Rt. #1, Box 154, T.R.F., MN 56701	218-681-3489
Vatsaas, Pauline		
Wegner, Curtis	Rt. #3, Box 359, Paynesville, MN 56362	612-243-4005
Wegner, Carol		
Wegner, Timothy	Rt. #3, Box 361, Paynesville, MN 56362	612-243-3222
Wegner, Nancy		
Weness, Robert	Rt. #1, Box 32, LeRoy, MN 55951	507-324-5935
Weness, Beverly		
Wessel, Robert	Rt. #1, Box 24, Winona, MN 55987	507-454-1388
Wessel, Rita		
Windhorst, Duane	Rt. #1, Box 124, Mazeppa, MN 55956	507-843-5524
Windhorst, Marilyn		

Kenneth and Phyllis Bartz  
Rt. 2, Box 61  
Princeton, MN 55371

The Bartz's own a 80-acre farm on which they grow alfalfa, corn and oats. They have 20 grade milking cows and 22 young stock Holsteins. They have a stanchion barn, use bulk tanks and use Midwest Breeders. They feed hay, silage (corn) and ground feed (oats and corn concentrate).

Ken is a part-time carpenter. He does woodwork at home and makes small shelves, toys and picture frames. Phyllis likes to knit, read and is active in a Bible Study group. They are both very active in their church and are the editors of the Local American Legion newsletter. Phyllis was the president of the American Legion Auxiliary and is the co-chairman for the Princeton American Red Cross Blood Bank.

This trip will be their first plane ride and they hope to meet new farmers to see how they farm in the eastern states. The Bartz have three children ranging from 33 to 24.

Roy and Florence Bartz  
Route 2, Box 76  
Princeton, MN 55371

Roy and Florence are looking forward to seeing how other dairy farmers enjoy, as well as cope with, the problems of dairy farming.

The Bartz farm consists of 320 acres of land on which they grow 130 acres of corn and 65 acres of alfalfa. The dairy herd consists of 70 grade Holstein cows and 70 young stock. The herd average is 15,000 lbs of milk and 525 lbs of butterfat. They have a cold free stall barn with a milking parlor and badger feeding system. They raise their own replacements and a few steers and have started their calves in hutches for the past two years. It has worked well, they write.

They are active members of the Zion Lutheran Church, American Legion, and the Auxilary and both enjoy traveling. Roy is chairman of the Board of Directors for Princeton Coop Creamery and a member of the Board for First District Association of Litchfield (a dairy processing plant). Florence is co-chairman for the Red Cross Blood Mobile for their unit and is active in their local and county extension home study groups. They have five children between the ages 25 and 36.

Arthur and Regina Boese  
Box 144  
Greenbush, MN 56726

Arthur is a DHIA supervisor in NW #2 DHIA district covering the western part of Roseau county and parts of Kittson and Marshall counties. Regina is a part-time nurses aid at Greenbush Nursing Home and full-time homemaker. She is on the education committee and a member of ALCW at Bethel Church in Greenbush. She serves on the Roseau County Social Service Board. Her hobbies include painting, gardening, sewing, and playing guitar and singing. Arthur is also on the Bethel Church Council and on conference and district church committies. His hobbies include reading and gardening. Arthur and Regina would like to learn from dairymen in another part of the country. They plan to take notes and pictures to bring back as much information as they can to share with the families in NW #2 DHIA.

Eugene Bromenshenkel  
1507 1st Street, S.W.  
Wadena, MN 56482

Eugene and his wife have four children ranging in age from 17 to 9. He is going on this trip to help tour participants gain more from the trip by helping interpret and drawing information from participants.

John and Mary Brown  
Rt. #1, Box 144  
Unity, WI 54488

John and Mary own 458 acres of land in Unity and rent 389 acres in Platteville on which they grow corn, hay and barley. Their dairy herd consists of 60 Holstein cows and 70 young stock. The herd averages almost 18,000M and 650BF. The cows are milked in a flat barn in tie stalls with a pipeline. They are breeding their own cows using Tri-State and select sire bulls. Their 20 year-old son, Chuck, is working with them full time. Their son, Jim, raises hogs housed in a portable building. Future plans include moving from their Unity farm (they are hoping to sell it) to the Platteville farm by fall. The farm is set up for dairy (with parlors), beef and hog production. They say, "If this all sounds confusing to you - it is more so to us as we shuffle machinery between farms (170 miles) and never know who's going to be where next week!"

The Browns enjoy activities at Calvary Bible Church. They are FFA Alumni and enjoy camping and square dancing. They write that they are looking forward to a change of pace, seeing a new area of the country and getting together with some great people." They have four children between the ages of 20 and 15.

Harold & Shirley Choudek  
R #2, Box 165  
Montgomery, MN 56069

On their 590 acre farm the Choudeks produce alfalfa, corn, soybeans and small grain. They have 84 grade B Holstein milking cows and 110 young stock. They milk in a tie stall barn, which has a manure pit that holds one year's worth of manure. The cows are fed haylage and high moisture shelled corn from their Harvestor. The herd averages 17,650 M, 677 BF. They feed out about 50 bull calves each year.

The Choudeks are town board members and enjoy fishing year round. Shirley gardens and helps with the farming operation. They would like to see other dairy operations and visit with dairymen to get ideas for improving their operation. Harold and Shirley have four children between the ages of 21 and 16.

Alois and Annella Clasemann  
Route 1  
Long Prairie, MN 56374

The Clasemanns are eager to see the facilities at the North Carolina campus and to see dairying in another part of the country. The Clasemann farm consists of 180 acres of land; they own 160 acres and rent 20 acres. They grow 60 acres of corn, 50 acres of alfalfa, and 10 acres of oats. The dairy herd consists of 75 Holsteins; 30% registered and 70% grade, with 40 cows in the milking herd and 35 young stock. The herd average is 18,170 lbs of milk and 600 lbs of butterfat. They have a 44 tie stall barn with a liquid manure system. Alois and Annella do their own A.I. and buy semen from four different breeding associations. They use alfalfa hay, corn silage, and high moisture corn plus protein supplement as feed. They also raise Appaloosa riding horses for their seven children who range from 12 - 24 years old. The Clasemanns enjoy square dancing, polka dancing, bee raising, and swimming.

Lloyd and Avis Cordes  
Route 3, Box 129  
Kenyon, MN 55946

The Cordes's have a 410 acre farm on which they grow corn, beans, peas, alfalfa, and sweet corn. Their herd consists of 42 grade Holsteins and 60 young stock. For milking, they have a pipeline system in a stanchion barn. The herd is fed haylage, corn silage, high moisture corn, and some hay. They are on a breeding program with ABS. They raise steers and have calf huts that are working out very well, they say.

Lloyd is on the town board, fair board, and is an agent for the Wanamingo Mutual Fire Insurance Company and enjoys fishing. Avis is still County Food Project Leader, participates in extension homemakers, and is ALCW vice president. She likes to collect salt and pepper shakers and different recipes. They are both involved with church activities. They have three children, ages 26, 22, and 19. They are looking forward to relaxing, sightseeing, and visiting with people in their own line of work. They want to learn how farming is done in a different part of the country.

Willard and Eleanor Dibble  
RR #4, Box 36  
Cannon Falls, MN 55009

Willard and Eleanor, veteran participants of the dairy tour, have enjoyed traveling to different parts of the country to see how other people farm. They bring back ideas to their son who now runs the farm. On the 425-acre farm, they grow 110 acres of hay, 135 acres of corn, and 37 acres of oats. The dairy herd consists of 128 Holsteins; 43 registered and 17 grade, with 60 cows in the milking herd and 68 young stock. The herd average is 16,350 lbs of milk and 620 lbs of butterfat. They have a 60-cow tie stall barn and feed inside and have an outside feeder.

Willard is the president of the Cannon Falls Valley Fair, serves on the church board, is active in the Masonic Lodge, and is a member of the Farm Bureau. Eleanor is active in the church and Farm Bureau Womens Committee. They both enjoy playing golf in the summer, football in the fall, and basketball in the winter. Willard and Eleanor have three children ages 37, 34, and 33.

George and Charlene Duban  
Route 1, Box 100  
Lonsdale, MN 55046

George and Charlene are looking forward to meeting their dairy tour friends and to get away from the farm for a vacation. Eager to tour North Carolina and Tennessee, they are always looking for new ideas and management skills.

The Duban farm consists of 270 acres on which they grow 150 acres of corn, 35 acres of oats, and 80 acres of alfalfa. The dairy herd consists of 140 Holsteins; 4 registered and 56 grade, with 60 cows in the milking herd and 80 young stock. These DHIA members raise their own replacements. Steer calves are fed for market. Cows are bred by artificial insemination by Midwest Sires.

In addition to dairying, they raise their own feed and have a farrow-to-finish hog enterprise of about 500 hogs. George enjoys reading farm magazines, working in the shop, and fishing when he has time. He is an usher at the church, a Knights of Columbus member, and a member of several farm organizations. Charlene enjoys reading, crafts, and cake decorating. She is a member of the Altar Rosary at church and is president of the Rice County Porkettes.

Dorward and Shirley Dykstra  
RR. #1, Box 36  
Bigelow, MN 56117

The Dykstras have a 480 acre farm, 320 acres of which is owned and 160 which is rented. The primary crops grown are corn, soybeans, alfalfa, oats and popcorn. They have 30 milking cows and 110 young stock Holsteins. Their herd is housed in a free stall barn that contains a 10 stanchion pipeline milking facility. The cows are fed haylage and high moisture corn using a bunk-length belt feeder. Additional grain is fed according to production by use of a computerized grain system. The cows are A.I. primarily, but some of them are bred naturally. They raise their own replacement heifers and feed out their own steers.

The Dykstras say, "We all enjoy sports, especially basketball and slow pitch softball and love to take time to go fishing. A garden is also beneficial and pleasurable. We are active members of the Bigelow Christian Reformed Church - attending Young Couples and several other societies." They hope to have "a relaxing enjoyable - honeymoon (oops!) - vacation." They want to see the beautiful and interesting sights of North Carolina and at the same time look for ideas to improve their own dairy operation. They have four children between the ages of 16 and 7.

Edwin and Bernice Ewert  
Route 1, Box 251  
Janesville, MN 56048

On the tour, the Ewerts want to pick up some information that they will be able to use on their farm. They are looking forward to seeing the mountains and other points of interest as well as talking and listening to other dairy farmers.

The Ewerts have a tie stall barn, pipeline milking system, and air manure system with a lagoon. They do their own A.I. They feed bale alfalfa and corn silage with a 16% grain ration. High producers get a top dressing of soybean meal.

The Ewart farm consists of 160 acres, producing 100 acres of corn and 45 acres of alfalfa. The dairy herd, 60 grade Holsteins and 150 young stock, averages 16,500 lbs of milk and 600 lbs of butterfat. They raise all their own calves and keep heifers for replacement; all others are fed out to sell. They breed first calf heifers to Angus so they have both Angus and Holstein calves.

They enjoy walking, old time and western music, and dancing. Edwin and Bernice have four children and six grandchildren.

Paul and Loretta Gengler  
RR #2, Box 146  
Adrian, MN 56110

Paul and Loretta are looking forward to having a good time and learning new ideas. Their farm consists of 160 acres on which they grow 62 acres of corn, 14.5 acres of oats, 45.8 acres of beans, and 15 acres of alfalfa.

The Gengler dairy herd boasts 31 Holstein cows and 57 young stock. The Genglars raise all their own heifers and feed out all steers. The herd average is 12,747 lbs. For the past 29 years, Genglars have used artificial insemination to upgrade their herd. Paul enjoys being in the church choir, fishing, reading, and nature-watching. Loretta is involved in church aid and extension club and enjoys gardening, sewing, and fishing. Paul and Loretta have two children aged 27 and 24.

Melvin Grabau  
Route 2, Box 254  
Preston, MN 55965

A DHIA supervisor in Fillmore County, Melvin supervises herds which are 10% color breed, 20% are registered cattle, and 70% are grade Holsteins. He has 27 official herds and 4 unofficial herds on test. Melvin helps farmers in the spring with planting and in the fall with harvesting. He says he enjoys mowing and fertilizing lawns, fixing up old lawns, painting old houses and traveling.

Dean and Dorothy Gransee  
RR #2, Box 47  
Sanborn, MN 56083

Dean and Dorothy look forward to the chance to visit with dairy people both in North Carolina and on the tour plus have a vacation in an area new to them. The Gransees have two sons in partnership with them. Last summer they built an 8 stall milking parlor with automatic takeoffs, heat exchanges, heating cables in the floor, and computer feeding in outside feeders. Haylage, corn silage, oatlage, and dry hay are in conventional silos.

The Gransee farm consists of 480 acres of land on which they grow alfalfa, oats, and corn. They irrigate 100 acres. The dairy herd consists of 108 registered Holsteins and Red and White Holsteins with 53 cows in the milking herd and 55 young stock. The herd average is 17,000 lbs of milk and 650 lbs of butterfat. They have a registered Polled Hereford cow herd of 33 plus yearlings and calves as breeding stock for sale.

Dean is the director of the Southwest Holstein Association, State DHIA Committeeman for the National Convention in 1984, and is active in the Masonic Lodge. His hobbies are reading and showing cattle. Dorothy is the chairman of the Church Mission Committee. Her hobbies include geneology, sewing, and reading. Dean and Dorothy have four children at the ages 28, 27, 26, and 24. The Gransees will be hosting a State Red and White Cattle meeting on August 13, 1983 and would like to invite everyone to attend.

Duane and Alice Gregor  
RR 1  
Tyler, MN 56178

The Gregors are looking for new ideas to put to use on their farm--whether time, labor, or money saving. The Gregor farm consists of 380 acres of land on which they grow corn, oats, and alfalfa. The dairy herd consists of 70 registered Holstein cows and 140 young stock. The herd averages 18,965 lbs of milk and 696 lbs of butterfat. They have pipeline milkers, a tie-stall barn, and a manure stacking system. They breed A.I. using HFA mating service.

Duane and Alice are members of the Danebod Lutheran Church and the Holstein Association. They have three children, age 25, 24, and 19.

James and Beverly Grotsun  
RR #1, Box 171  
Hartland, MN 56042

The Grotsuns own a 165 acre farm produces corn, oats, alfalfa and hay. Their dairy herd consists of 30 Hostein cows and 30 young stock. They are housed in a grade A - tie stall barn. Jim does his own artificial breeding using Cal Clark Board Chairman, Kron Elevation Chief Elmes, Ocean-view Sefation, Marshfield Elevation Tony, and Carlin-M Ivanhoe Bell as some of the bulls. They feed the cows hay, corn silage, and high moisture ground ear corn.

Jim is on the county Holstein Breeders Association Board and just finished a term on the Church Council. He enjoys sports and cow sales. Bev likes to sew and read. She is involved in the church mission circle and nurses association. Their married daughter is a graduate of Concordia College in Moorhead while their son will be a senior at the U of M in animal science. They write, "This will be our third dairy trip, so we look forward to renewing friendships plus meeting new people, seeing a different part of our U.S.A. (love the mountains!) and the various farm operations adapted to that area. It's a good opportunity to combine learning new ideas along with enjoying the scenic and historic points of interests."

Robert and Sandy Hemmesch  
RR #3, Box 370  
Paynesville, MN 56362

Robert and Sandy are looking for new ideas on how to get a son or daughter in farming. The Hemmesch farm consists of 400 acres of corn, alfalfa, oats, and beans. They have a grade A stanchion barn with pipeline milking. Their dairy herd consists of 71 Holsteins; 41 are grade, with 41 cows in the milking herd and 30 young stock. The herd average is 14 - 15,000 lbs of milk. Their cows are fed baled alfalfa, corn silage, and dry corn. They raise bull calves to 700 lbs.

Robert and Sandy enjoy playing softball in the summer and go snowmobiling in the winter. Robert and Sandy have six children ranging in the ages of 5 - 16.

Walter and Patricia Irrthum  
Route 1, Box 142  
Wanamingo, MN 55983

The Irrthum farm consists of 160 acres of corn, oats and hay. The herd consists of 18 registered and 22 grade Holsteins with 40 young stock. Milking is done in a tie stall barn with a pipeline. They have been milking for 10 years. They have a counter slope heifer barn and calf hutches. The Irrthums also own a flock of 80 ewes.

The Irrthums on their ninth dairy tour are looking forward to seeing how people in another part of the country handle their cows in heat and humidity. They are also interested in looking for new ideas for expansion and manure handling systems. They want to renew old acquaintances, meet new people, have a vacation and see the Southeast. They are involved in the Goodhue County Holstein Club and are 4-H leaders. They enjoy Gopher football games, cattle and sheep shows and sales. Walter enjoys reading and is a Midwest Delegate, while Pat enjoys sewing and attending auctions. Walter and Pat have two children, ages 20 and 15.

James and Agnes Joens  
Box 117  
Wilmont, MN 56185

James and Agnes are joining the tour to see a different part of the country, to relax and relate to other rural people and to learn other ways to enjoy their lives and improve their dairy operation.

Their farm consists of 75 acres of corn, 75 acres of beans, 15 acres of oats, and 40 acres of alfalfa. Their dairy herd consists of 80 Holsteins of which 40 are grade cows in the milking herd and 40 young stock. The herd average is about 15,000 lbs of milk. They milk 30 - 32 cows a year in a 32-cow stanchion barn. Their feed is stored in two Harvestor structures. They feed no commercial protein and work at feeding efficiency. They sell their steers and extra heifers as yearlings. Their hobbies include fishing and ball games. They teach confirmation classes and are members of KC's and CDA. James and Agnes have ten children from the ages of 12 to 27.

Lonnie and Shirley Johnson  
Route 2, Box 322  
Pine City, MN 55063

On Lonnie and Shirley's 235 acre farm they grow 70 acres of alfalfa, 90 acres of corn, and 20 acres of oats. The Holstein dairy herd consists of 42 registered milking cows and 60 young stock. The herd average is 17,152 lbs of milk and 691 lbs of butterfat. Cattle are turned out every morning and fed silage, hay, and corn. They have had two cows specially mated by A.B.S. and have been breeding purebred animals since 1940.

Wendell and Margaret Johnson  
Route 2, Box 211  
Rush City, MN 55069

Wendell and Margaret are interested in seeing how dairying is done in the south: how the cows produce in hot weather, what different kind of soils there are, and what crops are grown.

The Johnson farm consists of 240 acres of land on which they grow 60 acres of alfalfa, 32 acres of corn, and 24 acres of oats. Since October, they have been farming on their own because their children are all married and on their own. They have decreased their head by 10 and have increased production per cow by 2,500 lbs milk and 99 lbs fat in the past year. They have grade cows but have had registered bulls for years and use some A.I. Their dairy herd consists of 26 grade Holstein milking cows and 25 young stock. Their future plans are to keep increasing production without more cost and with less cows. They sell baby bull calves at one week and keep the heifer calves.

They have a stanchion barn with pipeline milkers. They feed corn silage, alfalfa hay, ground corn, oats, and top dress protein. In the summer they green chop.

In the community, Wendell is a township supervisor and both are members of the First Lutheran Church. Margaret has been a member of the Brickyard Womans Club for over 30 years. Wendell and Margaret have five children ranging in the ages of 21 - 31. They enjoy their three grandchildren in Rush City and hope to see their son, daughter-in-law, and grandson (who live in Knoxville) on his third birthday August 8. They are also looking forward to another grandchild in the fall.

Remy and Margaret Khali  
176 Washington  
Granite Falls, MN 56241

Remy is looking forward to not having to get up at 5 a.m. every morning and Margaret wants to see the mountains. They are both interested in comparing their dairy operation with those they see, in learning new ideas and life styles. The Khali farm consists of 500 acres of land on which they grow 100 acres of corn, 100 acres of alfalfa, and have 300 acres of pasture. The corn and alfalfa is chopped for forage. Their farm is river bottom land and they irrigate 100 acres from the river (center pivot and roving gun systems).

The dairy herd consists of 120 grade A Holstein cows and 150 young stock. At their Sebring dairy: the herd averages 40 - 50 lbs/day. Their breeding program includes bull in herd as well as A.I. Their housing consists of 144 free stalls; their feeding system includes bunker and fence line feeding. They buy their grain and concentrate.

Remy originally came from Algeria and played professional soccer before meeting Margaret, a Minnesota farm girl. Remy's hobby is milking cows and Margaret works part-time as a school social worker for fun and diversion. She also likes to play softball. They have three boys ages 4, 2, and 1, who love the farm.

Bruno and Agnes Landwehr  
Route 3  
St. Cloud, MN 56301

Bruno and Agnes were on a dairy tour a number of years ago and really enjoyed it and decided to join us again this year. The Landwehr farm consists of 135 acres of land. Bruno and Agnes have 12 children ranging in the ages from 19 to 24.

Donald and Rozella Mahr  
RR 1  
Boyd, WI 54726

The Mahrs want to see the Blue Ridge and Smokey Mountains and spend a few days with a lot of nice people. Donald and Rozella have six children, ages 14 to 23 and live on a 400 acre farm (owning 280 acres and renting 120 acres). They grow 85 acres of corn and 100 acres of hay. The dairy herd consists of 74-cow grade Holsteins and 102 young stock with a butterfat of 600 lbs. They have a stanchion barn for milk cows, a pole barn for the young stock with free stalls, and a warm calf barn with separate stalls for each plus free stalls. All the animals have mats and all the manure goes in a manure pit. The cows are fed haylage from the Harvestor and H.M.E. corn and the young stock are fed mostly corn silage. Very little hay is fed.

The Mahrs belong to the St. Joseph Church, are members of the FFA alumni and chairmen of the fund-raising auction. They also chair the church auction.

Gerhard (Gib) and Esther Mathison  
Route 3, Box 345  
Thorp, WI 54771

Gib and Esther have never traveled in the eastern states and are interested in seeing North Carolina and Virginia. The Mathison farm consists of 120 acres of land on which they grow 10 acres of corn, 11 acres of oats, and 29 acres of hay. They have 22 young stock. They raise dairy cattle and sell them when they are ready to freshen.

Semi-retired, they sold their dairy farm to one of their sons ten years ago. Gerhard and Esther have five children and fourteen grandchildren, who they enjoy very much. They enjoy fishing and hunting and are members of the Stanley Saviors Lutheran Church and are active in ALCW Bible Study and prayer groups. Gerhard serves on the Stanley School Board, Town Board, and is chairman of the town of Worden. Esther is vice-president of the ALCW in church, is in a sunshine club, volunteers for the blood mobile and the Victory Memorial Nursing Home and Hospital in Stanley.

Clyde and Norma Moulton  
Route 2, Box 146  
Rush City, MN 55069

The Moultons are curious to know how dairymen in the eastern part of the country are making it in this economy. They say they will also enjoy seeing the fabulous scenery they have heard and read so much about.

The Moulton farm consists of 510 acres: 113 acres of corn, 175 acres of hay, and 113 acres of P.I.K. set aside land. They own a dairy herd of 70-cow grade Holsteins and 110 young stock. Their cows are bred by A.I. by the Midwest Breeders Association. They use a bunk feeding system with haylage and corn silage and also feed high moisture corn. They are in the process of building a new stall barn which will house the cows with New York tie stalls and will have a liquid manure system. They raise all of their own replacement heifers and dairy steers.

Clyde and Norma have six children ranging in the ages of 21 - 37. They enjoy spending time with their eleven grandchildren. Norma is on the Church Service Committee and enjoys sewing and artwork. They both belong to American Dairy Association.

Lloyd and Mary Mundt  
Route 3, Box 64  
Waseca, MN 56093

The Mundts are looking forward to a vacation. They also want to bring back some ideas they can use to improve or expand their dairy operation.

The Mundt farm consists 133 acres of corn, 50 acres of beans, 53 acres of alfalfa, and 20 acres of oats. Their dairy herd consists of 56-cow grade Holsteins and 67 young stock. The herd averages 16,400 lbs of milk and 574 lbs of butterfat. They use A.I. on all cows and heifers. Only Holstein bulls are used. Housing is in stanchions. They feed haylage, corn silage, and high-moisture ground corn but plan to feed mostly haylage as they get more pure alfalfa in the silos. They sell grade A milk and have pipeline milkers and an 800 gallon bulk tank.

Lloyd and Mary are members of St. Paul's Lutheran Church and are 4-H leaders. They have four children between the ages of 12 and 19.

Maynard and Elna Nessman  
RR #2  
Kensington, MN 56343

The Nessmans are excited to see a part of our beautiful country. They always feel there is room for improvement and hope to learn something they can use on their dairy operation.

Their farm consists of 460 acres of land on which they grow 120 acres of alfalfa, 150 acres of corn, 70 acres of oats, and 20 acres of barley. The herd consists of 71 grade Holstein cows and 122 young stock. They are in partnership with their two sons. They have pipeline milking and comfort tie stalls. They are in the process of building a new milk room this summer. The herd averages 18,720 lbs of milk and 608 lbs of butterfat. They do their own A.I. and raise all their cattle. They have the milk cows and little calves on the home place until they are weaned and then they are moved to their sons farm where they are either raised as replacement heifers or sold as springers. They feed out the steers.

The Nessmans are members of DHIA and Kensington Lutheran Church and are active in the American Legion and its auxiliary. Maynard enjoys reading and sports and is on the Land O'Lakes Creamery Board, Cemetery Board, and FHA County Committee. Edna enjoys flowers, making quilts and lefse, and decorating cakes. She is Stewardship Secretary and is active in L.C.W. They have four children and enjoy their eight grandchildren very much. They are expecting their ninth grandchild in July.

John and Rita Schloegel  
Rt. #1, Box 210  
Lewiston, MN 55952

The Schloegels own a 198 acre farm on which they produce corn, hay and oats. Their herd consists of 70 Holstein cows and 70 young stock. They have a double four-herringbone parlor. Their children have all decided to leave the farm so they are now in the process of consolidating to a smaller herd.

John is a member of the Knights of Columbus and they both enjoy fishing, Rita likes crafts and gardening. They enjoy meeting new people to share ideas and traveling with people who have the same interests and background. This they find is a most enjoyable experience. They have four children between the ages of 21 and 29 and they have five grandchildren.

Walter and Evelyn Schneider  
R. #1, Box 223  
Kimball, MN 55353

The Schneiders have a 300 acre farm on which they grow corn, oats and alfalfa. Their dairy herd consists of 35 Holstein cows (which they milk all year round) and 62 young stock. They have a conventional stanchion barn. The cows are on a feeding program with Moorman feeds.

Walt has a team of Belgian horses and plans to enter them in several parades. He is a church trustee and usher. He's also a member of the local recreation club and he and Evelyn follow the local amateur baseball team. Evelyn does some fishing as a hobby and likes sewing and making quilts. She also has a large garden. They are interested in seeing what dairy farmers in other states are doing. They have three children between the ages of 21 and 25.

Glen and Margie Schoenbauer  
24820 Drexel Avenue  
New Prague, MN 56071

The Schoenbauer farm consists of 140 acres of land on which they grow 60 acres of alfalfa, 40 acres of oats, and 30 acres of corn. The dairy herd consists of 75 grade Holstein cows and 95 young stock. The herd averages 16,600 lbs of milk and 666 lbs of fat. They have a 60 cow tie stall barn with two dry cow lots outside, one free stall, plus housing for cows with leg problems. They do their own A.I. They feed H.M. corn and haylage from sealed storage; they have one sealed unit for oatlage and stalklage which they feed to dry cows and bred heifers.

The family belongs to the Catholic Workmen Association. Glen is a lay minister in their parish, St. Wenceslaus. He is currently serving on the parish council. Margie is a member of the Ladies Guild and is currently chairman of Blessing Seeds and Soil. They both love to travel. They thought this would be a good opportunity to see how other dairymen in other parts of the country live and operate and maybe get some new ideas. They also want to escape from the daily routine. Glen and Margie have six children between the ages 21 and 13.

John and Wilma Schwanke  
Route 1, Box 94  
Grey Eagle, MN 56336

John and Wilma like to see new areas of the country, see how other farmers are doing things and would like to pick up ideas to use on their farm. They say they need a vacation and feel this trip offers a learning experience in their lifestyle as well as a vacation. On 220 acres they grow 90 acres of corn, 35 acres of oats, 65 acres of hay, and have 30 acres of meadow. The dairy herd consists of 40 registered and 8 grade Holstein cows and 40 young stock. The herd averages 16,644 lbs of milk and 637 lbs of butterfat. The Schwankes use A.B.S. breeding in a family operation housed in a stanchion barn with automatic feed and manure handling systems.

They have two children ages 24 and 17. Wayne (the youngest) is interested in taking over the farm. They are members of the St. John's Lutheran Church, MCCL, and Homemakers. Their hobbies include deer hunting, fishing, gardening, food preservation, and growing plants and flowers.

Ronald and Cathy Seitz  
Route 2, Box 153  
Sleepy Eye, MN 56085

Ron and Cathy want to see how dairy farming is done in North Carolina and see what the climate is like.

The Seitz farm consists of crops such as corn, oats, soybeans, and alfalfa. The dairy herd consists of 50 grade Holsteins and 60 young stock. They also have 65 steers, Holstein-and-beef cross. The farm has a stanchion and tie-stall barn, pipeline milking, liquid manure pump, and a 125 x 125 earthen manure pit. Calves are started in individual calf stalls for six weeks. All heifers go through the dairy herd.

They belong to Mid-America Dairymen, NFO, Brown County DHIA and Midwest Breeders Co-op. Ron is an usher at church. Cathy is a 4-H leader, member of the Sigel Extension Club and likes to crochet, hardinger, collect coupons, and sew. They have three children, age 17, 15, and 6.

Lyle and Bernita Seitzer  
Route 1, Box 52  
St. Peter, MN 56082

The Seitzers look forward to seeing good dairy land and beautiful country and sights. They also hope to see their old ag teacher at the University of North Carolina.

They manage a dairy herd of 60 registered Holstein cows that produce an average of 18,200 lbs of milk and 635 lbs of fat. They have 100 young stock, and feed out Holstein steers. Their herd is on ABS Progency Test Program. Their feeding system is made up of haylage from the Harvestore with high moisture shelled corn and corn silage. They have a tie stall barn, pipeline milker with mats and grates, piston pump and an earthen lagoon.

This year they farm with their son Bill with help from Peter, who will graduate in June from Waseca Technical College. In January, Lyle plans to retire when Peter and Bill will take over the 360-acre. Lyle is the director of the Farm Bureau, The Federal Land Bank of Mankato, and DHIA of Nicollet County. They both enjoy dancing, bowling, traveling, card playing, and their 10 grandchildren. Lyle and Bernita have seven children.

Verndale Selchow  
R #1, Box 101  
Lester Prarie, MN 55354

Verndale has a 176 acre farm which he produces corn, alfalfa, and oats. He leaves 20 acres for meadow. His milking herd consists of 39 varied grade Holstein cows and 20 young stock. His rolling herd average is 14,933 M, 3.6 test and 535 BF. He has a tie stall barn with a pipe line milker. Three silos contain haylage and corn silage. He using straight out bunk from the silo plus a fence line bunk and feeder wagon. He uses Minnesota Valley breeding. Among future plans, he'd like to add a warm calf barn to his operation. He also runs a 200 hog, farrow-to-finish operation.

Verndale is a member of the Farm Bureau, is the secretary of Hutch - Litchfield zone of the Lutheran Layman League (LLL) and enjoys hunting and traveling. He hopes to get some ideas on calf barns on this dairy tour. He and his wife have six children between the ages of 12 and 24.

Richard and Elizabeth Stehr  
Route #2, Box 101  
Zumbroto, MN 55992

The Stehrs grow corn, hay and oats on their 200 acre farm. Their son, Jon, rents another 100 acres. They have 90 Holstein milking cows and 80 young stock. They are currently milking all 90 head with none dry. Their herd averages 17,200M with 646 BF. Their barn is an 80-stall cold housing facility. The milking parlor features a 6-stall side opening Surge with four milking units and two prepstalls. They feed haylage, high moisture corn, corn silage and baled hay. All their breeding is A.I. with Midwest Breeders Assoc. In addition to the cows, the Stehrs have 48 head of sheep.

Richard and Elizabeth have been on three previous dairy tours and been very pleased with them "from every standpoint." They are looking forward to the educational and vacation benefits from this tour. They have one son and three daughters ranging in age from 21 to 9.

Duane and Tina Stradtmann  
RR3, Box 231  
Glencoe, MN 55336

The Stradtmanns have a 240 acre farm on which they grow alfalfa, corn and oats. On their farm they have 49 grade and six registered Holstein milking cows and 60 young stock. They have a 50-stall tie barn with loafing shed. Duane does his own breeding by AI using bulls from various companies. They feed out all their bull calves and own a horse and a 3-legged dog.

The Stradtmanns are involved with McLeod County DHIA and the Holstein Association and are 4-H club project leaders. They enjoy bowling and belong to a mixed-couples league. Their three children (ages 18-13) go to a Lutheran high school in Mayer, Minnesota and are active in many sports.

They are going on this trip to get an idea of how other dairies operate. They also want to see new and different parts and climates of the country plus have a good time with new friends.

Dan Topp  
RR #1, Box 210  
Eden Valley, MN 55329

Dan farms with his father on a 720 acre farm on which they grow 300 acres of corn, 150 acres of alfalfa, 40 acres of soybeans, and 50 acres of oats. The herd consists of 100 grade Holstein cows and 200 young stock.

Dan is looking forward to a vacation and to learn about other dairy operations.

Glenn and Agnes Tuma  
R2, Box 148  
Montgomery, MN 56069

The Tumas own a 410 acre farm on which they grow corn, alfalfa, soybeans, barley. They have a total of 65 grade milking cows and 70 young stock Holsteins. They belong to the DHIA testing association and breed with Midwest Breeders. The dairy housing is a tie stall with an automated feeding system. The cows are fed from two Harvestors and one stave silo. All the bull calves are kept and fed out as steers. As of now, the Tumas have no future plans to expand.

Their hobbies include fishing, camping, hunting and traveling. They belong to the Holy Redeemer Catholic Church. They have two sons, age 16 and 13. The Tumas have never seen North Carolina. They want to see its dairying methods to get different ideas. This trip provides a nice break in the season.

Duane and Pauline Vatsaas  
Route 1, Box 154  
Thief River Falls, MN 56701

Duane and Pauline enjoyed their first trip last year so much that they are taking another. They have relatives in this part of the country they would like to see as well as to understand how they farm.

The Vatsaas dairy herd consists of 48 grade Holstein cows and 65 young stock. The herd averages 17,000 lbs of milk and 624 lbs of fat. They have a tie stall barn with a pipeline milker. The feed consists of barley and oats concentrate and alfalfa hay. They do their own A.I. breeding and raise their own replacement heifers. The Vatsaas farm consists of 520 acres of land on which they grow wheat, barley, oats, and alfalfa.

Duane and Pauline have four girls ages 16 to 27 and two grandsons. They enjoy bowling and are active in their country church on the stewardship committee, are Luther League advisors, and sing in choir. Pauline is active on the ALCW and Duane is on the church council, is sec/treas of the local American Dairy Association, on the ASCA county committee, Pennington County Shipping Assoc., and Pennington DHIA.

Curtis and Carol Wegner  
Rt. #3, Box 359  
Paynesville, MN 56362

The Wegners operate a 700 acre dairy farm. They have set aside almost 200 acres for PIK, and on the rest they grow corn, alfalfa and navy beans. Since last year, the Wegner's herd has increased from 150 to 165 and the average went from 14,500M to 17,500M this year. Butterfat has also increased from 535 to 635. They attribute this increase to several factors: the cows are being milked three times a day, they use A.B.S Genetic Mating Service to breed, and they use a computerized feeding system. Curtis and Carol farm by having a limited partnership with their daughter, Jean, and their son and daughter-in-law, Tim and Nancy.

Curtis is chairman of the board of Cenex in Paynesville and is on the advisory board of Stearns Electric. He is also on the advisory board of the adult Ag. at Paynesville High School. Curtis and Carol enjoy bowling during the winter. They have five children between the ages of 17 and 31 and eight grandchildren, all of whom live within 15 miles of them. They are "looking forward to visiting with other dairy farmers, both from Minnesota and North Carolina, comparing and getting new ideas." They are also eager to view a new part of the country since they have not traveled much, they write.

Timothy and Nancy Wegner  
Rt. #3, Box 361  
Paynesville, MN 56362

The Wegners farm a 500-acre lot, 150 acres which is set aside for PIK, and the rest for growing alfalfa, corn and navy beans. Their dairy herd consists of 165 Holsteins and 200 young stock. The herd average is 17,400M and they milk three times a day. They house their cows in a free stall barn and use double-six herringbone milking parlors and rely on a computer feeding system.

Tim says he does not have any special hobbies, just anything he can do in the "little spare time" he has. He and Nancy hope to learn more about dairy farming and see how people in other parts of the country run their productions. He adds, "Besides, we need a vacation". They have two children, a two-and-a-half, and a four-year-old.

Robert and Beverly Weness  
Route 1, Box 32  
LeRoy, MN 55951

The Weness farm consists of 320 acres of land on which they grow alfalfa, corn, and oats. The herd consists of 20 registered and 40 grade Holstein cows. Beverly does the A.I. They feed from the Harvestores. Long stem hay is also fed. Milking, which they do three times a day with the 40 top producers, is done in 40 tie stalls with pipeline. They have an insulated, ventilated L-shaped addition to the barn which has 59 free stalls and indoor feeding. They have a liquid manure system where both cattle and hog manure is pumped to a 6223 slurrystore. Herd health is high priority. Calves are raised in hutches. Beverly has a flock of 70 sheep and raises registered quarter and Appaloosa horses. They finish 800-1,000 hogs a year.

Beverly enjoys playing piano, guitar, autoharp, and doing ceramics and raising foals from her mares. Bob likes to bowl, serves on the township board, has been on the DHIA and Mower County Holstein board, and church council. He likes to attend Holstein sales, farm sales, read and watch T.V. They are members of the LeRoy Lutheran Church. They have two boys aged, 14 and 10. They are going on the tour to relax and spend time with friends. They hope to gain information on calf housing and will enjoy seeing how dairying is done in North Carolina and the Smokey Mountains.

Duane and Marilyn Windhorst  
RR #1, Box 124  
Mazeppa, MN 55956

The Windhorsts have a 820 acre farm, 100 acres of which they rent. They grow corn, oats and alfalfa. They have 160 Holstein milking cows. They house them in a cold free stall barn and feed them haylage - corn silage and mash from an alcohol plant. The herd averages 19,700M and runs 3.2 average B.F. ration. Their future plans depend on milk prices and farm programs such as P.I.K. They also fatten out about 80 Holstein steers every year.

Duane is on the local District 809 school board, Plainview Milk Producers Board, the Lions Club and The American Legion. He enjoys cycle riding and playing cards. Marilyn is in the ladies aid and is active in church. She enjoys bowling, horseback riding, cycle riding and is a calf raiser. The Windhorsts hope to see round bales incorporated successfully in dairy rations. They have three children, ages 23-15.

Carl and Lois Annexstad  
Route #3, Box 28  
St. Peter, MN 56082

The Annexstad's farm consists of 280 acres on which they grow corn, alfalfa and oats. Their dairy operation consists of 60 Holstein milking cows and "100 or so" young stock. A rolling herd average is 17,770M and 635BF. The cows are housed in a tie stall barn and fed high moisture corn, haylage from Harvestores. They feed out the Holstein steers and raise replacement heifers.

The Annexstads are members of the church council, are 4-H former leaders. They belong to the Farm Bureau and have political involvements. They enjoy sports, music and the theatre. They have five children between the ages of 17 and 26. Two of their sons are in college, one of them finishing this summer and the other starting grad school in September in Animal Science. One daughter is at Luther College in Iowa, one is going to University of Nottingham in England, and the other one is in Norway on a 4-H "Outward Bound" program. The Annexstads want a vacation from milking and to get ideas. They are also excited about meeting interesting people.

Gene Bertram  
RR #1, Box 53  
Warsaw, MN 55087

Gene owns a 280-acre farm on which he grows 80 acres of corn, 35 acres of alfalfa, and either rents out or rests the remainder of the land. His dairy operation consists of 78 Holstein milking cows and 70 young stock. The herd averages 21,335M and 807BF. They are housed in a 54 tie-stall barn and are fed haylage, corn silage, baled hay and high moisture shell corn. He has just put in a cable-ray feeding system which feeds the cattle eight times a day. Depending on the help he can get, he is thinking of putting in a parlor because of knee problems. He has a slurry system for a main barn. He uses A.I. bulls and is proving out his own herd sire. He also has some bulls in studs.

Gene enjoys taking pictures of his children, playing softball, bowling, dancing, and studying pedigrees on bulls and genetic wood. He is a member of Trinity Lutheran church and ushers if he's needed. He is a member of Rice D.H.I.A., Holstein club, the local co-op, the Moose Lodge, and Rice County Farm Bureau. He says he needs a vacation and being around people that have the same interests. He's always open for new ideas for the dairy operation and wants to decide if putting in a parlor is worth it or not. He has three children, ages 14, 5 and 3.

Lionel and Helen Boldthen  
Rt. #1, Box 167  
LeSueur, MN 56058

The Boldthens produce corn, alfalfa and soybeans on their 230 acre farm. Their dairy production consists of 75 Guernsey cows and 80 young stock. The cows are housed in a controlled environment setting with a parlor. They are fed haylage and high moisture corn from harvestores.

Lionel and Helen have two sons.

Stanley and Rosemary Leger  
Route #6, Box 123  
Princeton, MN 55371

The Legers produce corn, alfalfa, oats and soybeans on their 200 acre farm. Their dairy operation consists of 52 Holstein milking cows and 43 young stock. They use a bunk feeder and lagoon and the cows are housed in a tie stall barn. A rolling herd average is 20,350M and 756BF of 104.9.

The Legers are members of the Catholic Church and the Knights of Columbus. Stanley is the director of East Central Association and a member of D.H.I.A. and Farm Bureau. They have nine children between the ages of 26 and 13.

Jere and Barbara Lundberg  
Rt. #2,  
Princeton, MN 55371

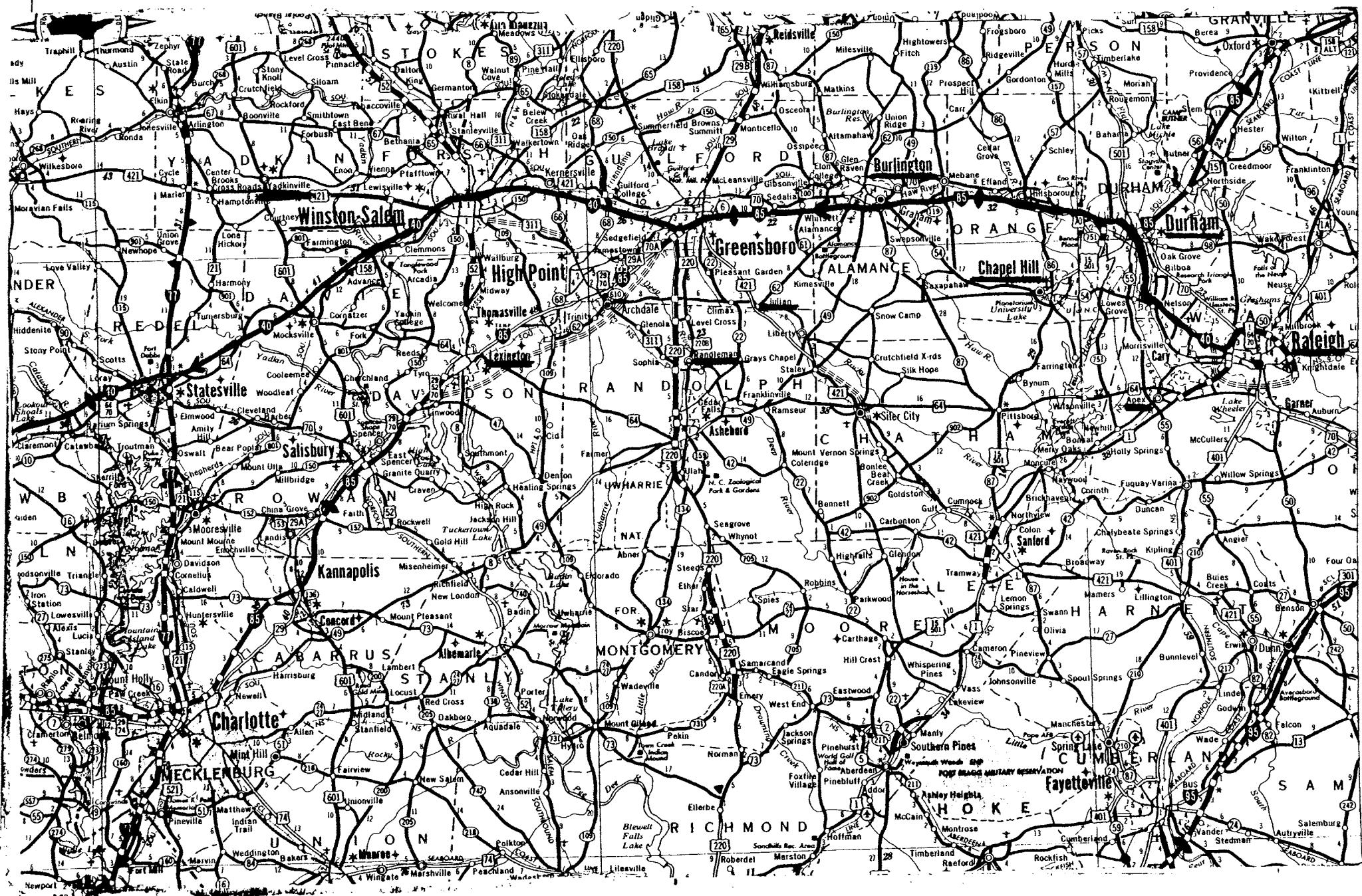
The Lundberg's 275 acre farm produces 75 acres of hay, 60 acres of corn, 25 acres of oats and the rest is on P.I.K. this year. They have 40 Holstein cows and 40 young stock. Their D.H.I.A. rolling herd average is 16,741M and 627BF. The cows are milked in a stall barn and are fed baled hay, corn silage, shelled corn and oat mixture. They breed with Midwest. They also belong to the adult farm management class. Along with their dairy production, they raise registered Hampshire hogs.

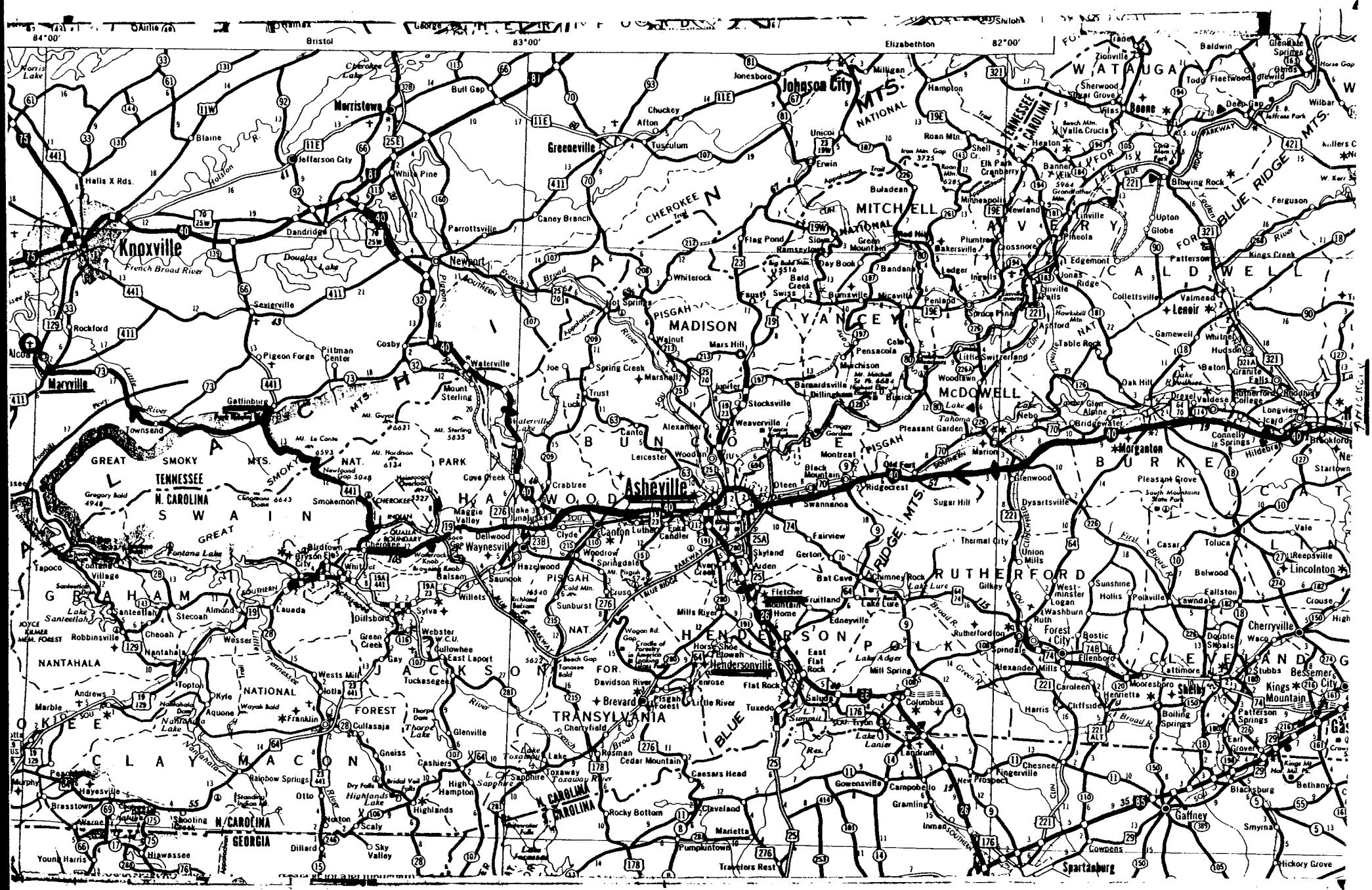
The Lundbergs belong to the Zion Luthern Church in which Barb is involved in a ladies circle and the Christian women's board. They are both involved in their 4-H club. Jere is treasurer of Princeton township, enjoys softball in the summer and belongs to the "500" club during the winter. Barb enjoys crafts and they both like bowling and watching their children play in their ballgames. They are looking forward to seeing other farming operations in a different area of the country. They want some time away and to see the country. Jere and Barb have three children between the ages of 11 and 5.

Reuben and Rose Wendt  
Star Route, Box 302  
Detroit Lakes, MN 56501

The Wendts grow alfalfa, corn, oats, and peas on their 407 acre farm, and over half of the land is used for pasture. They have 60 Holstein milking cows and 60 calves and heifers for replacements in their dairy operation. The cows are housed in a Grade A Stanton barn with a pipeline-clay feeder and an air liquid manure system with a lagoon. From the Harvestore structure, they feed haylage, oatlage, corn silage and high moisture corn. They use Minnesota Valley Breeders Association (MVBA) and raise heifer calves for replacements and sell all the bull calves.

The Wendts are active at St. John's Lutheran Church: elder, council, guild, Bible study, prayer groups and Sunday school. They also enjoy fishing, dancing and Rose likes to sew, crochet, quilt and decorate cakes. They also enjoy taking their children and 6 grandchildren on family gatherings, small outings and picnics. They would like to get ideas and information on milking parlors and improving their dairy operation while on the tour. They have four children between the ages of 20 and 25.





hours.

TRIP 3—Waterfall Loop via U.S. 441 to Cherokee, N.C.; U.S. 19 to Saluda; N.C. 28 to Franklin; N.C. 107 to Highlands-Cashiers; N.C. 107 to Sylva; U.S. 23 to Waynesville; return via U.S. 19 to Cherokee, then U.S. 441. Alternate 3-A. At Cashiers continue U.S. 284 to Brevard; N.C. 276 through Pisgah Forest to Waynesville, etc. On section, spectacular Whiteside Mtn. sidetrip enjoyed by many near Cashiers. 215 miles—8 hours.

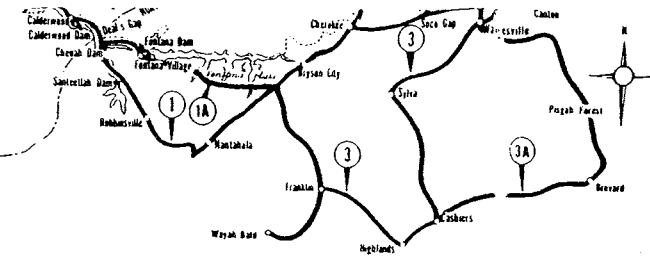
TRIP 4—Cherokee, N.C. trip. Over-the-Smokies on U.S. 441, at Newfound Gap taking Skyline drive to Clingman's Dome and back; at Cherokee, in season see restored Cherokee Indian village (Oconaluftee); Cherokee museum; Cherokee drama, "Unto These Hills" (late evening); up to Soco Gap on U.S. 19; out link of Blue Ridge Parkway to Mile-High Overlook; continue to Heintooga Overlook—both

to Sevierville; Tenn. 66 to Douglas; Tenn. 139 to U.S. 25W into Knoxville; U.S. 441 to Norris; 25W to Clinton; Tenn. 61 to Oak Ridge; return to Clinton; 25W into Knoxville; U.S. 441 to Gatlinburg; or Tenn. 73 at Knoxville, returning via Little River Gorge. 200 miles—8 hours.

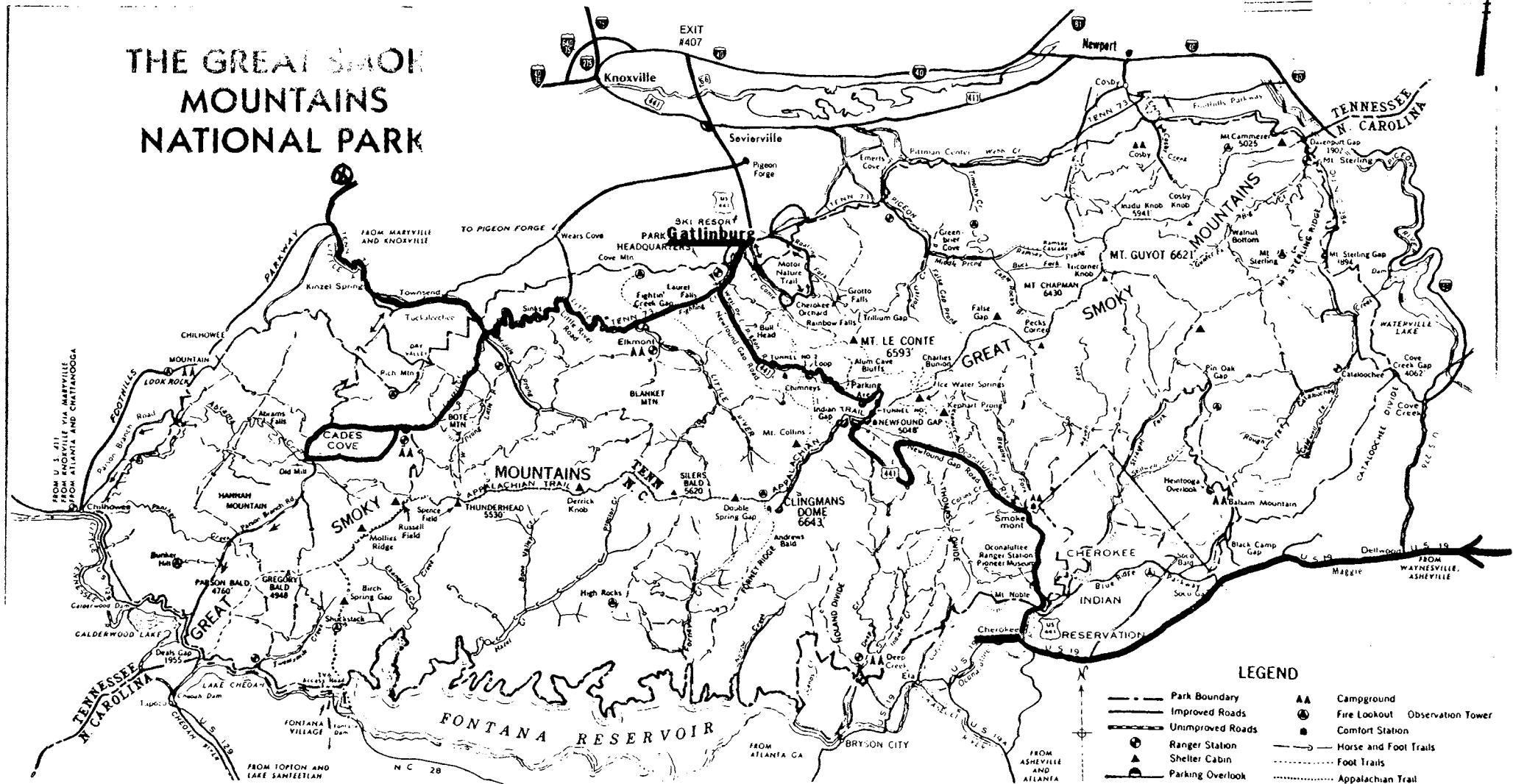
TRIP 7—Eastern Loop trip for experienced drivers used to mountain roads. Tenn. 73 to Cosby; Tenn. 32 to Davenport Gap; N.C. 284 to Delwood on U.S. 19 near Waynesville; return via Cherokee, N.C. Gravel roads between Cosby and Delwood. 175 miles—8 hours.

TRIP 8—Craft Loop trip. Visit the craftsmen in their shops on the Glades Road Loop. Out Tenn. 73 to Glades Road.

TRIP 9—Roaring Fork—Cherokee Orchard motor nature trail, have wilderness experience from your car. Airport Road to Cherokee Orchard Road.



## THE GREAT SMOKEY MOUNTAINS NATIONAL PARK



### LEGEND

- Park Boundary
- Improved Roads
- Unimproved Roads
- Campground
- Observation Tower
- Comfort Station
- ▲ Ranger Station
- ▲ Horse and Foot Trails
- Shelter Cabin
- Foot Trails
- ..... Parking Overlook
- Appalachian Trail

Triple R Farms Inc.  
Walter Ray Franke  
Rt. 6, Box 14  
Apex, NC 27502  
(919) 362-6496

Walter has 98 cows producing an average of 21,490 lbs of milk and 784 lbs of butterfat. Milk production pays the bills, he says. He has inquiries about his studs but because he doesn't classify, he doesn't qualify. The bulls are selected on feet, legs and milk production. Feed is 20% dairy pellets in the barn and 20% mash on silage. He feeds hay and silage twice daily. He treats all cows at drying off in udder and when freshened, worms and gives them vitamins. He vaccinates the calves at 6 months and worms as recommended by the vet.

Walter's farm is 160 acres of corn-silage, 30 acres of oats for hay, 10 acres fescue and no other cash crop enterprises. His barn is an 88 individualized stall, bedding line. His milking system is 5 individualized stalls, with side open gates. The brand is Deval and Muller 1,250 gallon tank.

Walter has three married children and two grandchildren. His son and son-in-law help with the field crops and milking. He is an active volunteer fireman and first-responder Medical assistant. He has received many awards on milk production and has been 4-H leader. He belongs to such committees as Farm Bureau Dairy Committee and Capital Area Milk Inc. Committee.

Edgewood Farm  
Miley A. Perry  
3416 Lke Wheeler Road  
Raleigh, NC 27603  
(919) 828-8101 or 833-0026

The Edgewood Farm of North Carolina is owned and managed by the Perry family: Miley, who operates the dairy farm; his wife, Nancy, a school teacher; eighteen-year-old Allison and Owen, who is fifteen. Owen helps out in various ways: he feeds, helps with the crops, and does anything else that needs to be done. Miley's mother, who lives on the farm "has also been a great help". The Perry family splits the farm chores with another family living at the Edgewood Farm. The two milk on alternate mornings and afternoons. The hired man scrapes the lot and hauls the manure each day, while Miley handles artificial breeding, keeps the records, tends the crops and keeps the farm in good general working condition.

The Perry farm has 50 acres of permanent pasture , 16 acres each of alfalfa, oats and soybeans. They have 95 Holstein cows, half of them registered, and the other half grade. The production is 17,932M and 500 BF. All the cows are fed in lot before or after milking; none are fed in the milking parlor. They have a double-four Herringbone barn, and use Surge - VSO milking machines with automatic take offs. All the feed is purchased and specially mixed. This is the first year Miley has raised any hay, alfalfa, oats or soybeans.

Cedar Grove Farm  
W.G. Caruthers, Jr.  
Rt. #2, Box 56  
Hillsborough, NC 27278  
(919) 732-7070

The Caruthers farm consists of 330 acres, 130 acres tillable, and 70 acres is rented out. The principle crop is corn for silage, some small grain and red clover and hay for clover silage and haylage. Their only farming enterprise is dairy.

The Caruthers have 125 cows in their operation. Milk production is 18,465M and 662 F. Their last classification was 104BAA and they earned the seventh Progressive Breeder award in 1982. Although they have a number of young bulls that have been sampled in A.I., only Cedar Grove's Golden Nugget has been used extensively. The cattle are consigned to six or eight sales in the southeast. Their showing is limited since it is mostly done by their daughters. All their cows are bred A.I. to top cows of the breed and they are also doing embryo transfers.

The Caruthers use free-stall housing and a herringbone milking parlor using six milking units with two people in the parlor. They use a Surge low line system with De Laval units with some modifications. All young stock are fed year round since they have only a small amount of pasture. They're using a mixer wagon for feeding dry cows and heifers. They use by-products such as dry brewers grain in their rations and their concentrates are blended with a small electric mill.

The Caruthers have four daughters between the ages of 16 and 26. Except for Sara, who is a junior in high school, the rest of the daughters are college graduates. Kathy graduated from NCSU in Animal Science and is presently working on a farm, Carol is an education major and one daughter is married and continuing her education in computer science. The Caruthers have an excellent family from New England working for them.

Maple View Farm  
Robert Nutter  
Route #3  
Hillsborough, NC 27278  
(919) 929-6397

The Maple View Farm has 119 Holstein cows, with milk production at 18,471 and 653BF (3.7%).

## HOST DAIRY FARMS

Lemola Farms, Inc.  
Everett and Lewis Cheek  
Route 4  
Chapel Hill, NC 27514  
(919) 929-2357

The Lemola farm is run by the grandparents, Lemuel and Ola Cheek, and two families, Everett and Hazel Cheek, daughter Jenny 19, son Michael 18, Lewis and Evelyn Cheek, daughter Katrina 17, Diane 15, son Kevin 11. They have no hired labor.

The Lemola Farms won a French trophy this past year for the second highest herd average for over 100 cows in the nation for Ayrshires. All the kids are active in showing and judging. Jenny, Michael, and Katrina have judged in the National 4-H judging contest in Wisconsin. Jenny was 1st individual overall in 1980, Katrina and Michael were in the top 30 in 1981 and 1980. The family frequently takes Premier Breeder and Exhibitor honors at the North Carolina State Fair. Their cattle attracts buyers from Florida to Idaho to Maine.

The Lemola farm consists of 80 acres of clover, orchard grass, some rye, and sudan grass. They have 200 acres on which they grow alfalfa, orchard grass, fescue, small grains, and trudan, all used for hay. No silage or haylage is grown or fed. Twenty percent pellets are fed in milking barn according to production.

Calves are all raised, they do not buy any females for replacement. Two bulls are used for studs. They have three people who can breed cows. They use A.I. on all heifers and cows. They have pole barns, a 100 x 80 cow barn, hay barn, free stalls, and a 90 x 93 hay-heifer barn. They have an old style stanchion barn, DeLaval milking equipment where they can milk six cows simultaneously. They have had registered Ayrshires since 1940.

Keck's Dairy, Inc.  
LeeRoy and Betty Keck  
Route #3  
Julian, NC 27283  
(919) 685-4421

The Keck's dairy farm is run by the family including LeeRoy; his wife, Betty; their sons, Mickey and Mark. Mickey's two sons, Brian and Barry also help out. The farm consists of 208 acres of their own land and 223 acres of rented land. They grow corn, oats, wheat and rotate with soybeans every other year. Their dairy operation includes 122 cows on test and present production is 20,358M and 713 BF. All the cows are Holsteins plus they raise all their own heifers. They are bred A.I. using Midwest, A.B.S. and select sires. The cows are housed in motel-type freestalls with sand and lime used for bedding. The dry cows are placed in a separate area. A large barn was converted into a double-six herringbone operation and a Bomatic low line is used. They have upright silos, using mixer wagons to feed the cows corn silage (ave. 50 lb./cow). Their manure system is stored in a "pond" and doubles as fertilizer later. LeeRoy adds, "My wife calls it something else." LeeRoy emphasized that the farm is very much a family operation and he is proud of that.

Buttke Dairy Enterprise  
Arlin Buttke  
Route #1  
Randleman, NC 27317  
(919) 498-7032

Arlin has 576 Holstein cows with production at 16,306M and 551BF (3.5%).

Hillyn Dairy Farm  
H.L., Doris and David Hill  
R. #8  
Lexington, N.C.  
(704) 731-6503

The Hillyn dairy farm consists of 50 cows, are bred and raised on the farm. Last year's herd average was 18, 759 M, 696 BF. They farm 1,200 acres producing soybeans, corn, wheat, oats, and barley, and 100 acres of which they grow alfalfa and orchard grass for hay. Much of the hay and grain is sold each year.

The Milk House  
Wiley Shore  
Route #1, Box 430  
Yadkinville, NC 27055  
(919) 679-2253

The Milk House dairy farm has 104 Holstein cows which produce 12,527M and 463 BF (3.8%).

Cherub Jersey Farm  
Major and Lou Bond  
Route 1, Box 215  
Hickory, NC 28601  
(704) 294-4240

The Bonds are co-owners in partnership, Major does most of the physical work, Lou the office work. They are co-recipients of the American Jersey Cattle Club Young Jersey Dairymen 1981 award. Lou is the secretary/treasurer of Carolina Jersey Milk Marketing Association and Major is director of NC Jersey Breeders Association. They have a three year-old son, Charlie. The Bonds started their dairy farm in spring of 1978, leasing all 105 acres for pasture, hay and corn. They contract for planting but harvest themselves. They are gradually acquiring some farm equipment.

The Bonds operate strictly a dairy farm with 75 cows producing 13,277M, 608F and 499P. They are on the Jersey Total Performance Evaluation program with cows as follows: 1 Excellent, 29 Very Good, 35 Desirable, and 3 Acceptable. They show two or three shows each year for fun, but as of yet, they have no outstanding showing credits. They use only top A.I. breeding because they have no bulls on their farm. In 1982, their herd was rated number one for milk for Jerseys in North Carolina. Their Cherub Mercury Nutmeg cow was rated excellent and was 17th on the Cow Performance Index (a national list) and first for N.C. two year olds in milk production.

The milking parlor is Surge-double-3 walk through with three units. They use weigh jars and overhead milk lines. Their original milking system including old Surge equipment but have added a Choreboy vacuum pump, Germania units and Dairy Cool 1,000 gal. milk tank. The Bonds write, "the most wortworthy thing that we do differently from other N.C. dairymen is our "Lunch Bunch." Like most N.C. dairy farms, all of our milk cows are in the same group. Dividing cows into groups would require extensive physical changes. Because we hope to move to our own farm very soon and therefore reluctant to make expensive changes, we created the "Lunch Bunch." We stand at the gate and only allow certain cows to enter. This is a poor man's solution to grouping." This system increased their milk production (rolling herd average) 1,900 lbs. in a 12 month period, while grain feed was reduced. Although they are primarily a family farm, they have one full-time employee and two part-time employees. Their original investment five years ago for cows and equipment was about \$900/per cow.

Silverlane Farms, Inc.  
B.F. Nesbitt  
Rt. #2, Box 144  
Fletcher, NC 28732  
(704) 891-3398

The Nesbitt family consists of B.F.; Emily, his wife, who does the bookkeeping; son, Joe, a veterinarian who does the herd health work; Jack, who helps part-time; and Janet, age 26. They have 350-400 acres of corn. They have winter cover crops and the heifers graze in the winter. There are 200 cows; production is 17,200M and 656BF. They are doing some embryo transfers and using the better bulls from all studs. The cows have loose housing which consists of sleeping stalls. They use a double-six herringbone milking system and there are 12 units. Boumatic milkers are used. All feeding is done outside of the milking barn with a blender wagon.

THE MILK HOUSE  
Wiley Shore  
Route #1, Box 176  
Yadkinville, NC 27055  
(919) 679-8466

On the Milk House farm, 350 acres are farmed with 120 acres of corn, 40 acres of alfalfa, 80 acres of rye for cover crop to be sod planted, cut for rylage, or bailed for beef cattle. We do not raise grain. We have approximately 200 head of beef cattle. Eighty head of brood cow herd and in a feed lot keep 150 to 175 beef and Holstein steers on feed for sale to individuals for home freezers. The remainder of farm land is used for pasture.

We have a 104 Ft. x 128 ft. pole barn open on all sides with feed bunks in the center. Herd is divided into two groups with 68 free stalls on each side. Infirmary 24 ft. x 64 ft. with 16 free stalls and feed bunk. The milking type is Surge 12 stall trigon with auto take-offs and the milking system is V.S.O.

We are presently feeding a balanced ration of corn silage and 18% protein with a mixer blender. All grain is fed outside of the parlor. We hope when you arrive we will have installed a computerized Surge information feeding system. We have a liquid waste handing system, lagoon storage for 350,000 gal., spreader with injector (our farm joins the country club). New calves to two months are raised in individual calf hutches. A local inventor is working on an electronic heat detection system and has asked to use our parlor for trial. He hopes to have it installed by the time you arrive.

We have a fairly new operation(18 mo.) husband/wife partnership, with 100 cows on DHIA. We are overcoming some inherited problems with close attention to record keeping.

Brought from a former partnership half of cows at random (herd lost many good cows to bangs). Bought half cow herd at random and bought 50 young heifers. In this combination we had several old cows, low producers and new heifers to cull. All had to be trained to a new style milking parlor.

Are presently down to 13 mo. calving interval from  $15\frac{1}{2}$  mo. Do a monthly Vet check for pregnancy as well as general health and breeding problems. Breeding to Select Sires 90% bulls plus 1700 on milk and plus \$200.

Have reduced mortality rate of calves born alive from approximately 30% to only one calf since Dec.

With all our problems did make approximately \$20,000.00 the first year.

Wiley:

Member:

Yadkin Co. Dairy Club

Yadkin Co. Corn Growers Assoc.

N. C. Board of Agriculture

Advisory Board NCSU School of Agrigulture and Life Science.

Vice President N. C. State Fair Advisory Committee

Director:

N. C. Dairy Foundation

N. C. Farm Bureau Dairy Service Com.

Carolina- Virginia Milk Producers Assoc.

ADA of North Carolina

SouthEastern United Dairy Assoc.

Yadkin Co. Rescue Squad

Past President N. C. DHIA

Served 4 yr. on Governors Adv. Bd. for Agriculture, Forestry, and Seafood

Judged state 4-H Long time record books

North Carolina Outstanding Young Farmer 1974

Actively involved in church, community, and political activities.  
Is chairman and treasure of church cemetery.

Shelby

4-H Leader and judge District demonstrations

Chairman North Carolina Youth Advisory Council

Chairman Yadkin Co. Board of Education

Member Board of Directors N. C. School Boards Assoc.

Member National School Boards Assoc. Federal Relations Network

Member N. C. Dept. Of Transportation Clean Up Litter Steering Committee

Member N. C. Yearly Meeting of Friends (Quakers) Spiritual Life Committee

Member Executative Committee Friends United Meeting (international)

Member Yadkin Co. Family Planning Advisory Com.

Clerk Meeting Ministeries Commission Friends United Meeting (international) - presiding  
Elder of local church

Three children:

Donna Age 23

Graduate of Guilford College and Dana Scholor  
2nd Yr. Law student Campbell University School of Law  
Listed in 1983 Outstanding Community Leaders of America  
Received LBJ Internship in Washington D C  
Received internship with N. C. Dept. of Adminstration  
Was High School High Honor Student and Drum Major for band  
Won Essay contest with Yadkin Co. Soil and Water Conservation \$50.00  
Won Essay contest with electric companies (State) \$600.00  
Church organist  
Top state girl in livestock judging contest  
First place Fitting and Showing for livestock and dairy shows  
Blue ribbons showing livestock and dairy animals  
4-H I Dare You Award  
also District winner and state runner-up in Dairy Foods Demonstrations  
District and state winner in talent  
District winner in Canning Record Book and Public Speaking  
4-H college scholorship \$500.00

Works on farm during vacations.  
Feeds calves and drives silage trucks.

Walter Age 20

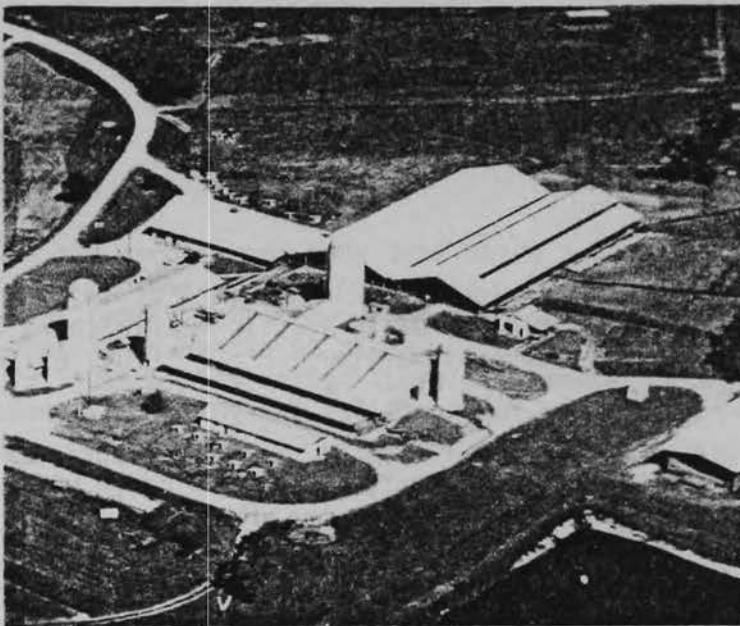
Junior at East Carolina University interested and doing transulation for deaf  
1983 judged 4-H Demonstrations for Pitt Co.  
East Carolina Choir and Marching Band  
Church soloist  
High School National Honor Society and Drum Major for band and Student Council  
Won blue ribbons showing dairyand livestock animals  
Won blue ribbons Fitting and Showing  
4-H I Dare You Award  
also District winner in Horticulture Demonstrations and Horticulture  
Illustrated Talks (several times)  
County winner in several catagories. Also Co. officer  
4-H college scholorship \$500.00

Works on farm during vacations.  
Does milking and field work. Also work on grounds.

Franklin Age 15

High School sophomore  
Member school band and FFA  
Jr. Volunteer Fireman  
4-H and FFA Livestock Judging Teams --Winner Northwest Jr. individual  
District winner 4-H Small Engine Demonstrations . Also Outstanding Camper  
Reserve Champion beef animal Northwest Livestock Show and Sale  
1983 Performance Index winner Jr. Division (beef)

Works after school and during summer.  
Milker and tractor driver.



North Carolina State University  
Research Unit 2  
3720 Lake Wheeler Road  
Raleigh, NC 27603

Mr. Roger E. Collins  
Mr. James W. Johnson  
Research Unit Supervisors

This is a new dairy research facility built to replace a facility displaced by the new School of Veterinary Medicine. The dairy herd was relocated during July of 1980. In general, the facility is a 200 cow free-stall unit designed so that considerable research can be conducted on a small group basis.

Some of the features of the unit are:

- (1) Two different types of free-stall barns
- (2) Two milking parlors - one for the routine milking which is a double six Surge system equipped with VSO detachers and back-flushing system, and the second is for research and teaching which is a single three-side opening parlor
- (3) Forty-eight of the stalls are equipped with Calan gates to permit individual cow feed intakes in a free-stall system
- (4) A drag scraper in combination with a solids separator

DHIA Herd Averages -

Herd 1 - NCSU Intensive Research Herd  
127 Holsteins, 13,340 lb milk, 479 lb fat, 3.2% fat  
Herd 2 - NCSU Genetic Research Herd  
85 Holsteins, 17,361 lb milk, 694 lb fat, 3.9% fat

Dr. Charles A. Lassiter, Professor and Department Head of Animal Science, Dr. A. H. Rakes, Professor of Animal Science (Nutrition) and Dr. B. T. McDaniel, Professor of Animal Science (Genetics) will discuss current research projects as well as some of their experiences with the facility.

Van Wingerden International, Inc.  
Established in Mills River 1972  
Mr James Gapinski, General Manager

Rt. #2,  
Fletcher, NC 28732  
(704) 891-4116

Greenhouses: (1) Metal frames in concrete flooring with two  
(2) layers polyethylene cover with metal and  
frame support buildings.  
(2) Approximately 570,000 sq.ft.(13 acres) at two  
locations - Hwy 191 and Jefferies Road.

Products: (1) Jefferies Road - Bedding plants, poinsettias,  
ferns, hanging baskets, cyclamen and other  
flowering potted plants  
(2) Hwy 191 - African Violets, chrysanthemums,  
foliage, staghorn ferns, cacti, bromiliads and  
other potted plants.

Market: Products are sold to florists, garden shops, chain  
stores, wholesale distributors and other growers,  
predominantly within a 400 mile radius.

## HISTORY OF NORTH CAROLINA

CROATOAN. This one word carved on a tree where a whole colony had been has fired imaginations for nearly four centuries. What it meant and where the "Lost Colony" was lost remain a mystery. But the course taken by the land the colonists were attempting to settle is clear. After a slow beginning, North Carolina has made full use of its varied terrain, climate, natural resources and people, and is presently enjoying its full share of wealth and success.

### HISTORY

Although French and Spanish explorers visited the region in the early 1500's, it was the English, 50 years later, who chose to colonize it. After an unsuccessful attempt in 1585, John White established a settlement at Fort Raleigh on Roanoke Island in 1587. Virginia Dare, the first child of English parentage born in America, was born here. But the colony vanished, leaving only that enigmatic work croatoan.

Colonists from Virginia made the first permanent settlement about 1660 at the Chowan River's mouth on Albemarle Sound. The colony grew rapidly, but the first town, Bath, was not incorporated until 1705. In 1728, after much conflict with a populace desiring fair representation, just taxation, honest officials and adequate courts, seven of the lords proprietors sold their holdings to the Crown. As a royal province, North Carolina entered its first period of real progress. Stable, well-enforced government fostered expansion in settlement and agriculture, improvement in transportation and education, and a higher standard of living for the diverse peoples flocking to the area.

Still, there were the omnipresent problems of trade, finance and religion. When they ultimately erupted into open revolt, North Carolina was the first colony to authorize her representatives to vote for complete separation from England. It actually fought the war on two fronts: one against the British and another against the Tories and Cherokees who turned the conflict into a civil war. Yet when the smoke cleared, North Carolina was the last state to ratify the Constitution (1789), demanding the inclusion of a clause guaranteeing religious freedom. One of the clauses was later incorporated into the original amendments and became part of the Bill of Rights.

Gradually the ethnic, religious and regional divisions subsided as representation and taxation were equalized between east and west. Between 1835 and 1860 North Carolina grew swiftly. Then the slavery controversy catapulted the reluctant state into war. It did not secede until May 20, 1861, after President Lincoln called for troops; thereafter, its commitment was complete. North Carolina furnished over 175,000 soldiers to the Confederate Army and lost more of them than any other southern state. Gen. Joseph E. Johnston's surrender on April 26, 1865, near Durham ended large-scale hostilities within its borders.

After the difficulties of Reconstruction, stable state government finally took hold. It, in turn, lost sight of the little man; the result was the Populist Revolt in 1894. Racial problems, focused on the franchise, continued into the 20th century. But the two world wars brought economic resurgence to the state - a trend that has shown no abatement.

## GEOGRAPHY

The Appalachian Highlands of western North Carolina, the Piedmont Plateau in the center and the broad eastern Coastal Plain form an unbeatable combination for everyone's vacation tastes. The Blue Ridge and Great Smoky Mountains, master chain of the Appalachian Range, converge in an area of unusual beauty. Forty-three summits reach over 6,000 feet in elevation; Mount Mitchell, 6,684 feet, is the highest point in the eastern United States.

East of the mountains, the Piedmont occupies almost one-half the state, sloping from an elevation of 1,500 feet at the base of the Blue Ridge to an average of 500 feet at the fall line. In the southeastern part of the Piedmont are the Sandhills, characterized by sandy soil and beautiful longleaf pine. Below the fall line, which wanders across the state from about Roanoke Rapids to Rockingham, is the level Coastal Plain. Lakes are numerous, especially in the shoreward part of this region; the largest lake, Mattamuskeet, covers about 30,000 acres. Part of the Dismal Swamp seeps into North Carolina north of Elizabeth City.

Albemarle and Pamlico Sounds are the largest of the shallow bays and lagoons that scallop the 320-mile coastline. Protecting them from the sweep of the sea are the Outer Banks, long, narrow barrier isles highlighted by Cape Hatteras, Cape Lookout and Cape Fear. Though stark shipwrecks bear witness to raging hurricane tides, the Outer Banks possess a sunny beauty that make them one of the East's most desirable vacation spots.

A product of this varying terrain is a climate that ranges from subtropical to nearly continental in the mountains, where snow is no stranger. The Sandhills region is noted for dry and bracing air and mild, invigorating winters.

## ECONOMY

Among the Southeastern States, North Carolina is first in value of manufactured products, in number of wage earners in industry and in wages paid. Its primary manufactures are textiles, tobacco products and wood furniture; income from tourism ranks with these leaders. One-half of the Nation's hosiery is made here. The electrical machinery, chemical and pulp and paper industries are expanding. Much of this activity centers around such Piedmont cities as Charlotte, Durham, Greensboro, Raleigh and Winston-Salem.

There is another dimension to industry in the Tar Heel State - the renaissance in the handicrafts of the Appalachians. Spreading from a nucleus at Asheville and along the Blue Ridge Parkway, the timeless arts of basketry, weaving, pottery and furniture making have gained nationwide acclaim.

Nonetheless, North Carolina is basically agricultural. It grows two-thirds of the Nation's bright-leaf tobacco. Corn is the second crop. Fruits, peanuts, potatoes, hay, soybeans, poultry and livestock are also important. Forests cover about 20 million acres; of this, more than a million are within the Croatan, Nantahala and Pisgah National Forests. The pine and gum woods of the east and the hardwood stands of the west comprise some of the most valuable timber in the region.

Commercial fishing is important in the coastal area, especially on Pamlico Sound. Oysters, shrimp, various food fish and menhaden are the main items. The earth yields some 300 minerals, of which 75 are found in commercial quantities.

Mica, feldspar, olivine, lithium materials, crushed granite and phosphate are the most significant. The reserve of lithium is said to be the largest in the country. One of the world's largest surface granite quarries, in the nature of a granite field, is near Mount Airy. North Carolina also possesses a rockhound's dream; Franklin is one of the few areas in the Nation where rubies are found.

Duke Homestead State Historic Site portrays the Duke family in the years just after the Civil War. The site includes the main house itself, which consists of a simple four room dwelling with a kitchen addition; the reconstructed first factory; the original third factory; two outbuildings; a tobacco pack house; and a curing barn. Owned and operated by Duke University for forty-three years, the Homestead was given to the state in 1974. A modern visitor center and museum are now being completed. This building will contain exhibits and programs depicting the history of the Dukes and of tobacco culture. Activities on the Homestead will demonstrate tobacco farming and the early manufacturing processes used by Washington Duke and his family during the 1860s and 1870s. An organization called Tobacco History Corporation has been formed to support the growing project at the Homestead, designed to tell the story of tobacco and its historical impact on North Carolina.



James Buchanan "Buck" Duke

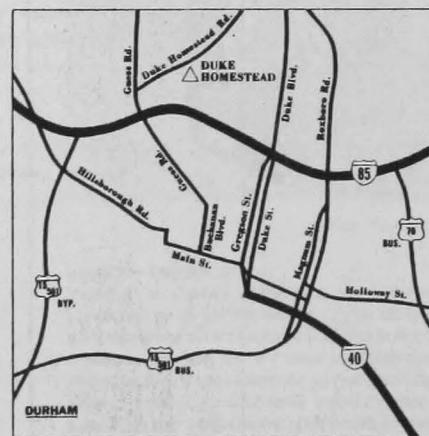


*Homestead Dining Room*

*Visitors Are Welcome*

Tuesday through Saturday 9:00 AM to 5:00 PM  
Sunday - 1:00 PM to 5:00 PM  
Closed Monday

Address: 2828 Duke Homestead Road  
Durham  
North Carolina 27705



## Duke Homestead



Ancestral Home of The Family  
Whose Name Became Synonymous  
With The Tobacco Industry in America

*administered by*

DIVISION OF ARCHIVES AND HISTORY  
DEPARTMENT OF CULTURAL RESOURCES

NORTH CAROLINA HISTORIC SITES

Tobacco's but an Indian weed,  
Grows green at morn,  
cut down at eve.  
It shows our decay.  
We are but clay.  
Think of this when you smoke tobacco.  
-colonial song

"Weed" always has been important to North Carolina, but it was the discovery of light-bodied Bright Leaf in the 1850s that began the state's modern tobacco history. The Civil War generated an increase in demand for this tobacco; after the war a tobacco manufacturing industry grew. By the beginning of the twentieth century, tobacco cultivation and successful business practices had combined to make North Carolina the center of a worldwide tobacco empire.

Washington Duke spent half of his life as an Orange County farmer. His first wife, Mary Clinton, died in 1847, leaving two sons, Sidney and Brodie. Five years later, Washington married Artelia Roney, and the couple moved into a new house on Duke's homestead. Three additional Duke children—Mary, Benjamin, and James, were born in this house which is well preserved. Artelia and her stepson Sidney died of typhoid fever in 1858, and Washington Duke was again a widower. A year or so later, he planted his first tobacco crop but soon decided to quit farming and manufacture tobacco products instead. By that time, however, the Civil War was underway; Duke, who was then forty-two, was drafted into the Confederate army before he could begin his enterprise.

The Civil War ended in 1865. Penniless, Washington Duke began a long walk from New Bern back to his farm. When he finally reached his homestead near Durham Station, he undoubtedly heard the news that the last major Confederate surrender of the war had been negotiated a few miles away at the Bennett

Place. At the same time that negotiations were taking place, Union and confederate troops were helping themselves to Bright Leaf tobacco stored in the area. Later, as civilians, these former soldiers remembered the fine smoking tobacco, their requests for more of the same helping to create a market for Durham area tobacco products.



Washington Duke

Washington Duke soon rejoined his children, and together they began a factory in a tiny log building on the homestead. Their product was smoking tobacco; cured Bright Leaf was flailed, sifted, and packed into cloth bags; a hand-lettered yellow tag bearing the words "Pro Bono Publico," meaning "for the public good," was attached to each bag. After a few months of work, Washington loaded a broken-down wagon with Pro Bono Publico, some chewing tobacco, and two barrels of wheat. He and his youngest son James, known as "Buck," then began a successful trip peddling these products in eastern North Carolina.

Within a few years, the Dukes' business had grown enough so that Washington needed a second and then a third tobacco processing factory at the homestead. In 1869, with his father's help, Brodie Duke began a small smoking tobacco factory within the town of Durham, taking advantage of the railroad shipping service and the farmers' tobacco market there. Washington Duke moved his own operation to Durham in 1874.

Duke and his sons formed a successful business team and began, in the 1880s, the first mechanical mass production of cigarettes. With this advantage, the Duke family eventually controlled the largest tobacco company in the world. Some profits from their huge empire were invested in other fast-growing southern industries, particularly in textiles and hydroelectric power. Other profits were used for humanitarian causes: churches; hospitals; and colleges including Trinity, later to become Duke University, benefitted from contributions.



Tobacco Pack House

## GENERAL CHARACTERISTICS OF THE STATE

North Carolina's total land area is approximately 31.2 million acres of which about 37 percent is farmland. Of the total land in farms, about 5.6 million acres are in harvested cropland and open pasture, 4 million in woodland and 1.8 million acres in other land, including cropland not harvested, farmsteads and wasteland (U.S. Bureau of the Census, 1980).<sup>1</sup>

The remainder of the land area is used for national and state parks and recreational areas, urban development and public roads.

Soil, topography, climate, availability of markets and alternative uses for available capital and labor are decisive factors in determining the types of commodities produced and the system of production used on farms.

North Carolina extends from the Atlantic Ocean westward through the Piedmont and almost across the Appalachian mountains. The wide variation in its soils and topography permits a broad range of adaptability to crop and livestock enterprises.

### Soils

A generalized geological map of North Carolina is presented in Figure 1 and soil association areas are shown in Figure 2 (Lee, 1955).<sup>2</sup>

The soils of the lower Coastal Plain range from fine sandy loam to silt loam with a subsoil of sandy loam to silty clay. Generally, they are medium textured with friable to moderately firm subsoils. Large portions of the lowlands in the Coastal Plain and Tidewater are poorly or imperfectly drained, but when tiled or ditched, the soils are excellent for production of some horticultural crops, corn, soybeans and pasture.

Soils of the middle and upper Coastal Plain are chiefly sandy loams with friable sandy loam to moderately firm sandy clay loam subsoils. In general, they drain well and are especially suited to the production of flue-cured tobacco, peanuts, cotton and various grain and forage crops.

Piedmont soils are characterized by firm, but readily broken, clay subsoils and lighter-textured surface soils which may be sandy loam, silt loam, sandy clay loam or clay loam. In most cases, the latter two textures are the result

of accelerated erosion. The clay-type or heavy-textured soils are used mostly for small grain, forage crops and pasture. The sandy or lighter soils are especially prized for the production of flue-cured tobacco. The silt and sandy loams, or the intermediate-textured soils, are planted in corn for grain or silage production.

In the Mountain section, loam soils with loam to friable clay loam subsoils predominate. The light- to medium-textured soils, coupled with the favorable climate, are well adapted to pasture, hay and forage crops and, where slope permits, to vegetables, apples, corn and burley tobacco.

Strips of first and second bottom soils, highly desirable for corn, horticultural crops and pasture, are located along most of the streams of the state.

There are a large number of soil areas in the state generally not considered suitable for agricultural use. In the lower Coastal Plain and Tidewater areas such soils are found in swamps, bays and pocosins. These soils are difficult to drain and to maintain after draining. Some of the wet bottomland areas of the state are too low-lying for successful drainage and are subject to occasional overflow. In the upper Coastal Plain are areas of deep sand, especially in the Sandhill region, which are subject to severe leaching as well as drought. These areas are susceptible to wind erosion. Some portions of the Piedmont have very gravelly or stony soils or thin soils underlaid with rocks. Also, some soil areas in this region are severely eroded, gullied, steep or otherwise undesirable for agricultural purposes. Nonagricultural soil areas in the Mountains result from steepness or high stone content of the soil.

### Topography

Lay of the land has an important influence on farming. Flat or nearly flat land is apt to be poorly drained. On these soils, the runoff is often so slow that artificial drainage is required. On the other hand, rolling to steeply rolling lands usually have rapid surface runoff which results in soil loss unless protective measures are established. Rough relief results in small, steep, irregular fields which are difficult to cultivate and unsuited to mechanized equipment. However, steep and irregular land may be used for pasture where it is part of an economical farm unit.

There are three distinct physiographic areas of North Carolina. They are the Coastal Plain, the Piedmont Plateau and the Mountains.

<sup>1</sup> see list of references

<sup>2</sup> see list of references

The Coastal Plain occupies nearly 45 percent of the state's land area. Elevations range from sea level in the Tidewater section to 200 feet where the Coastal Plain borders the Piedmont. In the Sandhills, elevations are 400 to 650 feet above sea level.

The Piedmont, occupying almost 39 percent of the state, has a general elevation of 500 to 900 feet, ranging from about 300 feet along the border of the Coastal Plain to about 1,200 feet at the foot of the Blue Ridge mountains.

The Mountain region, covering the western 16 percent of the state is characterized by large changes in elevation over short distances. The extreme range is from 1,200 feet at the foot of the Blue Ridge to 6,684 feet on the summit of Mt. Mitchell. Most of the valleys and low mountain areas are about 2,200 to 2,800 feet above sea level.

#### Climate

The long east-west axis and the wide variation in elevation result in a climate which varies considerably across the state. However, the climate is generally characterized by a long growing season, usually abundant and well-distributed rainfall and conditions generally favorable to agriculture.

The average mean annual temperature is 60°F for North Carolina as a whole. The average mean temperature for the Coastal Plain is 62°F; for the Piedmont, 60°F; and for the Mountains, 55°F.

The greater part of North Carolina is in the warm-temperate belt, but a portion of the Mountains is cool-temperate due to elevation. A small area in the southern portions of Brunswick and New Hanover counties has an almost subtropical climate.

The average freeze-free growing season is 200 to 260 days in the Coastal Plain, 185 to 220 days in the Piedmont and 150 to 200 days in the Mountains (Figure 3). The long grazing season is favorable to the development of livestock enterprises.

The average annual precipitation for the Coastal Plain is 49 inches; for the Piedmont, 46 inches; and for the Mountains, 54 inches (Figure 4). The state average is 49 inches. Annual precipitation has varied from as little as 28 inches in parts of the Piedmont to nearly 150 inches in southern Transylvania county.

The average sky condition is clear (.3 or less of the sky covered with clouds) about 120 days per year; partly cloudy (.4 to .7 covered) about 115 days per year; and cloudy (.8 to completely overcast) about 130 days per year. One-tenth inch or more precipitation occurs on an average of 1 day out of 4.

Much summer rain comes as afternoon thunderstorms, sometimes severe and occasionally accompanied by strong winds and hail. These storms occasionally damage crops and cause soil loss on the more sloping lands. Crops in the lower Coastal Plain sometimes suffer from excessive rain, but moisture conditions are generally favorable. Precipitation is usually adequate for crops, but occasional dry seasons or dry periods within seasons do occur. Irrigation is therefore becoming an important part of many agricultural enterprises in the state.

Climatic conditions vary over time and among geographic areas of the state. Precipitation is fairly evenly distributed by months but, due in part to the nature of the soils, moisture deficiencies occur at irregular intervals. Probabilities of drought have been established and are displayed as three drought patterns likely to occur over a 10-year period (Figure 5).<sup>3</sup>

<sup>3</sup>More detailed information on the North Carolina climate may be found in Hardy and Hardy (1971), Hardy (1964) and Hardy *et al.* (1967) as noted in list of references.

# LIVESTOCK, DAIRY & POULTRY REVIEW OF 1981

## CASH RECEIPTS UP

Cash receipts from livestock, dairy and poultry products totaled \$1.6 billion in 1981, up 10% from 1980. All poultry products combined accounted for \$832 million while income from broilers alone amounted to \$468 million or 30% of the total. Cash receipts from hogs at \$358 million and 23% of the total was up 13% from the previous year. Wholesale milk cash receipts at \$234 million rose 9% from 1980. Income from turkeys rose 10% to a total of \$178 million. Eggs produced during 1981 brought in \$173 million—1% below 1980. Income from cattle and calves increased to \$119 million, up 5% from the previous year.

## BROILER RECORD HIGH

Broiler production in North Carolina reached a new record high during 1981 at 423 million birds, an increase of 6% from last year's record high. Meat production increased 9% to 1.7 billion pounds.

The average price of 27.0 cents per pound for broilers rose 6% and yielded a gross income of \$468 million for the state, up 15% from the previous year.

Income from broilers is the largest contributor to cash receipts for the livestock and poultry commodity group making up about 30% of the income for this group. North Carolina ranks fourth nationally in total broiler production.

## HOG NUMBERS DECLINE

The December 1, 1981 inventory of hogs and pigs on North Carolina farms showed an annual decrease of 20% to 1,980,000 head. The state continues to rank seventh nationally in total hog numbers. Farrowings were down 18% to 455,000 in 1981 for an average of 7.55 pigs per litter, about three tenths of a pig higher than the 1980 average. A crop of 3,436,000 pigs was produced in the state, 621,000 or 15% fewer than the preceding year.

Hog marketing at 3,634,000 head decreased 6% during 1981. Although marketings were down, the 17% increase in the average price at \$44.00 cwt, resulted in a 13% increase in cash receipts to \$358 million for the state. The value of home consumption at 13.1 million was down 7% from a year earlier.

## MILK PRODUCTION UP

Milk production in North Carolina during 1981 totaled 1.7 billion pounds, up 1% from 1980. The number of milk cows at 134,000 head remained unchanged. Milk output per cow at 12,343 pounds increased 1% from the previous year.

Cash receipts from sales of milk and cream totaled \$240 million, up 9% from a year earlier. The total value of milk produced was up 9% to \$251 million. Fluid milk prices rose 7% from 1980 to \$15.16 cwt.

## LIVESTOCK, DAIRY AND POULTRY: Record Highs and Lows Through 1981

SPECIES	Date Series Began	RECORD HIGH		RECORD LOW	
		Year	Number (000 Head)	Year	Number (000 Head)
Cattle and Calves-Inventory, Jan. 1 .....	1867	1976	1,170	1927	490
Milk Cows .....	1924	1944	384	1979	132
Milk Production (Lbs.) .....	1924	1957	1,685,000	1924	1,050,000
Sheep and Lambs-Inventory, Jan. 1 .....	1867	1870	560	1979	7
Hogs-Inventory, Dec. 1 .....	1969	1979	2,650	1969	1,580
Chickens-Inventory, Dec. 1 .....	1969	1969	22,115	1975	18,000
Hens .....	1969	1972	7,122	1979	3,800
Pullets of laying age .....	1969	1979	10,000	1975	6,780
Egg Production (Eggs) .....	1924	1970	3,440,000	1930	542,000
Commercial Broilers .....	1934	1981	423,160	1934	900
Turkey Breeder Hens-Inventory, Dec. 1 ..	1971	1981	690	1971	240
Turkeys-Total Raised, Dec. 1 .....	1929	1981	26,800	1931	203
Honey-Colonies .....	1939	1969	226	1941	164
Production (Lbs.) .....	1939	1972	7,141	1945	2,124

## FIRST IN TURKEYS

North Carolina overtook Minnesota as the number one turkey producing state during 1981. A record high 26.8 million turkeys were produced in North Carolina during the year, up 11% from the previous year's record high number. The total pounds of meat produced, at 469 million increased 16% from last year. Live weight average price per pound was 38.0 cents, down 5% but yielded a gross income of \$178 million, up 10% from 1980.

## EGG PRODUCTION DOWN

Commercial egg production in North Carolina during 1981 totaled 3.1 billion, down 3% from the previous year. The average number of layers on hand was 12.9 million, down 2% from 1980. Egg production per layer decreased 1% from the previous year to the level of 238 eggs.

Cash receipts from sales during 1981 amounted to \$173 million, down 1% from the previous year. The average price per dozen was 67.9 cents, up 2% from 1980. The state is ranked number 8 nationally in cash receipts from eggs.

## CATTLE MARKETING INCREASE

Cash receipts from cattle and calves in the state increased 5% in 1981 to a total of \$119 million. A larger number of cattle marketed more than offset the reduced average prices received of \$44.90 cwt. for cattle and \$55.20 cwt. for calves causing the increase. The value of home consumption of cattle and calves dropped 1% in 1981 to \$17 million.

The inventory of cattle and calves on Tar Heel farms as of January 1, 1982 was 1.2 million head, unchanged from January 1, 1981. Calf births showed a 2% decline during the year at 480,000 head. Calf marketing increased 25% to 206,000 head while cattle marketing increased 22% to 225,000 head.

## SHEEP AND LAMBS INCOME DOWN

Marketing of sheep and lambs was 12% below the previous year and the decrease in prices resulted in a 19% decrease in cash receipts for the year to \$122,000.

The number of sheep and lambs in North Carolina at 7,700 head as of January 1, 1982 was up 3% from a year earlier. The lamb crop was down 12% at 5,600 head for the year.

**NORTH CAROLINA'S RANK IN THE NATION'S AGRICULTURE, 1981**

COMMODITY	Rank Among States	Production	Unit	Percent of U.S. Production
Flue-Cured Tobacco Production	1	756,305	(000 Lbs.)	64.6
Total Tobacco Production	1	796,840	(000 Lbs.)	38.7
Sweet Potato Production	1	4,680	(000 Cwt.)	37.1
Farm Forest Products Receipts (1980)	1	170,000	(000 Dol.)	18.3
Turkeys Raised	1	26,800	(000 Hd.)	15.7
Cucumbers for Pickles Production	2	82	(000 Tons)	14.3
Peanut Production	3	561,975	(000 Lbs.)	13.9
Hatching Eggs	3	927	(Mil. Eggs)	13.4
Burley Tobacco Production	4	27,795	(000 Lbs.)	5.3
Cucumbers for Fresh Market	4	434	(000 Cwt.)	7.2
Blueberry Production	4	7,150	(000 Lbs.)	6.2
Commercial Broiler Production	4	449,977	(000 Hatch)	10.2
Snap Bean Production	5	216	(000 Cwt.)	7.4
Cabbage Production	5	937	(000 Cwt.)	4.7
Peach Production	6	40,000	(000 Lbs.)	1.4
Green Pepper Production	6	280	(000 Cwt.)	4.8
Apple Production	7	375,000	(000 Lbs.)	4.9
Number of Hogs on Farms (12-1-81)	8	1,980	(000 Hd.)	3.4
Honey Production	8	5,423	(000 Lbs.)	2.9
Egg Production	8	3,078	(Mil. Eggs)	4.4
Grape Production	9	4,900	(Tons)	.1
Strawberry Production	9	59	(000 Cwt.)	.8
Greenhouse and Nursery Receipts (1980)	9	80	(Mil. Dol.)	2.5
Number of Farms (in 1981)	10	91	(000)	3.7
Rye Production	11	380	(000 Bu.)	2.0
Tomato Production	11	300	(000 Cwt.)	1.2
Pecan Production	11	3,000	(000 Lbs.)	.9
Watermelon Production	11	502	(000 Cwt.)	1.9
Cash Receipts from Crops (1980)	11	2,154	(Mil. Dol.)	3.2
Flowers Sold (Wholesale Value)	12	19	(Mil. Dol.)	1.9
Sorghum Grain Production	13	4,134	(000 Bu.)	.5
Corn Production	13	140,910	(000 Bu.)	1.7
Cash Receipts from All Commodities (1980)	13	3,598	(Mil. Dol.)	2.7
Soybean Production	14	47,000	(000 Bu.)	2.3
Cotton Production	14	95	(000 Bales)	.6
Irish Potato Production	15	2,542	(000 Cwt.)	.8
Barley Production	16	3,410	(000 Bu.)	.7
Cash Receipts from Livestock, Dairy & Poultry (1980)	18	1,444	(Mil. Dol.)	2.1
Oats Production	19	4,399	(000 Bu.)	.9
Milk Production	21	1,654	(Mil. Lbs.)	1.2
Winter Wheat Production	24	15,990	(000 Bu.)	.7
Number of Cattle on Farms (1-1-82)	34	1,160	(000 Hd.)	1.0
Hay Production	38	636	(000 Tons)	.4

## GREAT SMOKY MOUNTAINS NATIONAL PARK

A blue, smokelike haze almost always hangs over these peaks; hence, the name. The range runs the entire length of the park, which covers 514,669 acres about evenly divided between North Carolina and Tennessee. US 441 (Newfound Gap Road) bisects the park, which is approximately 54 miles long and 19 miles wide.

The highest peaks in eastern North America, with the exception of Mount Mitchell (not in the park), form the Smokies - the most massive mountain uplift in the East and one of the oldest land areas on earth. Sixteen summits are over 6,000 feet, and the main ridge does not drop below 5,000 feet for a distance of 36 miles.

The Blue Ridge Parkway furnishes a magnificent 469-mile scenic drive between Shenandoah National Park in Virginia and Great Smoky Mountains National Park in North Carolina and Tennessee.

### FLORA AND FAUNA

Virgin forest covers about 125,000 acres. A fine stand of eastern deciduous trees and a large tract of red spruce are here. Much of the remainder is second growth.

Few places in the United States have such varied plantlife. There are more than 130 native species of trees alone. The higher elevations are covered with dense forest usually consisting of spruce and fir. At intermediate heights is a northern hardwood forest. Some mountaintops are covered only with grass or shrubs and thus are known as "balds."

Streams are bordered with rhododendron and in certain areas, such as on Gregory Bald, the flame azalea grows in profusion. The mountain summits and knife-edged ridges are covered with rhododendron and sand myrtle. The peak season for viewing wildflowers is usually late April to mid-May.

Wildlife was scarce when the park was dedicated in 1940, but, since hunting has been prohibited, many species are increasing in number. Deer are often observed in Cades Cove. Ruffed grouse, wild turkeys and bears may be found.

FISHING for trout and bass, with 600 miles of streams available, is ideal. Out-of-state visitors fishing within the park must have a Tennessee state or North Carolina state license. Fishing is permitted sunrise-sunset, Apr. 15-Oct. 15. Inquire for regulations, as some streams are closed, and a few are designated as "sport fishing." Brook trout fishing is prohibited.

### TRAILS AND ROADS

There are 170 miles of paved park roads, 100 miles of gravel roads and more than 800 miles of horse and foot trails. The most heavily used trail is the section of the Appalachian Trail running the length of the park (shelters and campsites require a permit for use and are spaced a day's hike apart - camping limit, 1 day per site). From Gatlinburg, the ascent by foot or horseback of Mount LeConte is recommended. There is overnight lodging on the mountaintop by reservation. Horseback trails lead from concessioner-operated stables at Cades Cove, Cosby, Smokemont, Dudley Creek and Two Mile Branch. Charlie's Bunion, reached by way of the Appalachian Trail 4 miles from Newfound Gap, affords a splendid view of the Smoky Mountains.

Newfound Gap Road (US 441), a scenic Asheville-Knoxville route attaining an elevation of 5,048 feet at the state line, traverses the park and the Cherokee Indian Reservation. Clingmans Dome, highest point in Tennessee, is reached from this highway via a 7-mile road to the parking area and a 1/2-mile trail to the summit, where there is an observation tower.

The Heintooga Road, a spur of about 9 miles, is reached from the Blue Ridge Parkway just north of the Cherokee Indian Reservation. There is a Masonic memorial at Black Camp Gap, near the park entrance. Picnic facilities, as well as a parking area, are available at Heintooga Overlook mid-May through October.

UNIVERSITY OF MINNESOTA



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