NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

N. C. STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
COOPERATING

I.O.SCHAUB, DIRECTOR

NARRATIVE REPORT

1937

L. I. CASE, ANIMAL HUSBANDRY SPECIALIST

AGRICULTURAL ECONOMICS

Report Only This Year's Extension Activities and Results That Can Be Verified

ITEM	Public problems and economic planning on county or community basis [1] (a)	FARM MANAGEMENT: Farm records (inventories, accounts, etc.) (b)	FARM MANAGEMENT: Individual farm planning (c)	FARM MANAGEMENT: Farm and home financing (short and long time) (d)	Outlook (e)	Marketing, buying, selling, and financing (f)	
244. Days devoted to line of work by:							
(1) Home demonstration agents							244
(2) 4-H Club agents							244
(3) Agricultural agents							244
(4) Specialists							244
245. Number of communities in which work was conducted							245
246. Number of voluntary local leaders or committeemen assisting							246
247. Days of assistance rendered by voluntary leaders or committeemen							247
248. Number of adult result demonstrations conducted							248
249. Number of meetings at result demonstrations							249
250. Number of method-demonstration meetings held							250
251. Number of other meetings held							251
252. Number of news stories published							252
253. Number of different circular letters issued							253
254. Number of farm or home visits made							254
255. Number of office calls received							255
256. Number of 4-H Club members enrolled—(1) Boys	XXXX			XXXX	XXXX	XXXX	256
256. Number of 4-H Club members enrolled—(2) Girls	XXXX			XXXX	XXXX	XXXX	256
257. Number of 4-H Club members completing—(1) Boys	XXXX			XXXX	XXXX	XXXX	257
257. Number of 4-H Club members completing—(2) Girls	XXXX			XXXX	XXXX	XXXX	257

258. Number of farmers keeping farm accounts throughout the year under supervision of agent—(a) Regular; (b) A.A.A. 258

259. Number of farmers keeping cost-of-production records under supervision of agent 259

260. Number of farmers assisted in summarizing and interpreting their accounts 260

261. Number of farmers assisted in making inventory or credit statements 261

262. Number of farmers assisted in obtaining credit 262

263. Number of farmers assisted in making mortgage or other debt adjustments 263

264. Number of farm credit associations assisted in organizing during the year 264

265. Number of farm business or enterprise-survey records taken during year 265

266. Number of farmers making recommended changes in their business as result of keeping accounts or survey records 266

267. Number of other farmers adopting cropping, livestock, or complete farming systems according to recommendations 267

268. Number of farmers advised relative to leases 268

269. Number of farmers assisted in developing supplemental sources of income 269

270. Number of families assisted in reducing cash expenditure:

(a) By exchange of labor or machinery 270

(b) By bartering farm or home products for other commodities or services 270

(c) By producing larger part of food on farm 270

(d) By making own repairs of buildings and machinery 270

[1] Include county agricultural planning, taxation, land utilization, and economic basis of extension programs.

DAIRY CATTLE, BEEF CATTLE, SHEEP, SWINE, AND HORSES

Report Only This Year's Extension Activities and Results That Can Be Verified

ITEM	Dairy cattle (a)	Beef cattle (b)	Sheep (c)	Swine (d)	Horses and mules (e)	Other livestock[1] (f)	
214. Days devoted to line of work by:							
(1) Home demonstration agents		1	1				214
		49.6	3.0		1 .8		
(2) 4-H Club agents		93	89		68	8	
		866.05	391.25		293.35	21.1	
(3) Agricultural agents		40	23		5	1	
		90.75	77.45		5.5	9.5	
(4) Specialists							
215. Number of communities in which work was conducted		83	59		67	8	215
		389	269		371	15	
216. Number of voluntary local leaders or committeemen assisting		21	16		19	1	216
		65	63		101	6	
217. Days of assistance rendered by voluntary leaders or committeemen		20	14		17		217
		93.2	70		82.5		
218. Number of adult result demonstrations conducted		47	28		20	2	218
		398	134		38	2	
219. Number of meetings at result demonstrations		19	9		9	1	219
		45	13		9	1	
220. Number of method-demonstration meetings held		14	21		6		220
		42	61		16		
221. Number of other meetings held		18	13		10	1	221
		32	39		17	2	
222. Number of news stories published		43	26		27	2	222
		157	94		49	5	
223. Number of different circular letters issued		28	27		14	1	223
		76	93		26	2	
224. Number of farm or home visits made		80	54		65	4	224
		2807	1038		942	34	
225. Number of office calls received		81	53		69	11	225
		4611	2393		2536	137	
226. Number of 4-H Club members enrolled (1) Boys		26	18		6	1	226
		130	22		18	1	
(2) Girls		6					
		11					
227. Number of 4-H Club members completing (1) Boys		23	14		5		227
		102	15		17		
(2) Girls		6					
		11					
228. Number of animals in projects conducted by 4-H Club members completing		29	4		5		228
		141	127		25		
229. Number of farmers assisted in obtaining purebred sires		48	37		22	2	229
		178	121		31	2	
230. Number of farmers assisted in obtaining high-grade or purebred females		38	20		22	1	230
		211	110		312	1	
231. Number of bull, boar, ram, or stallion circles or clubs organized or assisted		4	3		3	1	231
		7	11		3	1	
232. Number of members in preceding circles or clubs		3	1		2	1	232
		165	31		8	10	
233. Number of herd or flock-improvement associations organized or assisted		2	3				233
		2	3				
234. Number of members in these associations		2	3				234
		105	55				
235. Number of farmers not in associations keeping performance records of animals		5	6		1		235
		9	19		1		
236. Number of families assisted in home butchering, meat cutting, and curing	XXXX	10	7		XXXX		236
		92	12				
237. Number of families assisted in butter and cheese making		XXXX	XXXX	XXXX	XXXX	XXXX	237
238. Number of farmers following parasite-control recommendations		12	39		6	1	238
		130	494		22	1	
239. Number of farmers following disease-control recommendations		20	19		12		239
		676	141		221		
240. Number of farmers following marketing recommendations		29	30		9	1	240
		466	829		67	1	
241. Number of farmers assisted in using timely economic information as a basis for readjusting enterprise		27	16		10	2	241
		241	207		165	13	

[1] Do not include rabbits, game, and fur animals, which should be reported under Wildlife Conservation.

8—8618

1937

ANNUAL REPORT

OF

EXTENSION WORK IN ANIMAL HUSBANDRY

IN

NORTH CAROLINA

By L. I. Case,
SPECIALIST IN ANIMAL HUSBANDRY.

TABLE OF CONTENTS

Table of Contents Cont'd.

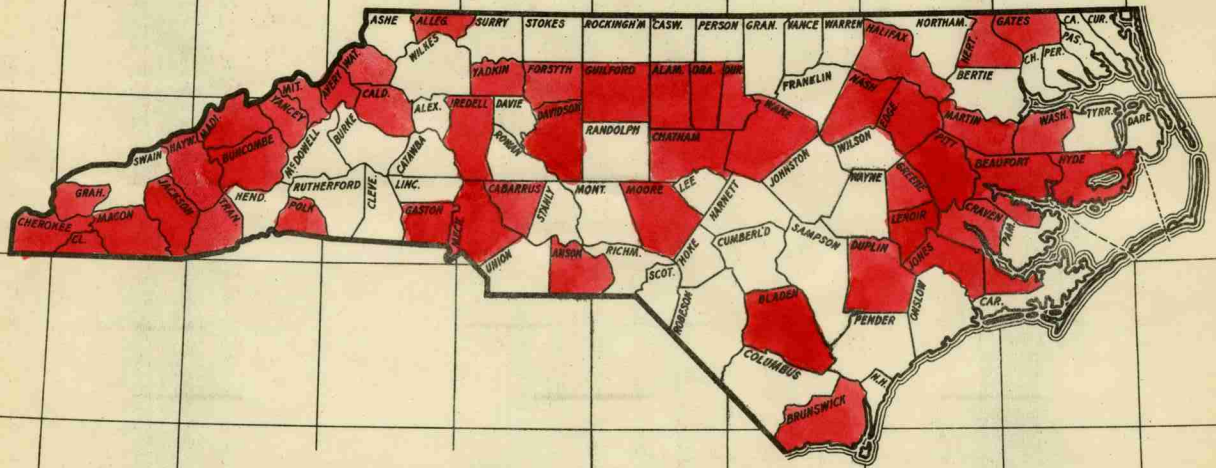
INTRODUCTION

Viewing in retrospect Animal Husbandry Work in North Carolina for 1937 it appears that very satisfactory progress was made. In addition to a tendency to raise more beef cattle, sheep, and work stock in the state, a very perceptible interest in improving the quality of our farm animals has been shown. It is believed that much of the increased interest in greater numbers is due to the Soil Conservation Program and the resulting increase in beef production. The interest in improvement in quality, however, has largely been brought about through grading and selling of market animals by grades, adult and 4-H competition in the show ring, and through the many other features of the extension program.

Emphasis was placed upon the following phases of work during 1937:

I. BEEF CATTLE PROJECTS

Deterioration in the quality of our state beef cattle went on for many years. The main reason, we believe, for this was the high percentage of mediocre bulls in service which resulted in many low grade steers and heifers being produced. This lowering of quality was seriously handicapping the market for our feeder steers in Southwestern and Northern Virginia. For these reasons the replacement of common bulls with better type animals has been one of our main lines of work in 1937.

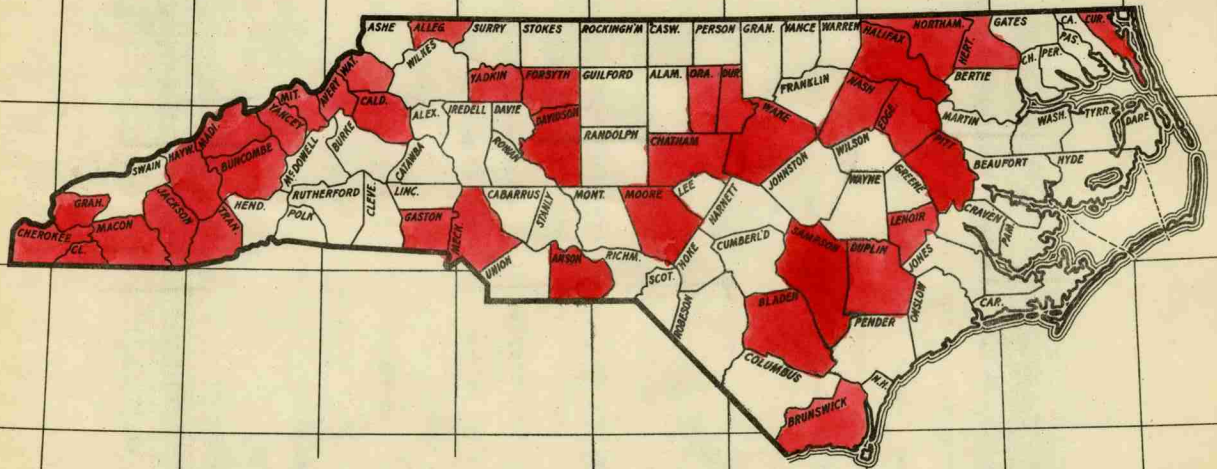


NORTH CAROLINA

SCALE-STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH AGENTS ASSISTED FARMERS IN OBTAINING PUREBRED SIRES FOR BEEF CATTLE, 1937



NORTH CAROLINA

SCALE - STATUTE MILES

0 15 30 45 60 75

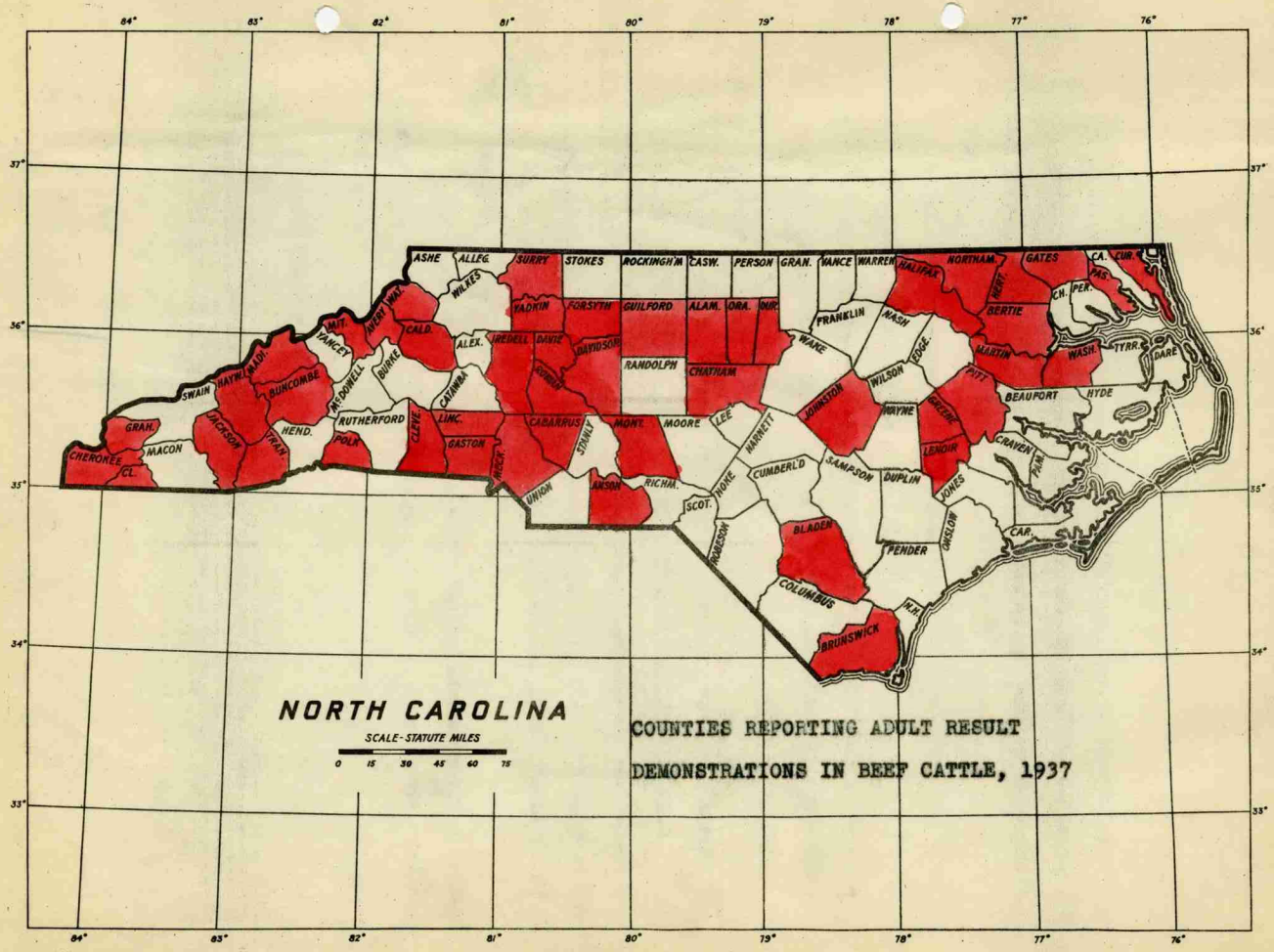
COUNTIES IN WHICH AGENTS ASSISTED FARMERS IN OBTAINING HIGH GRADE OR PUREBRED FEMALES FOR BEEF CATTLE, 1937

A. Beef Bull Placement

The problem of beef bull replacements was attacked:

1. By having each county agent where possible include this work in his plans for the year. Each agent set up a definite goal for the placing of a certain number of purebred beef bulls in his county during the year.

2. By using every means possible to make farmers conscious of better cattle. (a) News articles. County Agents in 43 (48) counties used a total of 157 (159) news articles relative to better bulls and better breeding generally in 1938. (b) Circular letters. A total of 76 (66) circular letters were used by 28 (27) county agents in calling attention to beef cattle improvement through improved breeding. (c) Meetings. ~~One hundred and nineteen~~ Eighty seven beef cattle meetings were held in 19 (31) counties. (d) Farm visits. Extension workers made 2807 (3148) farm visits in connection with beef cattle improvement. (e) Judging contests and judging demonstrations. ~~Ninety-eight~~ One hundred twenty seven 4-H Club boys and ~~thirty~~ forty eight adults took part in two major judging contests held in the state during the year. (f) Fairs and exhibitions. ~~Seventeen~~ Four state or regional exhibitions of beef cattle ~~were made~~ and numerous community and county shows were held during the year. ~~Many of these consisted of community or county fairs.~~ It is thought, however, that these small shows create considerable interest in live stock improvement. Baby beef club work is very definitely calling attention to better cattle.



NORTH CAROLINA

COUNTIES REPORTING ADULT RESULT DEMONSTRATIONS IN BEEF CATTLE, 1937

3. Selection and purchase of bulls. The large majority of beef bulls placed during the year were by individual selection and purchase, the county agent or specialist assisting with the transaction.

~~Goal of~~ Beef Bull Placements Planned	~~125~~	139
Actual Number Placed	~~178~~	185

~~Eight~~ Several of these bulls were rather outstanding individuals selected to head purebred herds at ~~an average cost of $182.50.~~ prices of $250.00 $100.00 and on down to from $200.00 to $50.00

B. Breeding Herds Established

One of the limiting factors in beef cattle improvement in the state is an inadequate supply of good breeding cattle. Considerable time and much effort has, therefore, been spent in encouraging the owners of purebred herds already established and in the starting of new herds on farms where it was thought that enterprise practical.

~~Two hundred eleven farmers in thirty-eight counties of the~~ Three hundred twenty farmers in forty three state were assisted in obtaining purebred or high grade females during the year. Two breeders of Polled Herefords added two carloads of excellent breeding cattle to their herds. These were purchased from some of the best herds in the west.

~~II~~ C. FEEDS AND FEEDING

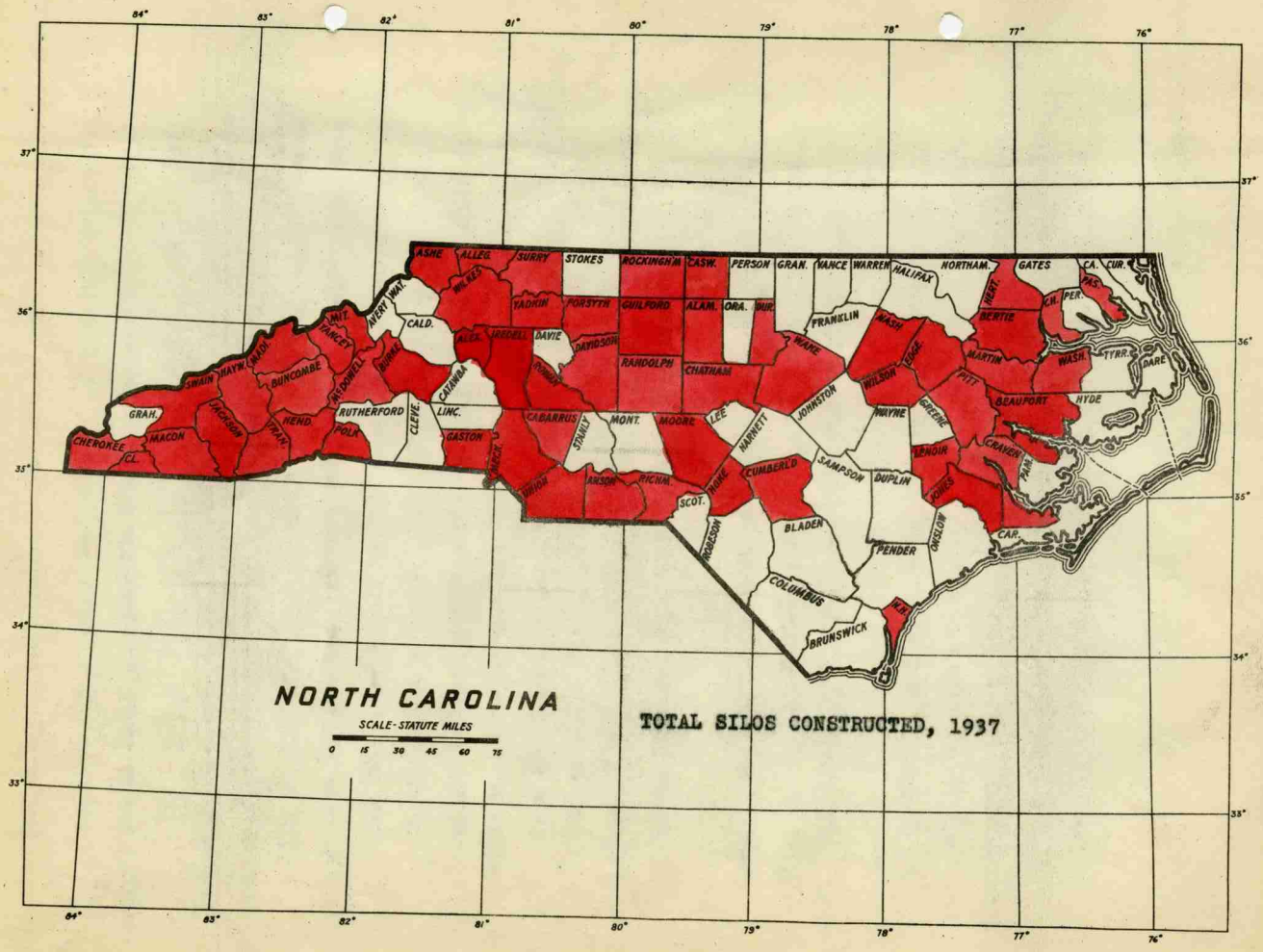
Work under the heading of Feeds and Feeding was carried on in very much the same way as outlined under the previous project heading. Much of this work is reported under the heading of Agronomy but ~~some repetition may not be amiss.~~ as this is the foundation of the livestock industry it will bear repetition. No attempt has been made to separate these figures according to types of livestock raised.

1. Pastures. There is no question but what pasture is the foundation of economical live stock production. Much more research is needed along this line. However, there is a great deal that can be done with our present knowledge of adapted varieties, fertilizing practices and better care and management of our pastures.

That this state is making progress I think is evident by the following statistics:

	No. Counties Reporting	No. Demonstrations, etc.
Result pasture demonstrations	82	1319
Meetings at demonstrations	50	169
Pasture news stories published	72	261
Circular letters	57	134
Farmers following fertilizer recommendations	77	2274
New pastures established	56	1345

2. Silos and Silage. Not so many years ago we saw many unfilled upright silos in beef cattle sections and as a result reports were quite prevalent that cattle would not winter well on silage. Some said that cattle wintered on silage would not make satisfactory gains on grass the following year. Fortunately these mistaken ideas have largely been dispelled and we see more and more silos in use on beef cattle farms as time goes on. Silage is being used more generally not only in wintering rations but in


NORTH CAROLINA
SCALE - STATUTE MILES
0 15 30 45 60 75
TOTAL SILOS CONSTRUCTED, 1937
ASHE
ALLEG.
SURRY
STOKES
ROCKINGH'M
CASW.
PERSON
GRAN.
VANCE
WARREN
HALIFAX
NORTHAM.
GATES
CA.
CUR.
PAS.
PER.
CH.
CAMD.
CURR.
PERQ.
BERTIE
MARTIN
WASH.
TYRR.
DARE
HYDE
BEAUFORT
PITT
CRAVEN
JONES
CARTERET
MORE.
GREENE
LENOIR
WAYNE
WILSON
EDGE.
JOHNSTON
HARNETT
LEE
MONT.
MOORE
RANDOLPH
CHATHAM
ORA.
DUR.
WAKE
FRANKLIN
NASH
GUILFORD
ALAM.
RANDOLPH
DAVIDSON
DAVIE
FORSYTH
RADKIN
WILKES
AVERY
WATA.
MITC.
YANCEY
CALD.
ALEX.
IREDELL
ROWAN
CABARRUS
STANLY
UNION
ANSON
RICH'M.
SCOT.
CUMBER'D
SAMPSON
DUPLIN
ONSLOW
PENDER
BLADEN
COLUMBUS
BRUNSWICK
ROBESON
BRUNS.
CAP.
MADI.
BUNCOMBE
HAYW.
SWAIN
JACKSON
MACON
CL.
CHEROKEE
GRAH.
HEND.
TRAN.
POLK
RUTHERFORD
MCDOWELL
BURKE
CALDWELL
CATAWBA
CLEVE.
LINC.
GASTON
CHARL.
84°
83°
82°
81°
80°
79°
78°
77°
76°
37°
36°
35°
34°
33°

fattening rations as well. One feeder did a very good job of fattening two year old steers last year on silage and a protein supplement with no other feed of any kind. Much of this increased popularity in the feeding of silage is no doubt due to the trench silo which is becoming more and more prevalent throughout the state. ann Stacker will supply.

During the year 294 silos were built in 56 counties. There is no way of determining from county agent's reports just how many of these were constructed on beef cattle and sheep farms.

3. Cover Crops. It is believed that too much emphasis cannot be placed upon the advantage of winter cover crops for wintering cattle and sheep. This advantage is particularly great on the sandy loam soil of the Coastal Plain and Tide Water Sections of the state. On this type of soil live stock can graze practically all winter without regard to the moisture condition of the soil. Many of our flocks of sheep in Eastern North Carolina make their entire living on fields of Abruzzi Rye, other small grains, and winter legumes. Many of our best cattle farmers winter their herds of dry cows and other mature cattle on field gleanings and winter cover crops. These cattle in many instances never secure any harvested feed nor are they kept under roof the entire winter.

It is impossible to make a statement relative to the increasing use of winter cover crops in the state, although without

question this practice is increasing ~~tremendously.~~ to a considerable extent

D 4. Fattening Cattle for Market. There were about 1600 steers fattened for market in the feed lots of Eastern North Carolina during the winter of 1936-37. This was an increase of about 500 head over the year before. This increase was due to a favorable market outlook and to an increasing interest in the feeding of cattle for surplus feed consumption and the production of stable manure for soil building. The outlook for market cattle was so unfavorable in the fall of 1937 that this office advised cattle feeders to go light on the number of cattle they fed for market this year. As a consequence the number of cattle put on feed this last fall was cut down to about 840 head. Part of these were fed on contract in order to play safe. On one farm which happens to be a state institution, the usual number of steers were laid in last fall against the advice of the animal husbandry office. As a result this particular farm will probably lose fully twenty-five thousand dollars due to the precipitous drop in the market.

Records of cattle feeding operations were secured on special forms prepared for the purpose. A copy of one of these records follow together with a summary of records secured last year.

CATTLE FEEDING RECORD

Davie
County

Name of Feeder Erwin Cotton Mills Company Address Cooleemee, N.C.

No. of Head Fed 36 Age 2 yrs. Sex 28 heifers 8 steers

Total Buying Wt. 24,504 Aver. Wt. 680 Place Cooleemee Date Dec. 1, 1936

Total Wt. Unloading Pt. same Av. Wt. _____ Shrink _____

Total Wt. When Put on Feed same (a) Aver. Wt. _____ Date _____

How were cattle handled between time received and time started on feed? Were roughed until January 15th, then gradually placed on feed.

Total Home Wts. When Sold 31,332 (b) Aver. Wt. 870 1/3 Date April 6, 1937

Total Gain Feed Lot (b) minus (a) 6828 Aver. Gain 190 1/3 Av. Daily Gain 1.6

Total Wt. at Stock Yards Sold and weighed at barn Aver. Wt. _____ Shrink _____

Financial Statement

Cost or Value of Feeder Cattle		$ 1531.50
Freight and Other Charges to Farm		$
Total Initial Cost or Value		$ (c)
Sale Price: At Home _____ At Stock Yards _____		$
No. Head 36 at 8 cts. per lb. plus $5.00 bonus	Total	$ 2506.56
No. Head _____ at _____ cts. per lb.	Total	$ 5.00
No. Head _____ at _____ cts. per lb.	Total	$
	Grand Total	$ 2511.56 (d)
Freight and Stock Yard Charges to Market		$
Commission Charges		$
Total Marketing Costs		$ (e)

Name of Feeder	County	No.Head	Profit or Loss
C. A. Brown	Rowan	33	$387.06
M. F. Shore	Yadkin	23	333.24
B. Austell	Cleveland	34	611.00
Frank Jackson	Polk	27	36.00
Erwin Cotton Mills	Davie	36	378.21
E. A. Peterkin	Robeson	27	499.50
G. L. Pate	Robeson	123	1914.60
	Total	303	$4159.61

Average profit per head $13.72

~~III.~~ E. MANAGEMENT

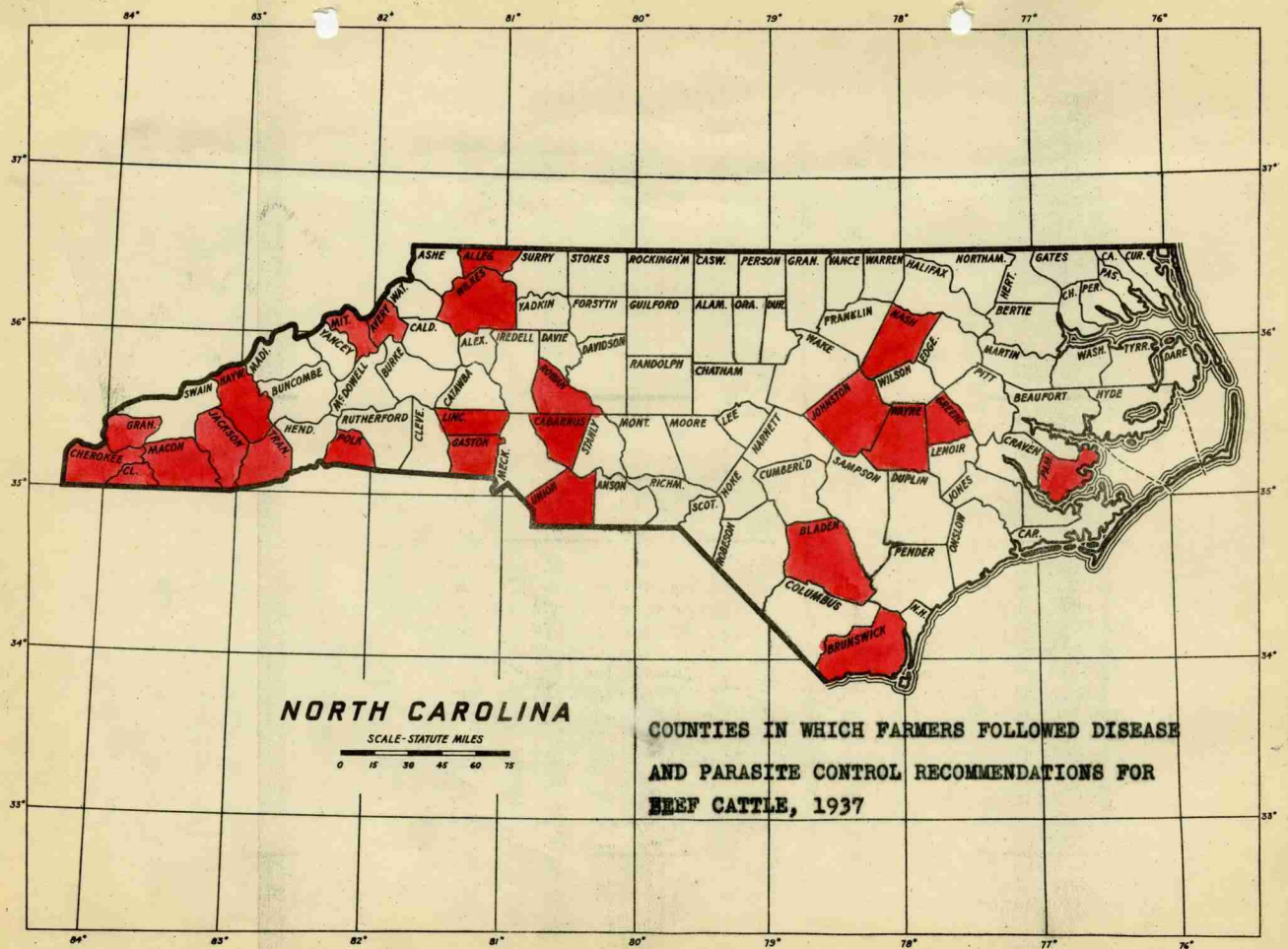
Managerial practices, especially in Eastern North Carolina are of a low order. This is due largely to the fact that in most cases cattle raising in this section of the state is of minor importance and the so called cash crops are given first consideration. Among the things that are being attempted in a corrective way are as follows:

1. Controlled breeding. (a) To have calves dropped in the spring of the year. (b) Prevent heifers from getting bred too young.

2. Castration and Dehorning of calves at proper age.

3. Adequate shelter and dry feed lots in order to conserve feed and manure.

238 &
239 &



NORTH CAROLINA

SCALE - STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH FARMERS FOLLOWED DISEASE AND PARASITE CONTROL RECOMMENDATIONS FOR BEEF CATTLE, 1937

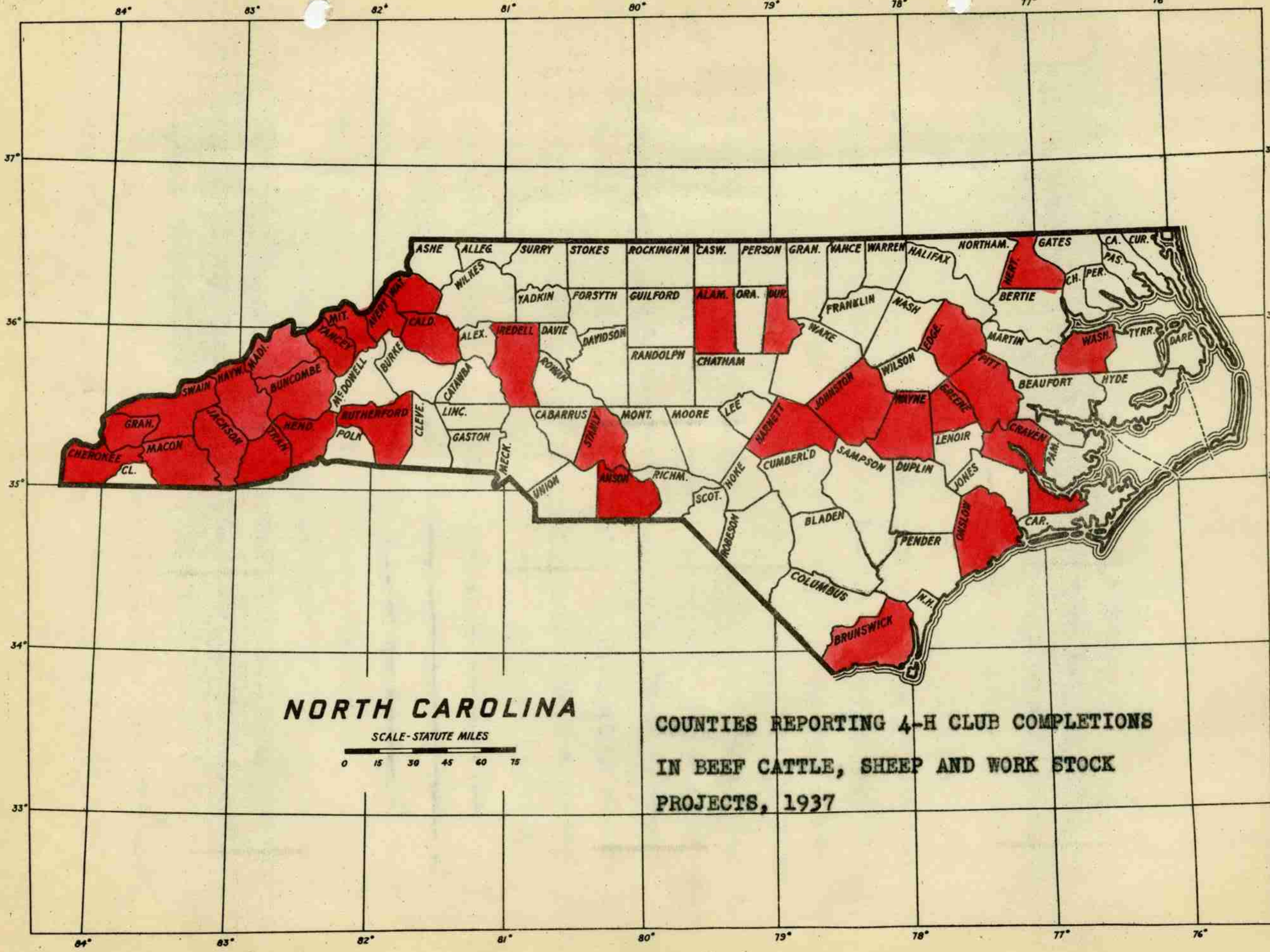
During the year 398 herd management demonstrations were conducted in 47 counties. There were 45 meetings held on these farms during the year and they were frequently visited by the county agent, and as often as possible by the specialist.

IV. BEEF CALF 4-H CLUB WORK

Beef calf club work was started in North Carolina in 1935. This work has been built around a Fat Cattle Show held at Asheville for the past three years and sponsored by the Asheville Chamber of Commerce. In 1936 a small premium list was added to the State Fair list of awards and this was increased considerably in 1937. During the past year 130 boys were enrolled in Beef Calf Club work from 26 counties. There were also 11 girls enrolled in this project from six counties. It is interesting to note that 102 boys completed their projects while every girl that enrolled went through to completion. Incidentally all 11 girls were at the Asheville Show, showed their calves and everyone competed in a special showmanship contest for girls.

Asheville Fat Cattle Show and Sale

As was stated before the Asheville Fat Cattle Show had its inception in 1935. That year out of about 60 head of cattle shown one graded choice and five graded good. All the other animals were medium or below. In 1936 fourteen graded choice and twenty-seven good. In 1937 twenty-nine were given the official grading


NORTH CAROLINA
SCALE-STATUTE MILES
0 15 30 45 60 75
ASHE
ALLEG.
SURRY
STOKES
ROCKINGH'M
CASW.
PERSON
GRAN.
VANCE
WARREN
HALIFAX
NORTHAM.
GATES
CA.
CUR.
PAS.
PER.
CH.
HERT.
BERTIE
WILKES
YADKIN
FORSYTH
GUILFORD
ALAM.
ORA.
DUR.
FRANKLIN
NASH
EDGE.
MARTIN
WASH.
TYRR.
DARE
MIT.
AVERY
WAT.
YANCEY
CALD.
ALEX.
IREDELL
DAVIE
DAVIDSON
RANDOLPH
CHATHAM
WAKE
WILSON
PITT
BEAUFORT
HYDE
MADI.
HAYW.
SWAIN
BUNCOMBE
McDOWELL
BURKE
CATAWBA
ROWAN
JOHNSTON
WAYNE
GREENE
GRAN.
JACKSON
HEND.
RUTHERFORD
CLEVE.
LINC.
CABARRUS
MONT.
MOORE
LEE
HARNETT
LENOIR
CRAVEN
PAM.
CHEROKEE
CL.
MACON
TRAN.
POLK
GASTON
MECK.
STANLY
CUMBERL'D
SAMPSON
DUPLIN
JONES
UNION
ANSON
RICHM.
SCOT.
HOKE
BLADEN
ONSLOW
CAR.
ROBESON
PENDER
COLUMBUS
N.H.
BRUNSWICK
84° 83° 82° 81° 80° 79° 78° 77° 76°
37° 36° 35° 34° 33°

COUNTIES REPORTING 4-H CLUB COMPLETIONS
IN BEEF CATTLE, SHEEP AND WORK STOCK
PROJECTS, 1937

of choice or prime and eighteen were graded good.

The 1937 show was very satisfactory from the standpoint of quality. There were nine mountain counties that showed steers and a very creditable showing was made by practically all of these counties. Watauga County won the largest share of the awards. Joe Brown from Deep Gap who showed the Reserve Champion steer at the State Fair was awarded the Grand Championship at Asheville and his thousand pound Hereford steer sold for $20.50 per hundred weight or a total of $205.00. The total winnings for Watauga County was $113.30 in premium money which included first in the county group, second in the get-of-sire class and second and third in the showmanship class. Cherokee County showing eleven calves was the second highest premium winner. This county was second in the county group and first in the get-of-sire class. Miss Carmen Curto a 4-H Club girl from Transylvania County showed the first prize steer in the medium weight class. Haywood County distinguished itself by winning first among the 4-H Club boys in the showmanship class and first among the girls in this same class.

The average of the entire sale was slightly over $11.00 per hundred weight. This was quite disappointing to many who did not realize that the market had been on the down grade for several weeks.

Mr. L. B. Burk of the Bureau of Agricultural Economics, United States Department of Agriculture, was on hand again and

put on a very interesting grading demonstration. Steers representing the different grades of slaughter cattle were exhibited and just above them artificial replicas of the wholesale cuts of the various grades of beef were displayed. Mr. Burk explained why each animal and each cut of beef fell in its respective grade. There were upward of 600 people representing both the producer and the consumer who witnessed this interesting demonstration.

The Extension Animal Husbandman was of the opinion at the start of the Asheville Show that it should be a feeder calf show rather than a fat cattle show. He was over-ruled, however, by the county agents. Last year a feeder calf class was added to the show. Little interest was shown, however, and only two feeder calves were entered. These two calves sold very well and when the cost of production was considered they made more money for the club boys than the fat animals with the exception of the grand champion. This class will be included again in the 1938 show and it is expected that there will be considerably more interest and more entries than last year.

Another new class was also added in 1937, this being a Get-of-Sire. Entries in this class were to consist of three fat steers owned and exhibited from one county and the get of a registered bull of one of the beef breeds owned in the county

from which the calves were shown. The purpose of this class, as it can readily be seen, was to encourage the use of the right type bulls, and raising calves suitable to be fed out young right at home.

A suggested Classification and Premium List for the 1938 Asheville Show follows:

CLASSIFICATION AND PREMIUM LIST

ASHEVILLE FAT AND FEEDER CATTLE STOCK SHOW

George W. Wallis, Manager

Rules and Regulations

1. Any producer or feeder in the State of North Carolina is eligible to exhibit.

2. Each exhibitor must have been the bona fide owner of, and in case of 4-H Club Members, must have personally fed and cared for the stock entered the major part of the time, for at least five months prior to the date of the show.

3. All steers entered in the show must be without horns.

4. All animals entered in the show must be on the grounds prior to

_____ (Hour) _____ (Day of week) _____ (Date)

5. None other than stock especially prepared and entered in the show will be allowed on the grounds.

6. No animal calved prior to January 1, 1937, will be eligible to compete in the following fat classes.

Premium List

Not more than two entries allowed to the exhibitor in each class.

Class 1. Light Weight Fat Steers (To be shown at halter.)

First Prize	$15.00	Sixth Prize	$7.00
Second "	12.00	Seventh "	6.00
Third "	10.00	Eighth "	5.00
Fourth "	9.00	Ninth "	4.00
Fifth "	8.00	Tenth "	3.00

Class 2. Medium Weight Fat Steers (To be shown at halter.)

First Prize	$15.00	Sixth Prize	$7.00
Second "	12.00	Seventh "	6.00
Third "	10.00	Eighth "	5.00
Fourth "	9.00	Ninth "	4.00
Fifth "	8.00	Tenth "	3.00

Class 3. Heavy Weight Fat Steers (To be shown at halter).

First Prize	$15.00	Sixth Prize	$7.00
Second "	12.00	Seventh "	6.00
Third "	10.00	Eighth "	5.00
Fourth "	9.00	Ninth "	4.00
Fifth "	8.00	Tenth "	3.00

Class 4. County Groups - Five Fat Steers (To be shown at halter).

This Class will be made up of animals from Classes 1, 2, and 3. The County Agricultural Agent shall decide which animals are to be used in making up the class.

Only 1 entry allowed for each County

First Prize	$25.00
Second "	20.00
Third "	15.00
Fourth "	10.00
Fifth "	5.00

Class 5. Get of Sire

Entries in this class shall consist of 3 fat steers owned and exhibited from one county and the get of a registered bull of one of the beef breeds owned in county from which calves are shown. Name and registration number of bull must be furnished.

First Prize	$20.00
Second "	15.00
Third "	10.00
Fourth "	5.00

Class 6. Champions

First and Second Prize Winners in Classes 1, 2, and 3 compete in this class.

Grand Champion Fat Steer - Ribbon
Reserve Champion Fat Steer - Ribbon

Class 7. Feeder Calves (To be shown at halter).

This class shall consist of steer calves, calved between January 1, 1938 and April 30, 1938. They must be sired by a purebred Hereford, Aberdeen Angus or Shorthorn bull, and be out of good grade or purebred beef type cows.

It is required that calves in this class be put on a grain ration at least one month before the show and that they be weaned at least ten days before the date of the show.

It is also required that anyone wishing to enter calves in this class must enter them with his County Agent not later than July 1.

First Prize	$12.00	Ninth Prize	$3.00
Second "	10.00	Tenth "	3.00
Third "	9.00	Eleventh "	3.00
Fourth "	8.00	Twelfth "	3.00
Fifth "	7.00	Thirteenth "	2.00
Sixth "	6.00	Fourteenth "	2.00
Seventh "	5.00	Fifteenth "	2.00
Eighth "	4.00	Sixteenth "	2.00

Class 8. Get of Sire (Feeders)

Entries in this class shall consist of 3 feeder calves owned and exhibited from one county and the get of a registered bull of one of the beef breeds owned in county from which calves are shown. Name and registration number of bull must be furnished.

No. awards will be made in this class except on animals considered worthy by the judges.

First Prize	$15.00
Second "	10.00
Third "	5.00

Class 9. Showmanship (For 4-H Club Members Only)

First Prize - Leather halter, Scotch Comb, and Brush
Second " - Leather halter
Third " - Scotch Comb and Brush

SPECIAL PREMIUMS

In addition to the premiums offered by the Asheville Fat and Feeder Cattle Show the following special awards are offered:

The North Carolina Hereford Breeders offer the following premiums for the best fat steers exhibited:

First	-	$25.00
Second	-	15.00
Third	-	10.00

The American Hereford Association, Kansas City, Mo., will add 25 per cent to whatever premiums are won by Hereford steers owned and exhibited by 4-H Club members in individual classes where the premiums amounts to $4.00 or more.

The American Shorthorn Breeders Association, Chicago, Ill., will add 25 per cent to any money prizes which may be won by Shorthorn steers owned and exhibited by 4-H Club members.

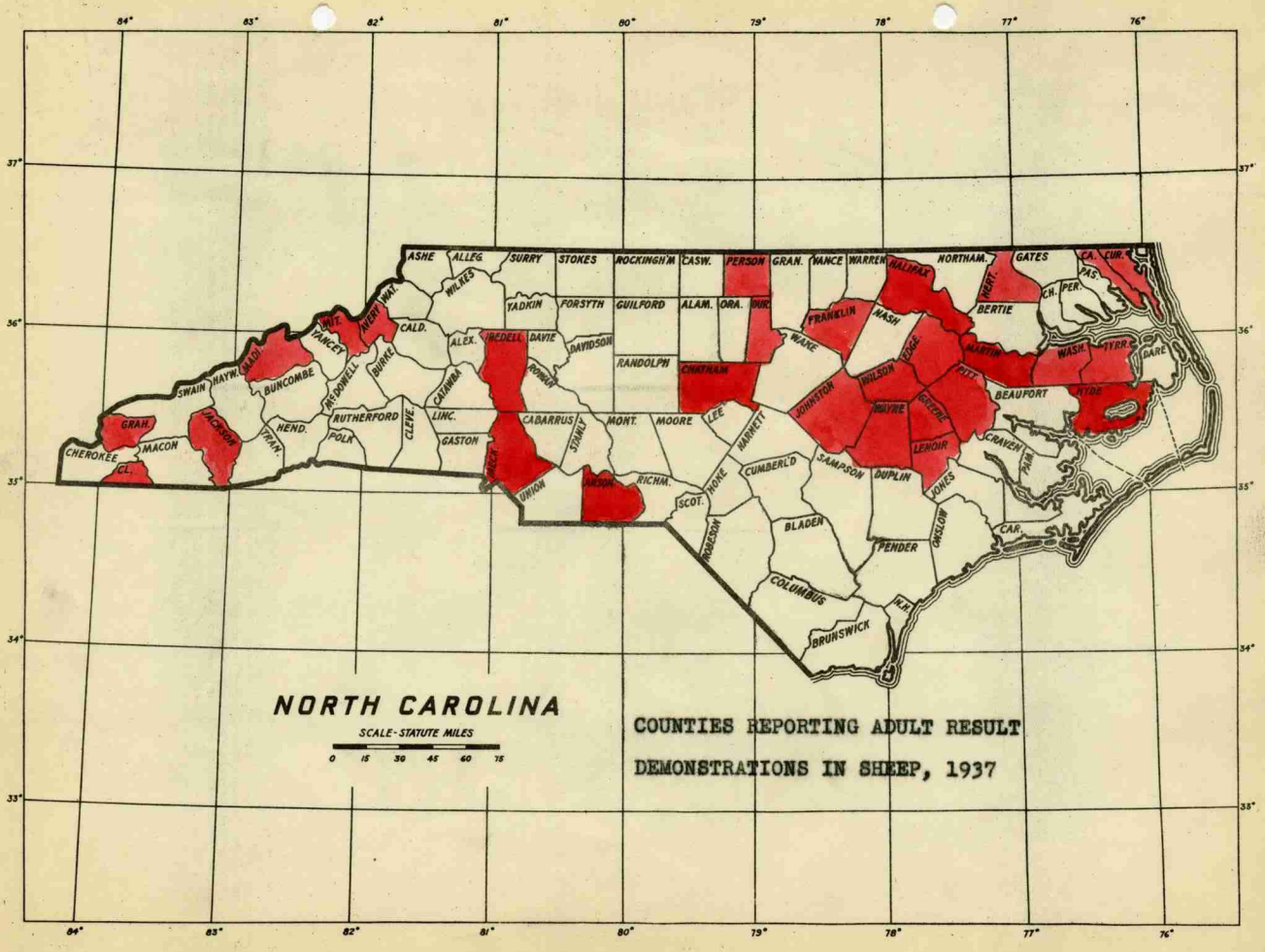
The American Aberdeen-Angus Breeders Association, Chicago, Ill., will add 25 per cent to whatever premiums are won by Aberdeen-Angus steers owned and exhibited by 4-H Club members in the individual classes.

II. SHEEP PROJECTS

Good prices for both lambs and wool in 1937 stimulated the interest in sheep raising. More stock ewes were kept within the state rather than sold outside than is usually the case. Eastern North Carolina showed a rather marked tendency to produce more sheep than they had been doing. This renewed interest in sheep raising is taking place in spite of the dog manace which is a serious problem, necessitating in many instances the penning of the flock within a dog proof fence at night.

V. FARM FLOCK RECORDS

Records were secured on 61 flocks of sheep in various parts of the state during the year. They showed an average gross income per ewe of $9.36. The incomes ranged from $3.54 to $17.53. The mountain flocks produced a greater income than the eastern by about $2.00 per ewe. There was a direct correlation, as one would expect, between the size of the lamb crop and the income. It was also true that where there was a high income the lambs and wool were sold cooperatively and approved production and managerial practices were followed. A Farm Flock Record follows.



NORTH CAROLINA

SCALE-STATUTE MILES

0 15 30 45 60 75

COUNTIES REPORTING ADULT RESULT DEMONSTRATIONS IN SHEEP, 1937

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF NORTH CAROLINA

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
NORTH CAROLINA COUNTIES AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

EXTENSION SERVICE

FARM FLOCK RECORD (SHEEP)

(For Commercial Flocks Only)

On Farm of Van Miller

Post Office Laurel Springs, N. C.

County Alleghany

County Agent R. E. Black

Number ewes exposed to ram 12

Were ewe lambs exposed? If so state number 10

Number lambs raised to market weight 18

Total value of lambs sold or kept $ 145.00

Number fleeces sold 23

Number pounds of wool sold 166

*Total value of wool $ 70.00

Total Income $ 215.00

Gross Income per ewe $ 9.39+

*To include market value of wool made into blankets etc.

At what time did most of lambs come? March

When were most of lambs sold? July and August

Were lambs creep fed? No

Were lambs docked? Yes Castrated? Yes

How many times was flock treated for stomach worms? Two

What treatment was used? Blue stone

Number of times flock dipped

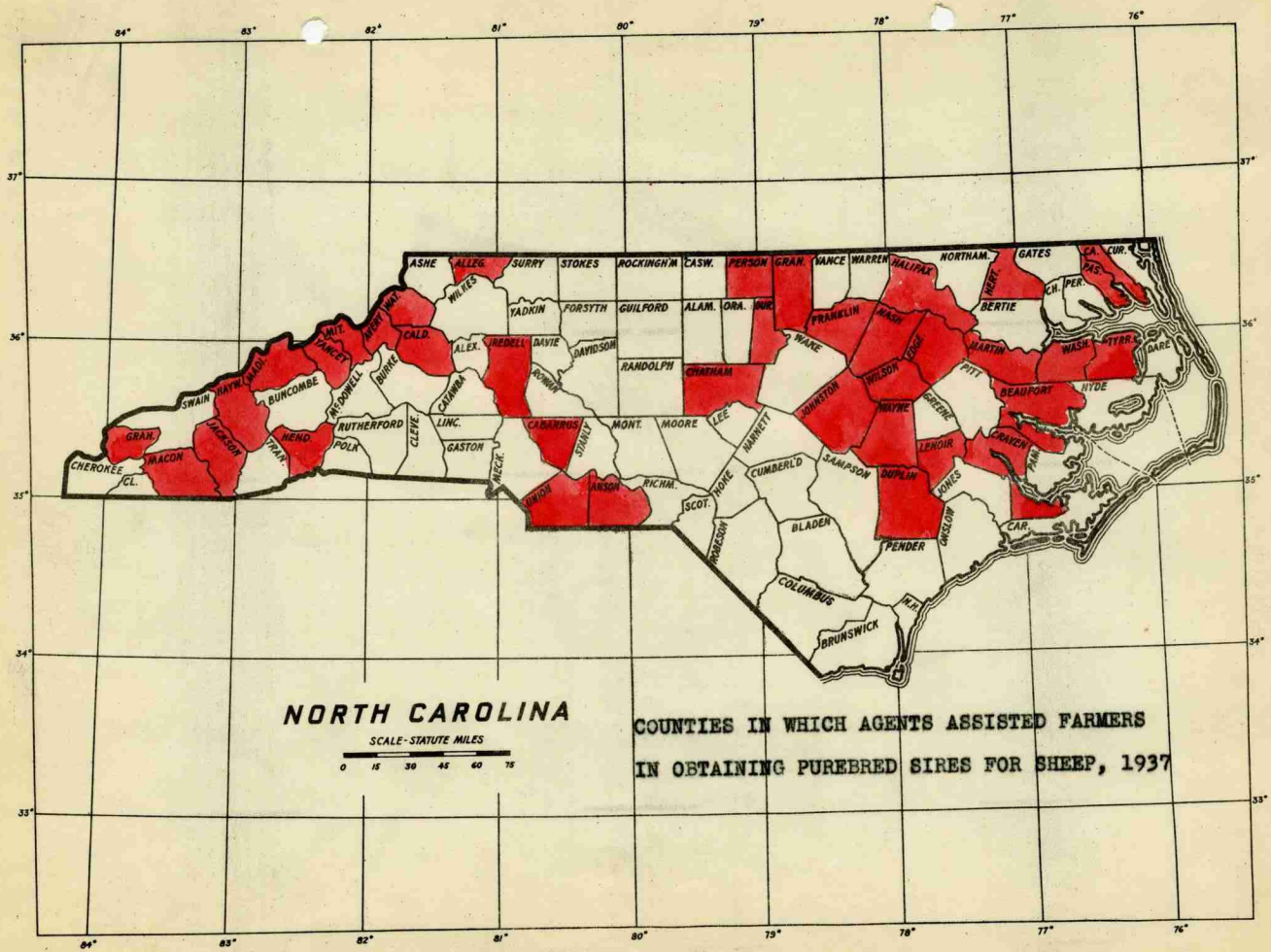
Was flushing practiced? No

Tell briefly how flock was wintered. The ewes ran out on range until first of February with very little feed. Then I began to feed some grain. After the lambs came the ewes were allowed to run on small grain with a slight increase in grain until grass came.

How was wool sold? County pool

How were lambs sold? Shipped cooperatively

REMARKS:

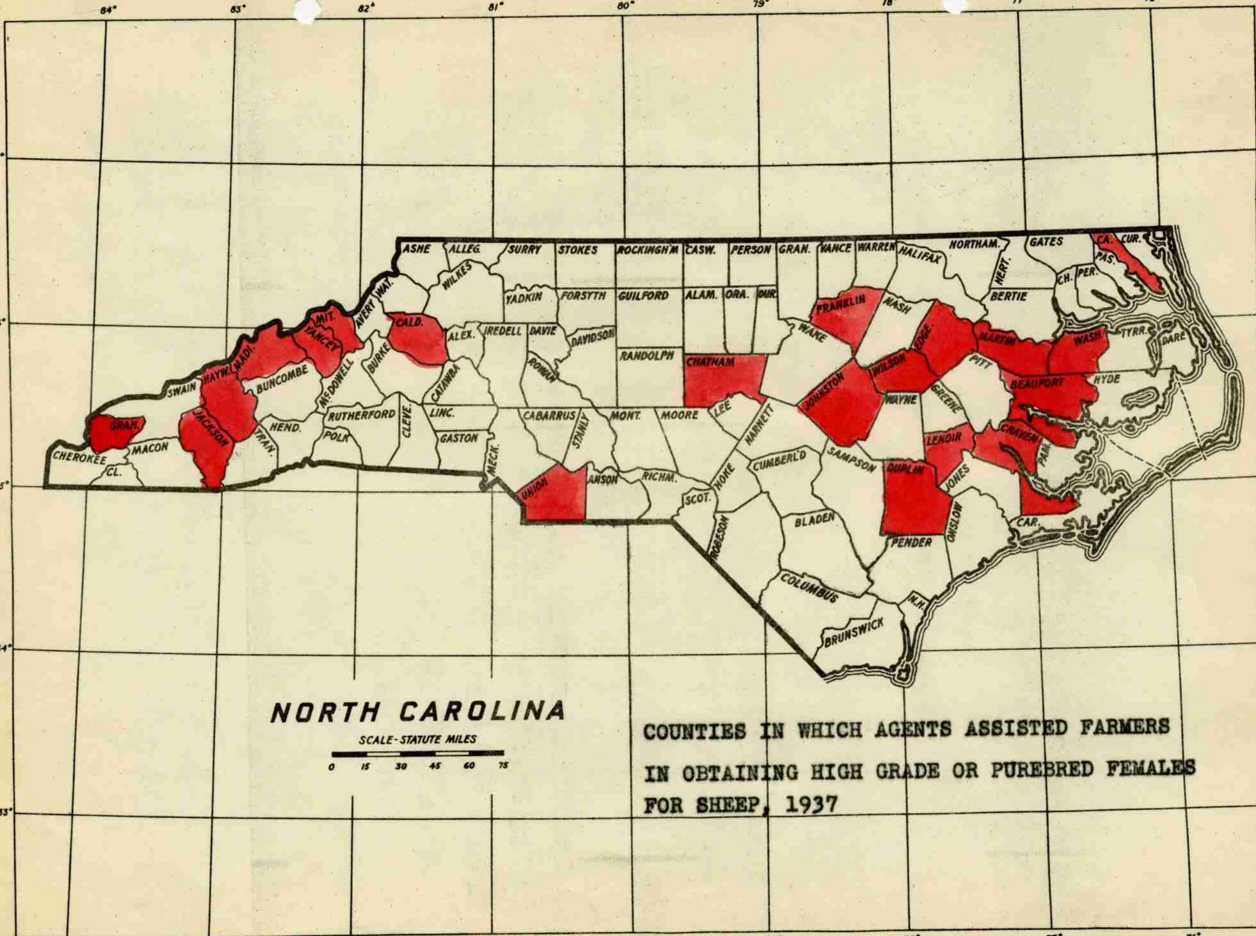


NORTH CAROLINA

SCALE - STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH AGENTS ASSISTED FARMERS IN OBTAINING PUREBRED SIRES FOR SHEEP, 1937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PER.
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YADKIN
FORSYTH
GUILFORD
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ORA.
DUR.
FRANKLIN
NASH
EDGE.
MARTIN
WASH.
TYRR.
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CALD.
ALEX.
IREDELL
DAVIE
DAVIDSON
RANDOLPH
CHATHAM
WAKE
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SAMPSON
DUPLIN
JONES
ROBESON
BLADEN
PENDER
ONSLOW
CAR.
COLUMBUS
N.H.
BRUNSWICK

COUNTIES IN WHICH AGENTS ASSISTED FARMERS
IN OBTAINING HIGH GRADE OR PUREBRED FEMALES
FOR SHEEP, 1937

VI. RAM PLACEMENTS

More than the usual interest in purebred rams was shown this year. Although no public auction sales were held a large number were purchased privately or on order. The Animal Husbandry Specialist personally selected sixteen stud rams at prices ranging from $25.00 to $125.00.

In twenty counties 110 purebred or high grade ewes were placed for the establishment of new flocks or adding to old ones. The Animal Husbandry Specialist purchased 16 head of purebred ewes on order for the establishment of new flocks in Eastern North Carolina.

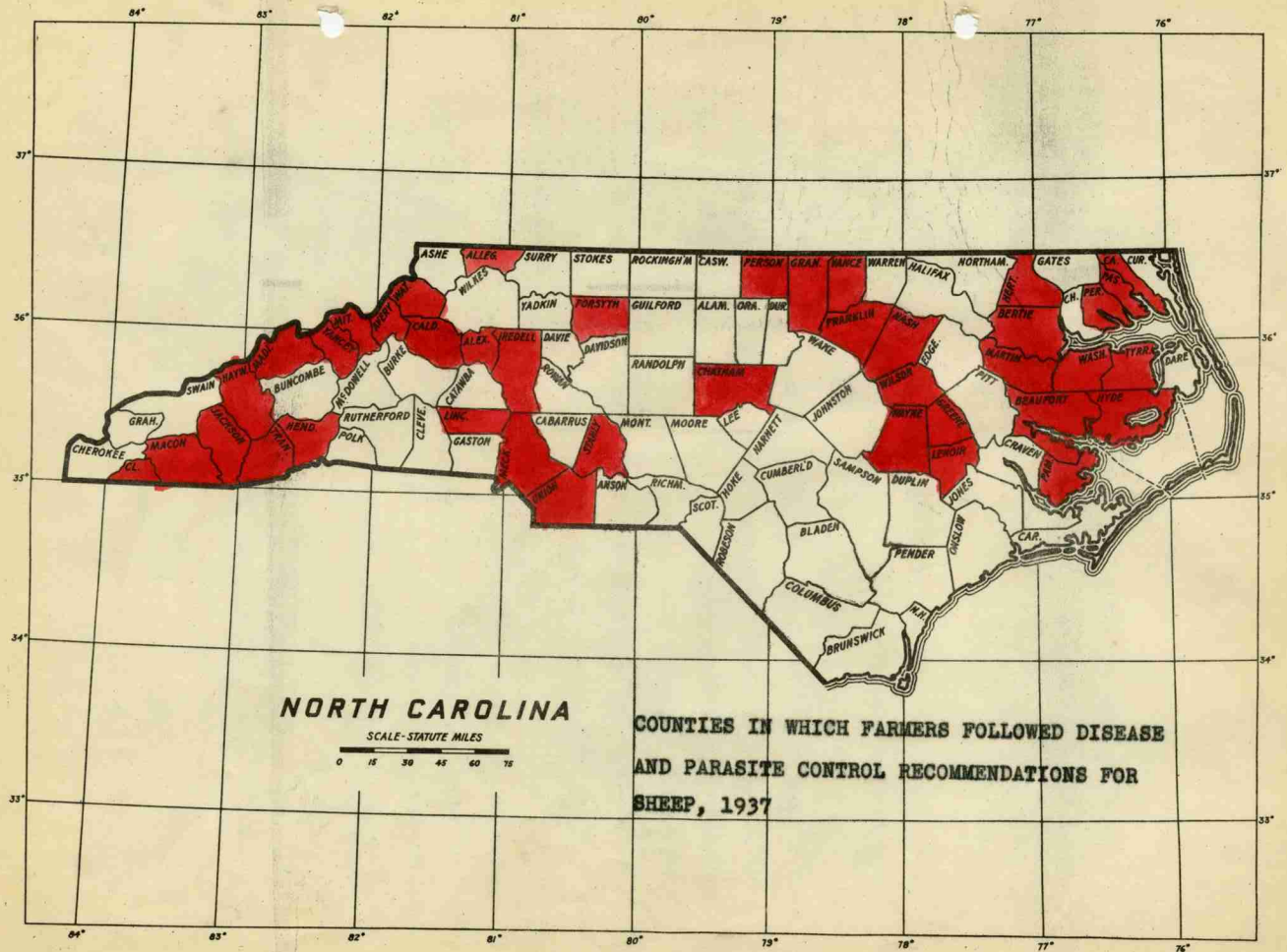
VII. PARASITE AND DISEASE CONTROL

Special effort was made during the year to persuade more sheep men to control internal parasites and diseases of sheep. The greatest headway was made in this line in counties where cooperative selling of graded lambs was taking place.

Thirty-nine counties reported 494 farmers following parasite control recommendations. Nineteen counties reported 141 farmers following disease control recommendations.

VIII. DOCKING AND CASTRATING LAMBS

While the big majority of our better sheep men have learned the importance, not to say necessity, of docking and castrating lambs it is still necessary in some sections to call the value



NORTH CAROLINA

SCALE-STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH FARMERS FOLLOWED DISEASE AND PARASITE CONTROL RECOMMENDATIONS FOR SHEEP, 1937

of this operation to the attention of market lamb producers. Twenty-one county agents reported 61 demonstrations in trimming market lambs.

IX. MARKETING

1. Lamb Grading and Cooperative Sales. While the number of market lambs graded and shipped cooperatively did not quite reach the goal of 4750 set at the beginning of the year, there was a decided increase in this practice over 1936. Twenty-five hundred and six lambs were shipped from three counties in 1936 while forty-three hundred and three were shipped from thirteen counties in 1937. Alleghany and Watauga Counties which were the two to start the grading and cooperative selling increased the number of lambs handled from 2410 lambs in 1936 to 2824 in 1937.

Not only were more lambs handled but there was a very noticeable improvement in the quality of the lambs this year compared with the previous year. The following table shows the percentage of lambs of the various grades shipped from the state for the past three years:

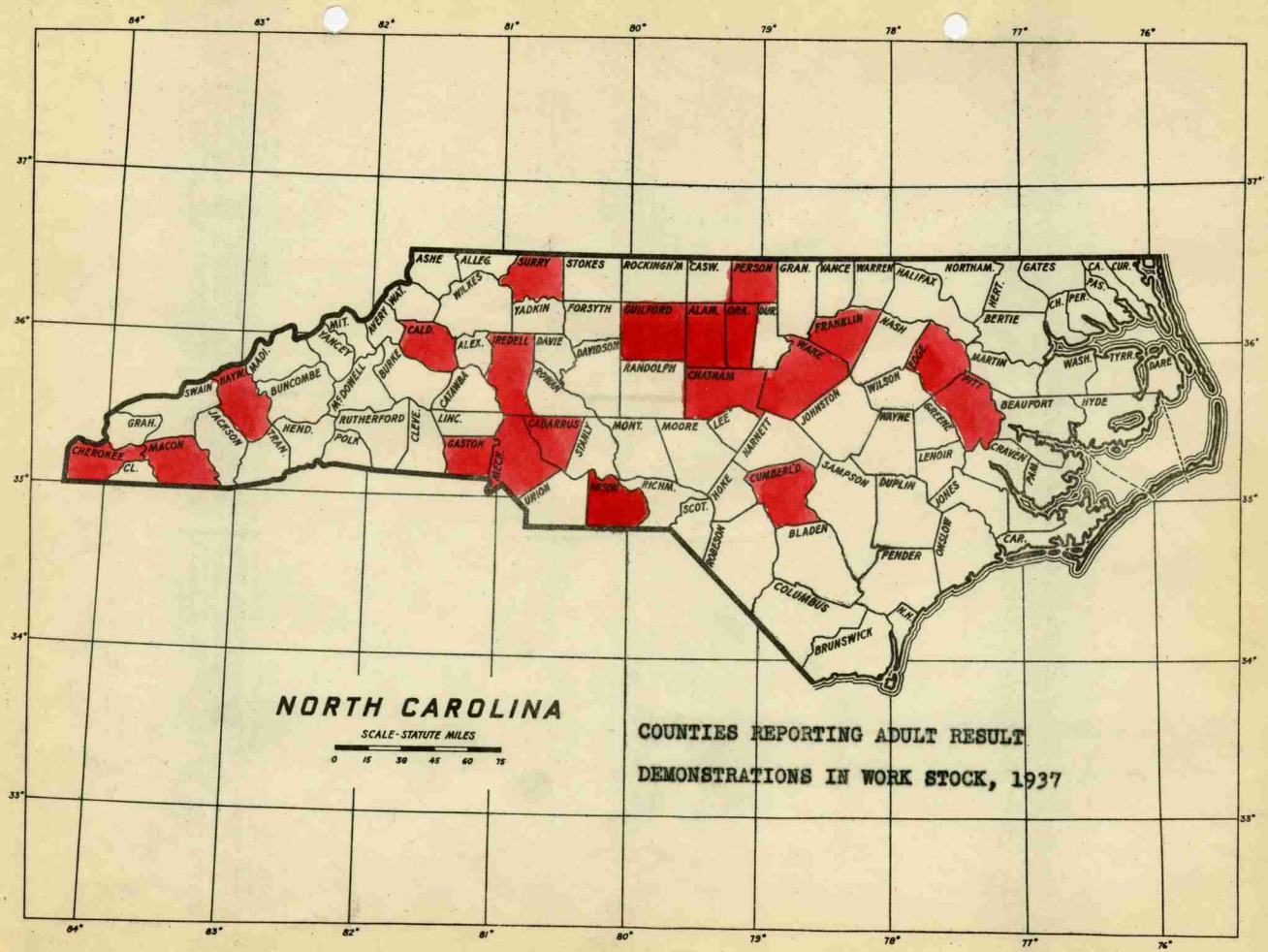
Year	Choice	Good	Good Bucks	Medium	Medium Bucks	Common and Cull	Total No.
1935	2.4	62.9	1.7	24.5	2.7	5.9	2324
1936	10.5	62.9	3.9	18.9	2.1	1.7	2410
1937	23.~~7~~	54.7	6.3	9.7	2.3	3.9	2824
1938	19.8	49.6	6.3	17.0	3.0	4.2	2881

2. Wool Pools. More wool was pooled and sold cooperatively in 1937 than in the previous year. In round numbers there was about 50,000 pounds handled in comparison with 30,000 the previous year. The majority of this wool came out of Alleghany and Watauga Counties with smaller amounts being pooled in Ashe, Avery, Mitchell, Yancey, and a few other counties. The top price received was 42 1/2 cents per pound. In the sections of small sheep population it was suggested that wool be shipped to a subsidiary of the United Wool Growers' Association at Richmond, Virginia. Where this advice was followed the growers were well pleased with the price received. A Mr. Alexander of Moore County was offered 23 cents per pound for his wool by a local buyer. He shipped it to Richmond and there received 42 cents per pound for it net.

It is estimated that the wool handled cooperatively in the state was sold at an estimated increase value to the farmers of $2500.00. In addition to this saving, wool that was not pooled sold for decidedly more money in sections where pooling was done.

X. MISCELLANEOUS ACTIVITIES

1. Live Stock Field Day. The second Live Stock Field Day at the Blackland Experiment Station, Wenona, N. C. was well attended in spite of very bad roads. This experiment station is located in a section where beef cattle should be produced in much larger numbers than at present. There is a great deal of


NORTH CAROLINA
SCALE-STATUTE MILES
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COUNTIES REPORTING ADULT RESULT
DEMONSTRATIONS IN WORK STOCK, 1937
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SURRY
STOKES
ROCKINGH'M
CASW.
PERSON
GRAN.
VANCE
WARREN
HALIFAX
NORTHAM.
GATES
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CUR.
PAS.
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MARTIN
WASH.
TYRR.
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BEAUFORT
PITT
EDGE.
NASH
FRANKLIN
WARR.
WILSON
JOHNSTON
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JONES
ONSLOW
CAR.
DUPLIN
SAMPSON
CUMBERL'D
HOKE
SCOT.
ROBESON
BLADEN
PENDER
COLUMBUS
BRUNSWICK
NEW.
RICHM.
MOORE
LEE
HARNETT
MONT.
STANLY
UNION
ANSON
CABARRUS
IREDELL
DAVIE
DAVIDSON
RANDOLPH
CHATHAM
GUILFORD
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ORA.
SUR.
YADKIN
FORSYTH
WILKES
ALEX.
CALDW.
CATAWBA
ROWAN
BURKE
LINC.
GASTON
CLEVE.
RUTHERFORD
POLK
MCDOWELL
YANCEY
MIT.
AVERY
WATAU.
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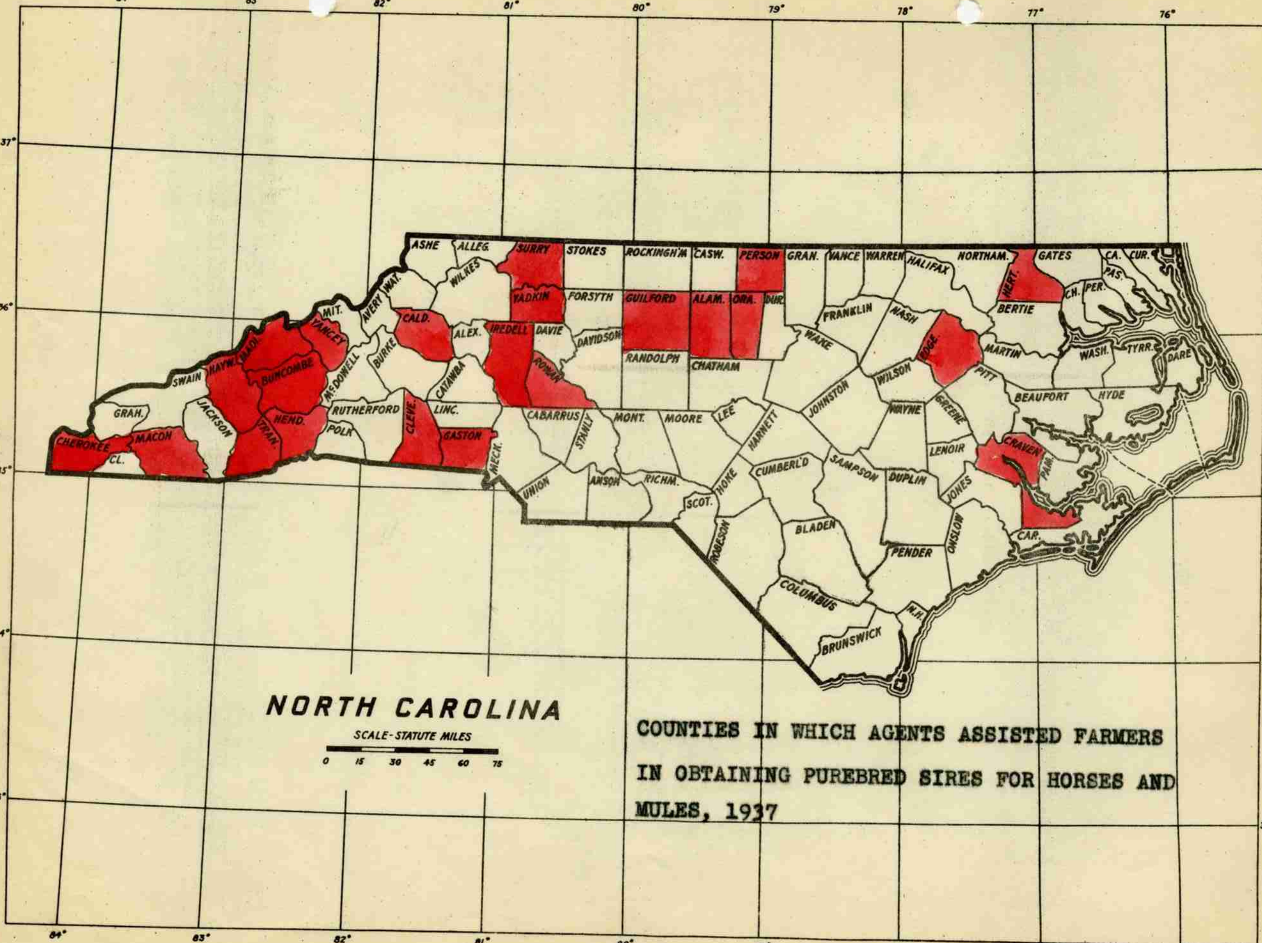
NORTH CAROLINA
SCALE-STATUTE MILES
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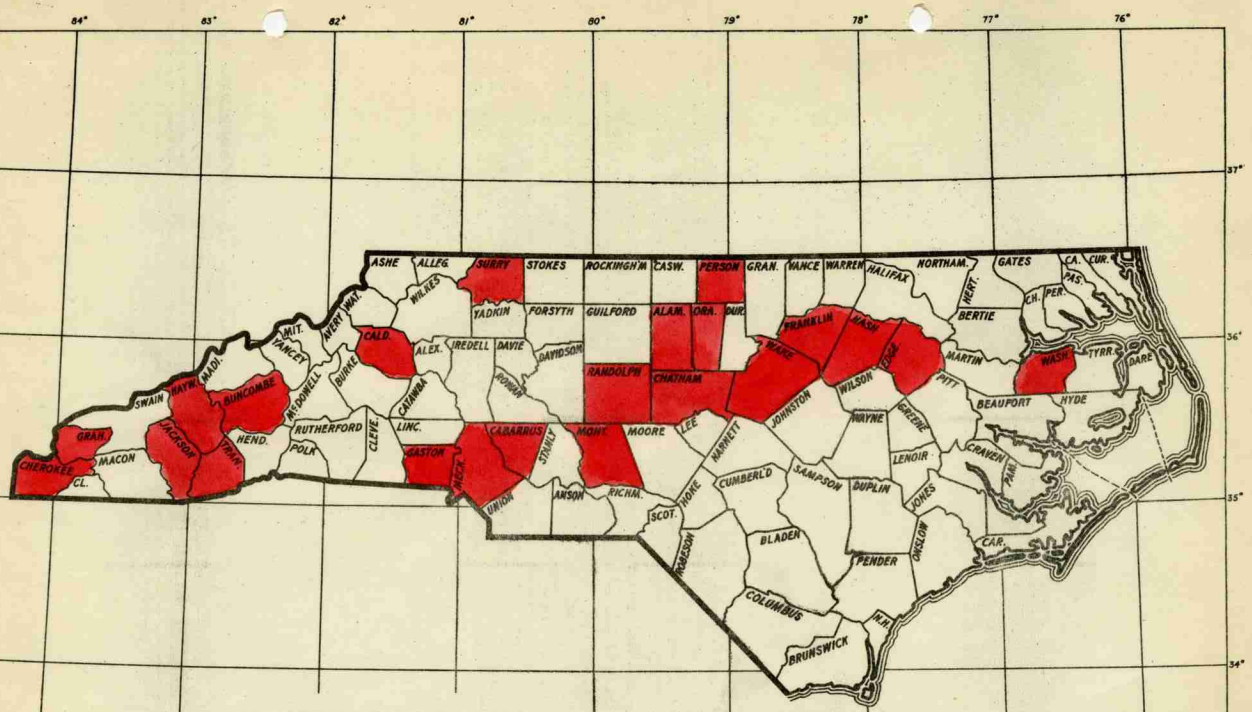
N.H.
BRUNSWICK

COUNTIES IN WHICH AGENTS ASSISTED FARMERS IN OBTAINING PUREBRED SIRES FOR HORSES AND MULES, 1937



NORTH CAROLINA

SCALE-STATUTE MILES

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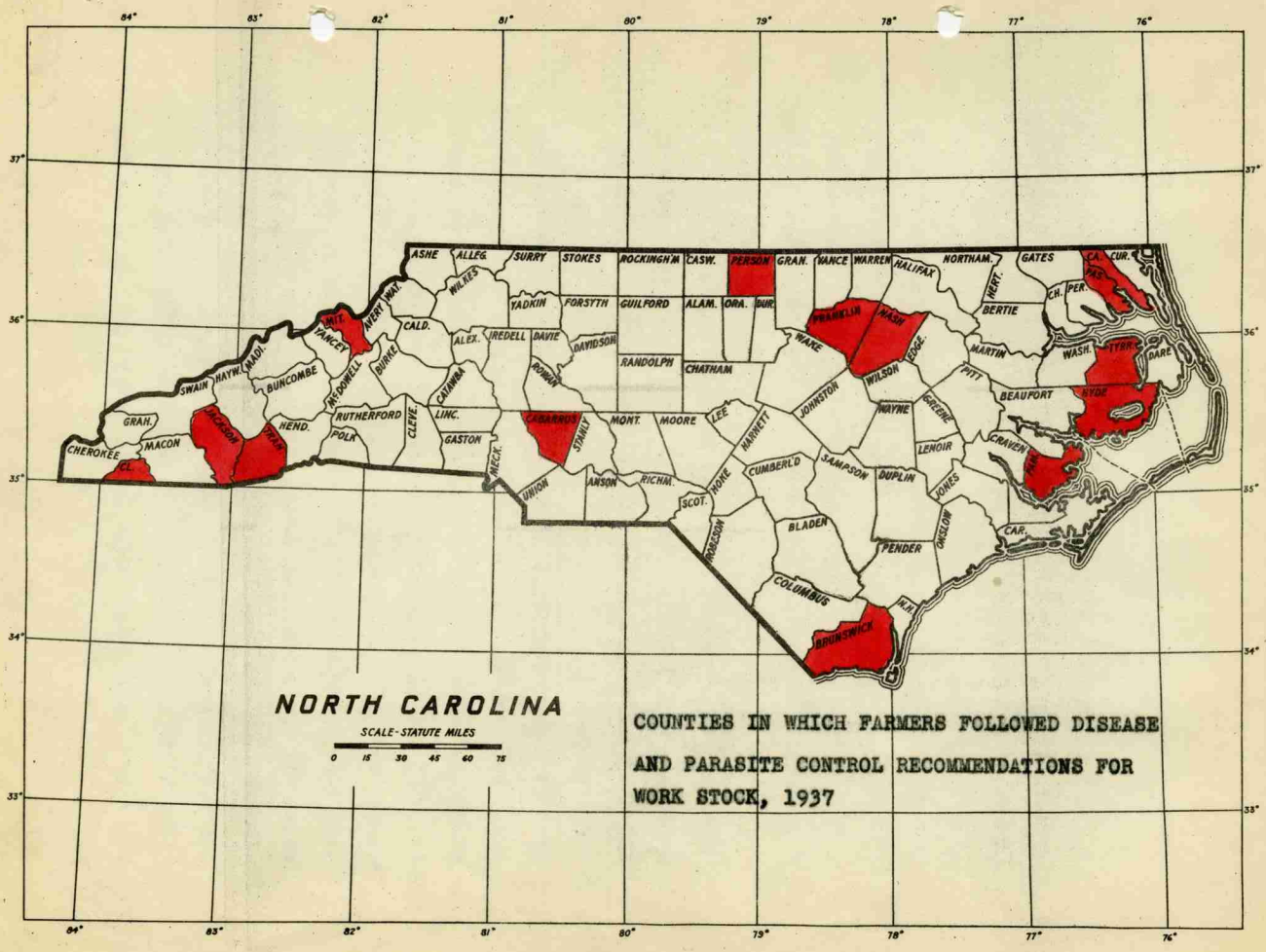
COUNTIES IN WHICH AGENTS ASSISTED FARMERS IN OBTAINING HIGH GRADE OR PUREBRED FEMALES FOR WORK STOCK, 1937



NORTH CAROLINA

SCALE - STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH FARMERS FOLLOWED DISEASE AND PARASITE CONTROL RECOMMENDATIONS FOR WORK STOCK, 1937

native grazing available and in addition Wenona is in a surplus corn and hay area. The Extension Animal Husbandman suggested this live stock field day thinking that it would tend to create more interest in the production of beef cattle in that section. This year nearly 100 farmers from Hyde, Tyrrell, Washington, Beaufort, Bertie and Pitt Counties attended the meeting. Results of experimental feeding work with both cattle and swine were reviewed. In addition the breeding herds and flocks were inspected.

2. Shearing Schools. The week of May 8, was devoted to shearing schools and shearing demonstrations in our mountain counties. Mr. E. S. Bartlett of the Chicago Flexible Shaft Company, Chicago, Illinois, put on a shearing demonstration in the morning of each day. Mr. Paul L. Fletcher at that time Manager of the Jersey City branch of the Eastern Live Stock Cooperative Marketing Association, and now Marketing Specialist with the North Carolina State Department of Agriculture, talked on the outlook for lambs and the general plan of grading and cooperative shipping of lambs. In addition the county agent made a short talk on lamb and wool production and the animal husbandry specialist talked on the outlook for wool and the proper way of handling it after it is off the sheep's back. In the afternoon a shearing school was conducted by Mr. Bartlett and 4-H Club boys, agricultural high school boys, and young

farmers were given detailed instructions on the proper way of shearing sheep. During the week there were a total of about forty young men given rather careful instructions on shearing. Several of the boys who received instructions went ahead and did custom shearing in their community.

3. Hereford Breeders' Meet. Following a custom started in 1935 State Hereford Breeders held their annual get-together at Robert S. Shipley's farm near Vilas, Watauga County on October 5. This was the best meeting of the kind that has been held and plans for the exhibition of more Herefords at the State Fair and County Fairs were discussed. Several breeders also expressed a desire to hold an annual sale of registered Herefords. In addition definite action was taken in regard to raising money for special premiums to be offered on Hereford steers at the 1938 Asheville Fat Stock Show. The meeting will be held on Mr. W. F. Hipps' farm in Haywood County in 1938.

4. Judging. In response to a request from R. E. Davis, Animal Husbandry Specialist, in Georgia, a trip was made to Atlanta in April to assist in judging the Fat Cattle Show there. Judging was also done at four county or community fairs.

5. Out of State Trips. Out of state trips were made to the International Live Stock Show in Chicago; the Association of Southern Agricultural Workers at Nashville, Tennessee; and a four-state Market Lamb Meeting at Bristol, Virginia.

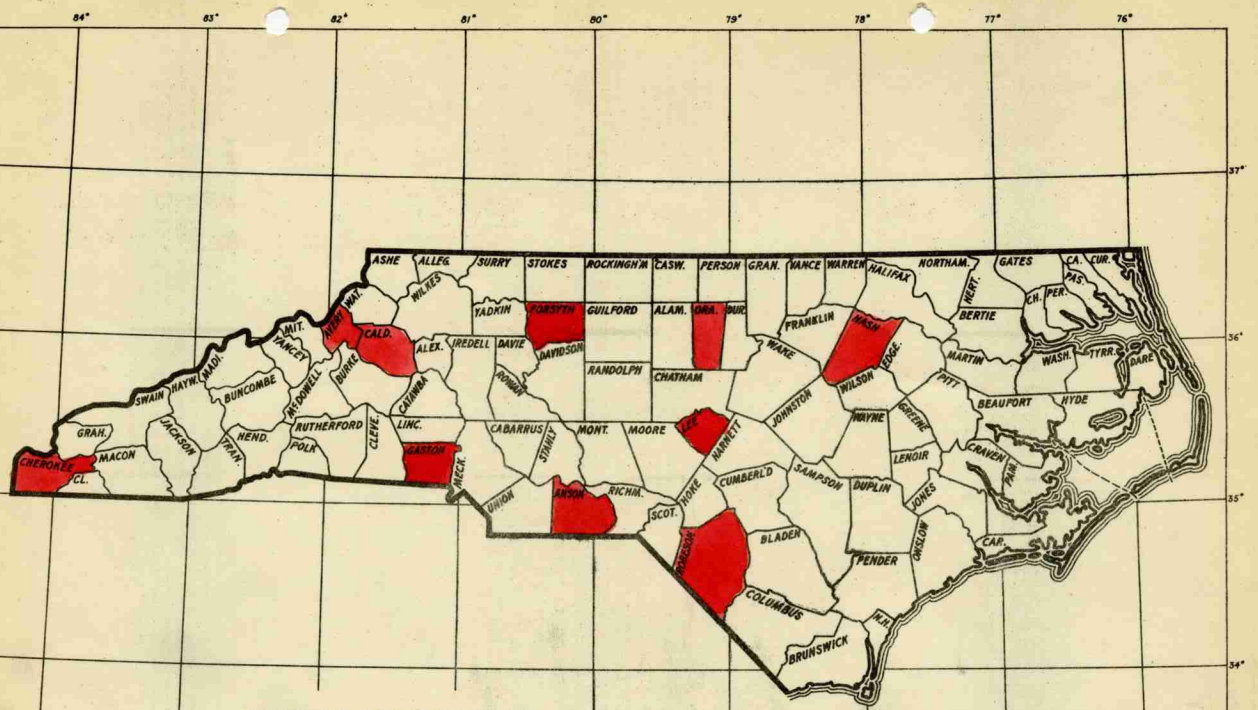
6. Publications. Extension Circular No. 217 entitled "Feeding Cattle For Market" was prepared and published during the year. A copy of the same is included in this report.

7. Meats. During 1937 Professor R. E. Nance of the Animal Husbandry Department was loaned to Extension for a total of thirty-six days. During that time he conducted sixty-three slaughtering, cutting and curing demonstrations in thirty-five counties with a total attendance of 2293. The majority of these demonstrations were with swine. In addition to this county agents reported 92 families were assisted in home butchering, meat cutting, and curing with cattle, and 12 farmers in seven counties were assisted with the butchering of lambs or sheep.

STATISTICAL SUMMARY

(As taken from Annual Reports of County Agents)

	Beef Cattle		Sheep		Work Stock	
	Co's.	Units	Co's.	Units	Co's.	Units
1. No. days devoted to line of work by County Agents and Assistants	84	915	60	394	69	294
2. No. days devoted to work by Specialist	40	91	23	77	5	5
3. No. adult result demonstrations conducted	47	398	28	134	20	38
4. No. meetings at result dems.	19	45	9	13	9	9
5. No. method dem. meetings held	14	42	21	61	6	16
6. No. other meetings held	18	32	13	39	10	17
7. No. news stories published	43	157	28	94	27	49
8. No. different circular letters issued	28	76	27	93	14	26
9. No. farm visits made	80	2807	54	1038	65	942
10. No. office calls received	81	4611	53	2393	69	2536
11. No. 4-H Club members completing	29	113	14	15	5	17
12. No. farmers assisted in obtaining sires	48	178	37	121	22	31
13. No. farmers assisted in obtaining high grade or purebred females	38	211	20	110	22	312
14. No. families assisted in home butchering, meat cutting & curing	10	92	7	12		
15. No. farmers following parasite & disease control recommend's.	32	806	58	635	18	243
16. No. farmers following marketing recommendations	29	466	30	829	6	67

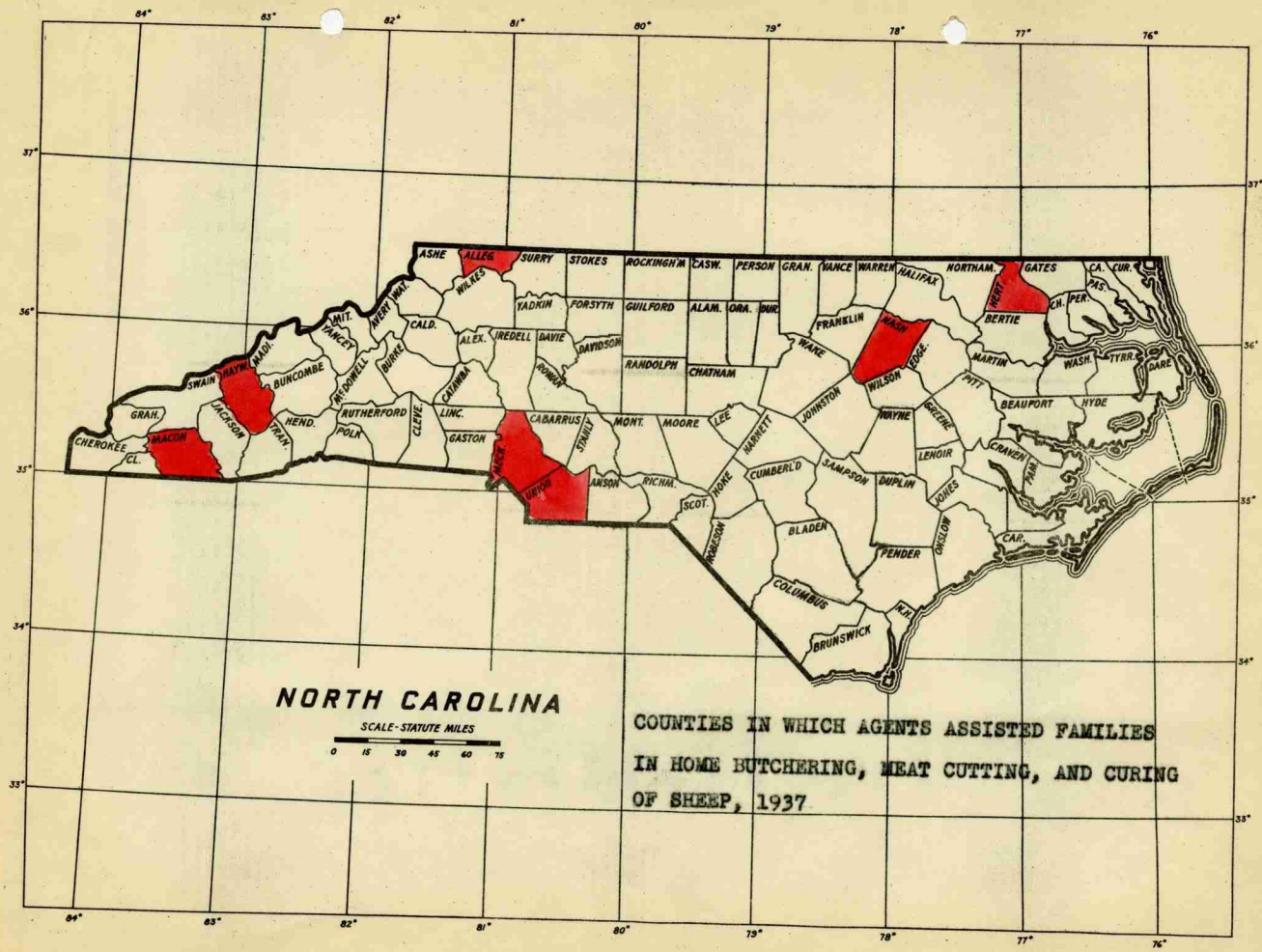


NORTH CAROLINA

SCALE - STATUTE MILES

0 15 30 45 60 75

COUNTIES IN WHICH AGENTS ASSISTED FAMILIES IN HOME BUTCHERING, MEAT CUTTING, AND CURING OF BEEF CATTLE, 1937


NORTH CAROLINA
SCALE-STATUTE MILES
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COUNTIES IN WHICH AGENTS ASSISTED FAMILIES IN HOME BUTCHERING, MEAT CUTTING, AND CURING OF SHEEP, 1937
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VANCE
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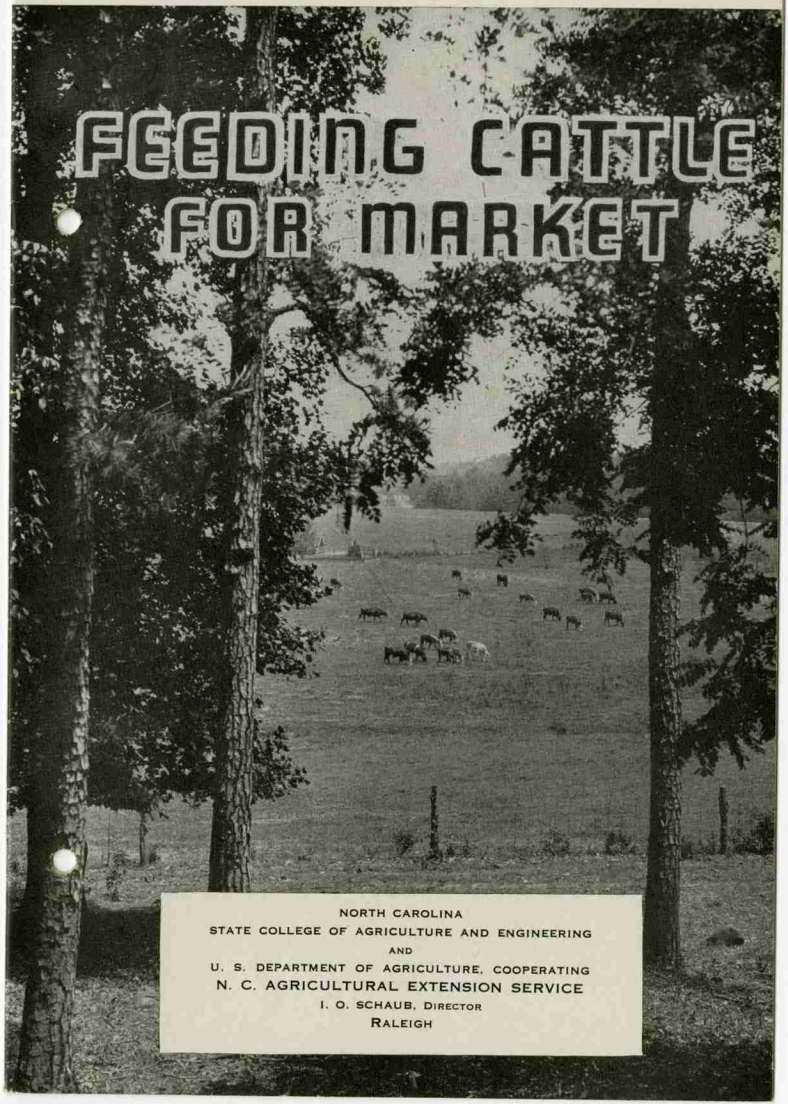
November, 1937 Extension Circular No. 217

FEEDING CATTLE FOR MARKET



NORTH CAROLINA
STATE COLLEGE OF AGRICULTURE AND ENGINEERING
AND
U. S. DEPARTMENT OF AGRICULTURE, COOPERATING
N. C. AGRICULTURAL EXTENSION SERVICE
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FEEDING CATTLE FOR MARKET

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The two main objects of fattening cattle are the marketing of crops and the production of manure for soil improvement. The farmer should determine the number of cattle that he can feed to the best advantage through an average year and make that a part of his regular program. In this way cattle feeding will be profitable in the long run, if due credit is allowed for the manure produced.

The value of manure and the importance of properly conserving it is well illustrated by the following digestion trials with two year old steers at the Illinois Experiment Station:

Percent of consumed nitrogen excreted	87
Percent of consumed phosphorous excreted	87
Percent of consumed potassium excreted	90
Percent of consumed organic matter excreted	26

In addition to the fertilizing elements of animal manures there is much value in the organic matter they add to the soil. This gradually breaks down and in so doing much plant food in the soil, otherwise insoluble, is made available for promoting plant growth. Then too, manures contain many kinds of bacteria which bring about chemical changes in the soil, thus releasing plant foods that would otherwise lie dormant. The humus formed from the organic matter of manure is also valuable in retaining moisture and improving soil texture.

In view of the fact that much of the nitrogen and potassium contained in manure is in liquid form it is extremely important that plenty of bedding be used. Ample bedding also contributes much to the thrift and well being of cattle in the feed lot.

As a rule in fattening cattle for the market, manure is allowed to accumulate in the feeding barn or shed and removed directly to the fields either after the feeding period is over or at intervals during the feeding period. This is as it should be, for ample bedding material and the tramping of the cattle preserves the manure and allows very little loss. Of course judgment should be used in regard to spreading manure on sloping land very far in advance of turning it under on account of the danger of loss by washing.

Should occasion require the removal of manure from the feeding barn prior to the time for spreading it do not pile it in loose piles because of danger of leaching and heating. The pile should be made high with perpendicular sides and the top sloping toward the center. This allows moisture to soak into the pile rather than to drain off. It is well that it be kept damp and well packed.

Manures are lower in phosphorus than in nitrogen or potassium. For this reason superphosphate should be either applied directly to the soil, scattered over each load of manure as it is hauled to the field or scat-

younger the cattle the cheaper the gains. The results of several years work at one of the Experiment Stations showed the feed cost per 100 pound gain to be $7.74 on calves, $9.09 on yearlings and $9.37 on two year olds.

The length of the feeding period should vary with the age of the cattle, the quality of the cattle, and their condition when started on feed. The more mature the cattle the quicker they will finish because less nutrients are required for growth. It will pay better to carry the higher grades of cattle over a long feeding period than it will the lower grades because our central markets are willing to pay for extra finish on the better grades of cattle. If cattle are being fed on cottonseed meal with no other concentrate, safety limits the feeding period to from 100 to 120 days. Again, if cattle are to be sold locally a short feeding period usually insures more profit than a long one due to the fact that local butchers and packers do not, as a rule, pay sufficiently for extra finish. Of course, it goes without saying that the higher the condition of the cattle at the beginning of the feeding period, the shorter the time it will require to get them ready for market.

The Expense of Buying and Marketing the Cattle. The feeder should take into account not only the purchase price of his cattle, but the cost of shipping to and from his farm. This expense includes freight, shrinkage, commission charges, and often feed in transit.

The Selling Price. The seller has little to say about what he is to get for his cattle after they are on the market but he does have a chance to exercise judgment regarding to whom and where he sells.

THE FEED LOT AND FEED LOT EQUIPMENT

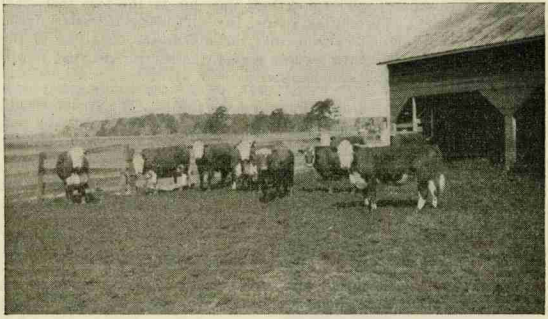
It does not pay to over-crowd cattle in yards or shelter. Ninety to 100 square feet of yard and shelter is about right for a mature steer. About one-fourth of this should be shelter. In our climate of heavy rain fall it will often pay to floor or pave the lot outside of the shelter. This will save bedding and manure, keep the cattle out of the mud, and increase the gains of the cattle and the hogs following them. Under some conditions it is advisable to keep cattle entirely under cover but, where this is done, plenty of space and ventilation should be provided. From 2½ to 3 linear feet of trough space is required for each mature steer. Yearlings take about two-thirds as much yard and trough space as older steers, and calves can be carried to 900 or 1000 pounds weight in about half the space required for two year olds, because they become accustomed to their quarters and to each other while small. Horned cattle, especially two year olds or older, require at least a half more trough and rack space than dehorned or polled cattle.

Feed troughs used by beef cattle should be of good 2 inch material. They should be at least 30 inches wide, but 36 inches is preferable for mature cattle. The sides of the trough should be from 6 to 10 inches deep. The legs should be of 4 x 4 inch material well braced and bolted to the body of the trough. The floor of the trough should be 20 inches from the

ground for mature cattle. When used for calves the legs may be set in the ground. Feed troughs inside a barn or shed should be adjustable as to height to accommodate cattle of various ages as well as to provide for the accumulation of manure.

Scales are valuable as a part of the regular feed lot equipment. Many successful feeders make a practice of weighing their cattle at regular intervals. They should be located close to the feed lot so that the cattle can be weighed with a minimum of disturbance yet so that they can be used for other purposes.

Water supply must be sufficient and constant. A day or so of short



Too much lot space makes cattle restless and reduces gains. A large lot is also hard to keep well bedded and dry under feet.

water supply will cut gains and throw cattle off feed as quickly and almost as surely as will radical changes in feeding.

Salt and Minerals. Salt should be accessible for fattening cattle at all times. If they are deprived of salt for several days they are apt to eat so much when it is made available, that it causes a deranged condition of the bowels.

Authorities are not in agreement as to the necessity of feeding a mineral mixture to livestock, other than hogs, unless there is a known deficiency in the feed. However, it is generally thought that a mineral mixture is not needed if a legume hay is fed.

It may be advisable to keep a mineral mixture in addition to salt before the cattle, especially when no legumes are fed. A mixture of 40 per cent finely ground limestone, 40 per cent steamed bone meal and 20 per cent salt should prove satisfactory.

DRY LOT FEEDING

Cattle purchased in the fall for winter feeding may be turned on corn stalks, soybean stalks, pasture or meadow upon their arrival on the farm. This will not only utilize feed that might otherwise be wasted but it also gives the cattle a chance to recover from their trip to the farm. They may well be carried under such conditions for from one to three weeks but should be put up into the feed lot before they stop making satisfactory gains.

Getting Cattle on Feed. Opinions differ as to the proper length of time required to get cattle on full feed. However, it should generally vary with the length of the feeding period. Cattle that are to be short fed should be got onto full feed, in about three weeks while 4 to 5 weeks or more time may well be taken with cattle that are to be fed for longer periods.

Following are some general suggestions for getting cattle onto feed, but it should be remembered that the successful feeder always watches and studies his cattle and varies his methods to fit his individual case.

1. Feed a large amount of roughage at first and a small amount of grain or other concentrates, cutting down the amount of roughage as the concentrates are increased.
2. If a protein supplement such as cottonseed meal is to be fed in an amount not to exceed 3 pounds it is all right to feed this amount from the start. Where larger amounts are to be fed it should be gradually increased.
3. Method of getting 2-year old cattle on feed.
   a. Feed all the roughage they will take.
   b. Start with 2 to 3 pounds of cottonseed meal and 2 pounds of shelled corn or the equivalent per steer daily.
   c. Increase corn one pound per steer daily until they are receiving 10 to 12 pounds.
   d. Then increase corn gradually 2 pounds for each 5 days until cattle are getting all they will clean up.
   e. As feeding period advances cattle will take more or less corn depending on weather conditions and their appetites.

Choice of Concentrates and How to Feed Them

One of the main objects in feeding cattle is to utilize feed produced on the farm. Home grown feeds should, therefore, be fed as far as is practical. However, there are some farmers who feed cattle for the manure, and who purchase the bulk of the feed. Moreover, it may pay in some cases to sell one kind of feed and purchase another. In most cases it pays to buy a protein supplement such as cottonseed meal to balance the ration.

Corn is the best fattening feed we have and may be fed in the broken ear or shelled form if hogs follow the cattle. Otherwise, it may be fed as coarsely ground corn meal, crushed corn and cob, ground corn and cob, or ground corn, cob, and shuck meal.

The weight of pigs that may be used to follow cattle is from 50 to 150 pounds, and enough should be provided to utilize the waste feed. The number of pigs needed to follow two year old steers will vary with the form in which the corn is fed as follows:

1 to 3 pigs per steer on snapped corn.
1 to 2 pigs per steer on husked ear corn.
1 pig per steer on shelled corn.
1 pig per 2 or 3 steers on crushed or ground corn.

The younger the steers the better they chew and digest their feed. Therefore, the number of pigs following young cattle should be less than with older steers.

Pigs following fattening cattle should be given an animal protein supplement and minerals.

Barley may be used to replace corn pound for pound. It should be coarsely ground.

Wheat is nearly equal to corn or barley in feeding value and if cheaper may be used to replace either one. It should be coarsely ground.

Oats are too high in fiber and protein to be used for fattening cattle. They are a good growing feed and are generally used as such. However, if they are home grown and cannot be sold at a fair price they may be used satisfactorily with corn for starting cattle on feed. This is especially true of calves being fed for baby beef. They may be fed whole or crushed.

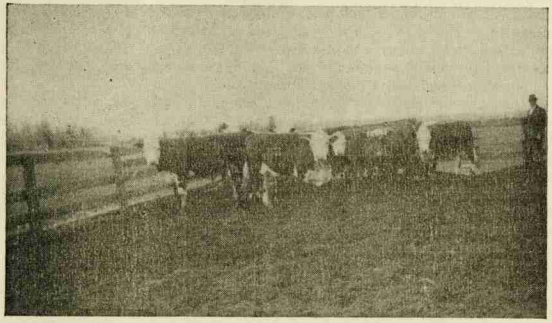
Cottonseed Meal, Soybean Meal, Peanut Meal, or other protein-rich concentrate should generally be used to supplement a grain ration. When they are cheaper pound for pound than corn or other carbonaceous grains, they are often fed as the sole concentrate. When this is the case, as a general rule they may be fed in amounts equal to one pound for each 100 pound weight of animal for 100 to 120 days. If it is fed longer than this, trouble is likely to result, unless some feed such as yellow corn, good quality legume hay, or other feed which contains Vitamin A is added to the ration.

Miscellaneous Concentrates, such as cotton seed, soybeans or peanuts, when low in price, are sometimes fed to cattle. In regard to cotton seed, experimental results show that cottonseed meal is worth about twice as much pound for pound. When any of these products are cheap enough to warrant their use as feed they can be used in place of protein supplements in fattening cattle in amounts of 2½ to 3 pounds per head daily. Larger amounts will prove too laxative due to high oil content. Even in the smaller amounts cattle are apt to tire of them after 90 to 100 days on feed when replacement with cottonseed meal or other common protein supplement is recommended. In preparing cottonseed, soybeans or peanuts for feeding only small amounts should be ground at a time. Otherwise they will become rancid.

Roughages

Corn Silage is a valuable feed for fattening cattle. Numerous experimental results show that silage feeding reduced the cost of each 100-pound gain by $1.00 or more. One ton of silage saved 227 pounds of concentrates and 605 pounds of legume hay. With corn at 56 cents a bushel and legume hay at $14.00 per ton, good corn silage is worth $6.50 per ton. A dry roughage should be fed in addition to silage.

Legume Hays are valuable roughages in cattle feeding. In addition to furnishing a dry roughage they also supply liberal amounts of proteins, minerals and vitamins that are quite essential in cattle fattening. Due to the high cost of legume hays, however, it is usually advisable to



CHOICE SLAUGHTER STEERS IN TIDEWATER CAROLINA.
These animals were fattened largely on home grown feeds and graded "choice" on the market.

limit the amount fed, giving a lower grade and less expensive roughage in addition. When a liberal supply of legume hay is available it is sometimes fed as the sole roughage with a full feed of corn and no protein supplement. It generally pays, however, to feed a protein concentrate in addition, especially during the latter part of the feeding period when the roughage consumption is relatively small.

Corn Stover may be used as the sole roughage in fattening cattle but more rapid gains will be obtained and less concentrates required per unit of gain when fed in conjunction with legume hay or silage. For carrying stocker cattle or breeding cows thru the winter, stover may be used satisfactorily in large amounts.

Grass Hays such as timothy or crab grass may be used satisfactorily when fed with silage or half and half with a good quality legume hay.

However, when they are used as the sole roughage, slower gains will be secured and larger amounts of concentrates required.

Straw is too low in nutrients to form any large part of the ration for fattening cattle. When corn, balanced with cottonseed meal, and silage are fed, good quality oat straw will satisfy the desire for a dry roughage and produce reasonably good gains. Barley straw stands second to oat straw in feeding value, wheat straw a low third, and rye straw of little value.

Cottonseed Hulls for a normal feeding period of 120 to 150 days are about equal to shredded corn stover. For a short feeding period of 60 to 90 days cattle will do slightly better on hulls as compared with stover as the sole roughage. Feeding trials conducted at the North Carolina, South Carolina, Mississippi and Tennessee Experiment Stations, show silage to be superior to cottonseed hulls for fattening cattle. The silage fed steers made larger and decidedly cheaper gains. Silage has a still greater superiority over hulls for a long feeding period, particularly when cottonseed meal is the sole concentrate.

When the production of manure is the main object of cattle feeding and the cost of transporting materials from the mill is not excessive, it is often practical to feed cattle on cottonseed meal and hulls with no other feed. However, as has been pointed out before, the amount of meal should not be excessive and the feeding period should be limited.

In feeding meal and hulls it is best to mix the meal with a small amount of hulls (five pounds of meal to one pound of hulls) then after this is eaten feed what additional hulls the cattle will eat.

SUGGESTED RATIONS

The quantities of feeds given in the rations listed below represent the total daily feed per head, averaged for the entire feeding period. The concentrates allowed a steer the last half of the feeding period would be in excess of the amount given, while that for the first half would be somewhat under. Corn is given as the main concentrate in most of these rations but as has been pointed out before, barley or wheat may be substituted in place of the corn. Furthermore, cottonseed meal may be fed in larger amounts to replace part or all of the corn if the price is cheaper pound for pound.

Cattle should be fed both concentrates and roughages twice daily at regular hours.

400-Pound Steers

DRY RATIONS

		Pounds
1	(Corn	12
	(Cottonseed Meal	1
	(Legume Hay	6
2	(Corn	10
	(Cottonseed Meal	2
	(Mixed Hay	At will
3	(Barley (ground)	12
	(Cottonseed Meal	2
	(Corn Stover	At will

SUCCULENT RATIONS

		Pounds
1	(Corn	10
	(Cottonseed Meal	1¾
	(Mixed Hay	At will
2	(Corn	10
	(Cottonseed Meal	2
	(Corn Stover	At will
	(Silage	10

600-Pound Steers

DRY RATIONS

		Pounds
1	(Corn	14
	(Cottonseed Meal	1½
	(Legume Hay	6
2	(Corn	13
	(Cottonseed Meal	2½
	(Mixed Hay	At will
3	(Corn	13
	(Cottonseed Meal	2½
	(Cottonseed Hulls	
	(or	
	(Corn Stover	At will

SUCCULENT RATIONS

		Pounds
1	(Corn	12
	(Cottonseed Meal	2
	(Mixed Hay	At will
	(Silage	9
2	(Corn	10
	(Cottonseed Meal	1½
	(Legume Hay	5
	(Silage	20

800-Pound Steers

DRY RATIONS

		Pounds
1	(Corn	16
	(Cottonseed Meal	2
	(Legume Hay	7
2	(Corn	15
	(Cottonseed Meal	2½
	(Mixed Hay	At will
3	(Corn	15
	(Cottonseed Meal	3
	(Cottonseed Hulls	At will
4	(Cottonseed Meal	8
	(Cottonseed Hulls,	
	(Corn Stover or	
	(Grass Hay	20

SUCCULENT RATIONS

		Pounds
1	(Corn	14
	(Cottonseed Meal	2¼
	(Mixed Hay	At will
	(Silage	14
2	(Corn	12
	(Cottonseed Meal	2¾
	(Corn Stover	At will
	(Silage	25
3	(Cottonseed Meal	8
	(Cottonseed Hulls or	
	(Corn Stover	10
	(Silage	20

1000-Pound Steers

	DRY RATIONS	*Pounds*		SUCCULENT RATIONS	*Pounds*
1	(Corn	18	1	(Corn	16
	(Cottonseed Meal	2½		(Cottonseed Meal	3
	(Legume Hay	8		(Legume Hay	5
				(Silage	25
2	(Corn	16	2	(Corn	15
	(Cottonseed Meal	3		(Cottonseed Meal	3
	(Mixed Hay	At will		(Mixed Hay	At will
				(Silage	17
3	(Corn	17	3	(Corn	14
	(Cottonseed Meal	3½		(Cottonseed Meal	3
	(Straw or Stover	At will		(Corn Stover or	
				(Cottonseed Hulls	At will
4	(Cottonseed Meal	10		(Silage	30
	(Cottonseed Hulls	10			
	(Corn Stover	10	4	(Cottonseed Meal	10
				(Cottonseed Hulls or	
				(Corn Stover	10
				(Silage	25

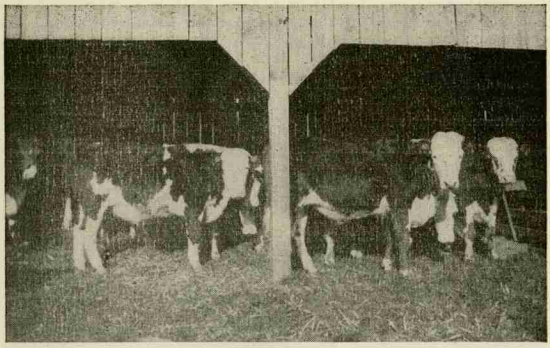
The amount of concentrates that a steer will consume will depend upon the individuality of the animal, the rapidity with which he is gotten on full feed, and on the amount and character of the roughage fed. Roughly speaking, a 1000-pound steer on full feed will consume 15 to 20 bushels of corn or its equivalent the first 60 days, 25 to 30 bushels the first 90 days, 40 to 45 bushels the first 120 days and from 50 to 60 bushels in 150 days. A heavy silage ration or good quality legume hay will cut down the amount of concentrates consumed.

FINISHING CATTLE ON GRASS

Prior to the beginning of this century more cattle were fattened on grass than in the dry lot. This consisted of feeding grain to the cattle while they were on pasture or finishing them on grass alone. The latter practice still prevails in southwestern Virginia where heavy, three and four year old steers are fattened on blue grass and shipped to the eastern markets in the fall. The feeding of grain on grass is not uncommon in certain sections of Tennessee and Northern Virginia as well as in other parts of the country.

In the better grass sections of Western North Carolina heavy cattle are sometimes shipped to the killers at a better price than they would bring as feeders. It is quite possible that more direct selling would be practical in this State, especially when cattle are carried on pastures that have been improved by fertilization or if some grain is fed in addition to grass.

Where grain is fed on grass the recommended ration is 8 parts by weight of corn to one of cottonseed meal fed once a day preferably in the late afternoon.



FIRST CROSS HEREFORD STEERS.

The cattle were fed corn, balanced with cottonseed meal with soybean hay as roughage. They made a net profit of $30.00 a head in addition to the manure.

CREEP FEEDING BEEF CALVES

The supplementary feeding of beef calves while they are nursing their dams is being practiced successfully by cattlemen in several states. There are two ways of doing the feeding. One is to allow the calves to run continually with cows, feeding grain in a creep. The other is to separate the calves from the cows when they are six weeks or two months old, allowing them to nurse twice daily, and keeping feed before them in a barn or open shed connected with a separate pasture that is used exclusively by the calves.

If the creep is used it should be located in a spot that the cows and calves visit often each day. An ideal place is in the shade near the watering and loafing place. If a salt box is placed near by it will cause the herd to spend more time in that vicinity. The creep may be built of lumber, poles or wire with opening 18 inches wide by 3 feet high. This size opening allows the calves to pass thru, yet is small enough to exclude the cows. A regular feed trough with a roof over it or a self-feeder similar to that used for feeding hogs may be used. If the self-feeder is used it should be set on legs.

Difficulty is sometimes experienced in getting calves started on feed in the creep. This is especially true if they were not started on grain before being turned onto pasture. It will help to get them started if the cows and calves are driven to the creep each day for a few days, or it may be necessary to allow the cows to eat with the calves for a few times.

The purpose of supplementary feeding is to finish the calves at an early age and at a weight that is desirable on the market. To do this it

is essential that a considerable quantity of grain be consumed. Unless the pasture is small and with only one place for water and shade it will no doubt be best to separate the calves from the cows and allow them to nurse twice daily. This method, while a little more trouble, keeps the milk supply regular, the cows in better condition, and assures a greater feed consumption by the calves.

If this plan is followed, pasture should be abundant and shade and fresh water provided. They should be allowed to nurse and have grain regularly.

Shelled corn is the most essential feed for calves being pushed for market, but experience has shown that a protein supplement fed with corn produces more rapid gains and a higher finish. Oats are useful only in getting calves onto feed.

Suggested Rations

Age of Calf	*Grain Mixture*	
2—3 Months	Shelled Corn	2 parts
	Oats	1 part
3—5 Months	Shelled Corn	8 parts
	C. S. Meal	1 part
5—10 Months	Shelled Corn	10 parts
	C. S. Meal	1 part

There is little or no advantage in grinding corn for calves as the cost of grinding usually more than offsets any advantage that there may be. Then too, calves do their own grinding to better advantages than older animals.

As a rule calves intended for creep feeding should be dropped in January and February although there may be some variation from these months either way. This makes it possible to get them nicely started on grain prior to the time they are turned to grass.

There are a number of advantages in feeding grain to calves. Some of the more important of these are:

1. Calves make better use of feed than older cattle. The Experiment Stations have proven conclusively that a calf will put on 100 pounds gain with only about two-thirds as much feed as an animal of similar grade a year or two older.
2. Selling the calves at a young age brings about a quicker turn over of capital.
3. The calves go to market when there are few of their kind there and consequently meet a ready demand.
4. Calves handled as outlined will reach a good market weight at from 10 to 14 months of age.
5. Heifer calves will sell along with the steers without the discount that is always put upon older heifers.
6. Supplementary feeding of calves makes it easier on the cows. This is especially true where calves are separated from the cows and nursed twice daily.
7. The cows will be easier to rebreed at the desired time.

8. The winter feed bill is reduced as dry cows and mature animals of any kind can be wintered mainly on coarse feeds of little market value while young animals need a high percentage of concentrated feeds and roughages of good quality.

In case the calves that have been creep fed are not carrying enough finish for the market at weaning time, they should be given a short feed in the dry lot.

GENERAL SUGGESTIONS

Bedding. Too much emphasis cannot be placed on the value of ample bedding in the feed lot. Cattle that are well bedded not only make better use of their feed but, due to their clean appearance, usually sell better

Ample bedding contributes to the thrift and well being of cattle in the feed lot. Note the gutter and eaves-spout that carries rain water away from the feed lot.

when they are ready for market. Furthermore, plenty of bedding conserves much manure that would otherwise be wasted. This in itself is justification for the use of large quantities of bedding.

Grain straws, shredded corn stover, pine straw and leaves are the most common bedding materials used in North Carolina. There is very little surplus straw produced in the State except in certain Piedmont counties, but there is a large surplus of corn stover, much of which never leaves the fields in which it is produced. Cattle raisers and feeders will do well to gather this stover and shred it for feed and bedding material.

Pine straw in Eastern North Carolina is the common bedding material used. It does very well when placed in the lot dry but when it is gathered

as needed it very often is already saturated with water to the point that it no longer has any absorbent qualities. When pine straw is used some provision should be made for gathering it when dry and storing or stacking it for future use.

Regularity of feeding is about as important as the kind of feed. If the cattle are to be fed at 7 o'clock in the morning and 6 o'clock at night, feed at these times every day.

Avoid radical changes in amounts or kinds of feed. Any changes should be made **gradually** and as a general rule any change should be for the better. For example, cattle may be started on broken ear corn, and later changed to corn and cob meal and finished up on shelled corn, while a change from shelled corn to broken ear corn would not be advisable.

Watch the cattle and the feed bunks. Be on the watch for steers that may be off feed for one reason or another. If any feed is left from one feeding period to the next clean it out and give it to the hogs or breeding cattle. **Keep the appetites keen.** If the cattle go off feed cut the amount down, then as their appetites come back, gradually increase it.

Do not try to force cattle to eat unreasonable amounts of low grade roughages such as corn stover, straw or cottonseed hulls. Beginners often have the idea that they can economize by inducing cattle to eat more roughage than they normally require. This may be all right for cattle that are being carried over but it is a mistake with cattle that are being fattened for market.

Grinding feeds does not increase their nutritive value nor does it increase the digestibility of feeds that can be masticated thoroughly. However small hard-coated grains such as rye, wheat and barley, should be ground or rolled. Coarse grinding is preferable to fine grinding because finely ground feeds are apt to cause digestive disturbances. It is also true that finely ground feeds are more liable to heat and spoil in the bin.

In feeding corn it is more economical to let hogs follow the cattle to consume the undigested kernels than to go to the expense of grinding. However, corn and cob meal is a safer feed in the hands of the inexperienced feeder than shelled corn.

Hay may be profitably ground or fed whole depending upon its price, quality and the cost of grinding. In other words when hay is high priced there is more advantage in grinding or shredding than when the price is low.

Corn stover and other low grade course roughages may well be shredded because the inedible parts can then be used for bedding to good advantage.

PREPARING CATTLE FOR SHIPMENT

It is to the advantage of the feeder to get his cattle to market with as little shrinkage and as little injury as possible. The following suggestions may be helpful.

1. As a general rule cattle should be kept on their accustomed feed up to the day for shipment. A heavy silage ration should be reduced and highly laxative feeds such as green grass or soy beans, should be withheld the last 24 hours.

2. Cattle will travel better if they are not too full, therefore, the last feed may be omitted or reduced.

3. Have the cattle at shipping point 2 hours before loading. This will give them time to rest and cool off.

4. Avoid undue excitement or haste in driving cattle to loading pens. If cattle are turned out in a large lot for a short time they can be driven to the loading pens with much less trouble than otherwise.

5. A moderate amount of water should be supplied at the pens prior to loading, especially if the weather is warm. If the shipping time is to exceed 24 hours a light feed of hay should be given.

6. Nothing is to be gained by excessive fills at the market as buyers will take this into account or not make a bid until late in the day when the fill has been reduced.

7. Preventable Losses. There is a tremendous loss due to bruising and crippling of livestock on their way to market. This loss is largely born by the producer but it can be prevented to a great extent by observing certain precautions.

a. Avoid excessive feeding or watering before loading in cars or trucks.

b. Avoid the use of prod poles in driving, loading or unloading cattle.

c. See that the truck or car in which cattle are transported is bedded with sand or other material to prevent slipping.

d. Look out for protruding nails, bolts, wires, etc., on the inside of trucks or freight cars.

e. Avoid over crowding in trucks or cars.

f. Separate mixed shipments by strong, well constructed partitions.

g. Avoid exposure in cold weather and lack of proper ventilation in hot weather.

Approximate Capacity of Railroad Cars

Approximate weights	*36 ft. car*	*40 ft. car*
400 pounds	50	56
600 pounds	37	40
800 pounds	30	34
1000 pounds	26	28
1200 pounds	22	23
1400 pounds	19	21

STATISTICAL SUMMARY

(From Specialist Reports)

No. days in the field	158
No. days in the office	129
No. days on annual leave	12½
No. days on sick leave	4½
No automobile miles traveled	16,949
No. railroad miles traveled	3,264
No. visits to county agents	201
No. visits to demonstrators	207
No. other visits	134
No. meetings addressed	30
Total attendance above meetings	974
No. office consultations	81
No. letters written	1,378
No. different circular letters	42
No. articles prepared	16
No. radio talks prepared and given	3

OUTLOOK

Animal Husbandry accomplishments are seriously handicapped by lack of man power. It is impossible for one man to do justice to the beef cattle, sheep and work stock industries of so large and varied a state as North Carolina. This is particularly true in view of the increased interest being shown as a result of the Soil Conservation Program and the increased production of feed and forage. In spite of this handicap prospects for definite results are promising for the coming year.

Phases of work to be pushed in 1938 are:

1. Grading and cooperative selling of lambs.
2. Beef Calf Club Work.
3. Feed lot fattening of cattle for the market if the outlook is favorable.
4. Better purebred herds and flocks for supplying stud sires.

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF NORTH CAROLINA

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
NORTH CAROLINA COUNTIES AND
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

EXTENSION SERVICE

May 24, 1937

State College Station, Raleigh, N. C.

SEASONAL SHEEP BULLETIN

Stomach Worms multiply the fastest and do the most damage in warm weather. Experience has taught us that regular treatment for stomach worms and other internal parasites should start June 1st, and be repeated each month during the summer and fall months. Detailed instructions for treating sheep for stomach worms accompany this letter.

Lamb Sales have started with a graded shipment from Tarboro on May 18th. A sale is scheduled at Plymouth on June 1st. and from Shawboro sometime early in June. Other graded sales will be made when enough lambs can be concentrated to make up a single deck which means 120 to 135 lambs. If not enough for a deck I see no reason why a large truck shipment cannot be made. Lambs may be shipped on consignment or f.o.b. bids can be secured in the same way hogs are being sold.

Good Rams Pay. Nothing pays better dividends than a good registered ram of the short legged, thick, blocky type. Such a ram will add dollars to the value of the lamb crop.

Rams will be very scarce in the state this year. Some have already been bought in Southwestern Virginia for the Eastern part of the State. Yearlings will cost a minimum of twenty-five dollars and better ones will cost considerably more. If you will need some good rams let me know and I will try to arrange a sale in your locality. Tennessee will hold a ram sale at Knoxville early in July and there will be some Southwest Virginia sales in July. I will keep you informed as to the dates.

If you are assisting your farmers to dispose of their wool either individually or collectively I suggest that you correspond directly with K. A. Keithly, Manager, United Wool Growers' Association, Box 596, Harrisonburg, Virginia; and The Chatham Manufacturing Company, Elkin, N. C.

I am anxious to get a few records of profits from commercial flocks this year. Such records will be on a gross income basis per ewe of breeding age. In other words if a man has ten ewes and sells twelve lambs for $96.00 and sixty-six pounds of wool for $26.40 his gross income will be $12.24 per ewe. Two farmers in Watauga County made records of $13.40 and $13.30 per ewe last year. Please let me have some records from your county this year. They will serve as good publicity and help to stimulate interest in sheep.

Yours very truly,

L. I. Case
Specialist in Animal Husbandry.

WINTERING THE BREEDING HERD OF CATTLE

The soil conservation program and the resulting interest in the growing of feed and forage crops, is increasing the interest in the keeping of small herds of beef cattle in Eastern North Carolina. This is as it should be because the keeping of beef cattle or livestock of any kind will ultimately make it possible to grow larger crops on a decreased acreage. This is not just a promotion talk, either, for several farmers in the coastal plains area of North Carolina have told me during the last year that their yields of cotton, tobacco, peanuts, and other crops have increased decidedly during the past few years since they have been keeping cattle on their farms. Geo. L. Pate of Robeson County who has been carrying a herd of beef cattle as an adjunct to his cotton and to tobacco farming tells me that he has increased his corn yield during the past six years from 25 to 35 bushels to the acre. He, also, states that his yields and quality of cotton and tobacco have improved by the use of stable manure in producing his crops.

One of the common mistakes that I have noticed by farmers generally is to allow their breeding herd to get too thin in the fall before they think about giving them winter feed. After the first hard frost, pastures in this part of the state do not furnish very much grazing unless they have been decidedly under-grazed during the summer months. As a rule supplementary feeding of some kind should start about the first of November. The way that cattle should be fed during the winter months depends entirely on conditions on the individual farm. As a general rule the young cattle and the cows nursing calves need better feeding and care than the dry, mature animals. In herds that are well managed and controlled breeding practiced, calves should be weaned about this time of the year, or possibly three or four weeks earlier. Where this is the case the dry cow herd can be wintered satisfactorily and very cheaply on stalk fields of corn, soybeans, and velvet beans. I might cite several cases of our leading cattle men who never feed their dry cows any harvested feed. They allow their cow herds the run of the stalk fields, which brings them through the winter in excellent condition. W. W. Jarvis of Currituck County, usually winters about forty dry brood cows on his stalk fields of corn and soybeans from which the grain has been harvested. These cows come through the winter without any shelter, and it is surprising to see the good condition that they are in when pasture is ready the following spring. Mr. Tom Temple of Scotland Neck, Halifax County, whom some of us call the Dean of cattlemen in the East, also winters his herd in a similar manner. In addition to the stalk fields of corn and soybeans, he makes very good use of winter cover crops, such as Abruzzi rye and winter legumes. Of course, one must be certain that there is sufficient feed of this kind. Some experimental records on Mr. Jarvis' farm and, also, on the Blackland Experiment Station at Wenona showed that a mature dry cow could be carried nicely for 100 days on from 3 to 4 acres of corn and soybean stalks.

On farms that do not have a sufficient acreage of stalks or velvet beans, and it is necessary to give the cattle harvested feed, it is suggested that 25 pounds of corn silage, 1 pound of cottonseed meal and a dry roughage of some kind will bring the herd

through in good shape. When silage is not to be had, dry cows should do well on a small amount of corn and cottonseed meal, together with 10 to 12 pounds of roughage such as corn stover, cottonseed hulls, or grass hay. If legume hay, such as soybean, peanut, peavine, or lespedeza, is to be had, the amount of concentrated feed can be reduced considerably, or perhaps left out entirely.

Two-year-old heifers or steers that are being wintered to be put on grass the following year can be fed in about the same manner as dry cows.

In the herd that is well managed the calves are dropped in the spring of the year, and they are ready to be weaned by the first of November. If a farmer is unfortunate enough to have late summer and fall calves, he must pay the bill and winter these cows in much better order than though they were dry. Cows nursing calves should be fed silage or have access to a green cover crop. In addition, they should have fairly large quantities of a good quality legume hay and enough concentrated feed to produce milk for the calves and stay in good condition themselves. In addition to wintering the cows well, it is also important that the nursing calves have access to feed of good quality. A nice way to handle the calves is to provide a separate stall near where their mothers are fed which can be entered by a small opening about 3 feet high and 18 inches wide which will admit the calves, yet exclude the larger animals. In this stall a low feed trough should be placed and cracked corn or oats together with a small amount of cottonseed meal or other protein concentrate should be placed where the calves can eat it whenever they feel the need.

Yearling cattle should be given a better quality of feed than two-year-olds or dry cows, due to the fact that they are growing and therefore need a higher proportion of bone and muscle building materials.

Last spring calves that have just been weaned from their mothers deserve the best attention of anything in the herd with the exception of the cows that are nursing calves. It is best that these calves be started on a little feed before they are taken off the cows. This will prevent a setback that is very often hard to overcome. A good ration for calves weighing in the neighborhood of 350 to 400 pounds, is, twelve pounds of corn silage, 1 pound of cottonseed meal, and legume hay at will. A non-silage ration that should prove satisfactory is legume hay, 5 pounds, corn stover or other low grade roughage at will, 2 pounds of corn, and 1/2 pound of cottonseed meal.

As was said before, there is no hard and fast rule for feeding that will cover all farms and all conditions. The person looking after the cattle should keep close watch of them and feed according to their needs. Not that it is necessary for breeding cattle to be kept in high flesh. On the contrary, they should not be fat but in good thrifty condition at all times.

Now just a word in regard to shelter. Expensive shelter is not necessary in our climate, but an open shed facing away from the prevailing winds where the cattle can run in and out at will is ideal under Eastern North Carolina conditions. It is important, however, that this shed be kept well bedded so that the cattle will have a dry place to lie. Cattle are better off out in the open or in the woods than in a lot that is knee-deep in mud.

Don't forget the water supply which should be constant. Salt should be available at all times, as well. In addition to salt, I think it a very good idea to keep a mineral mixture where the cattle can help themselves to it at all times. This is especially true when legume hays are not fed. A mixture of 40% finely ground limestone, 40% bone meal, and 20% salt, will help to assure normal development.

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EXTENSION SERVICE

State College Station,
Raleigh, N. C.

To Sheep Men in Eastern N.C.

At this time of year sheep growers should be harvesting their lamb crop and every care should be taken to save as many as possible.

From the breeding season to lambing time ewes should gain from 15 to 20 pounds. After summer pasture is gone the ewe flock should have access to some good quality legume hay such as soybean, pea vine or lespedeza. Let them have what they will eat of this in addition to what other feed they may gather in the fields.

About one month before lambing grain feeding should start. Ewes can well be given one-half pound or more per head per day - the exact amount depending upon their condition. If they are getting some green feed and good legume hay, corn alone will be all right.

Winter pasture of abruzzi rye, wheat or other small grain is excellent for sheep but it should not be depended upon as the sole feed for it often fails due to severe cold or other reason and the sudden change from a green succulent feed to dry feed is doubtless the cause of many winter losses of pregnant ewes.

The ewe flock should be housed at night at this time of year and those that are heavy with lamb should be separated from the others where possible. A lambing pen 4 by 4 feet square very often is a means of preventing disowning of lambs and other troubles.

Watch the young lambs. See that they get their milk. See that everything is right with them for every one saved will meam dollars in your pocket later on.

Feeding The Lambs

Of first importance in feeding the lambs is milk and plenty of it. See that the ewes are fed for milk production. The same feeds as recommended for the pregnant ewes may be fed, only in larger amounts after the lambs are a few days old. Unless the hay is of extra good quality it is recommended that a protein supplement such as cottonseed meal, soybean meal or peanut meal be added to the grain mixture.

As a rule it pays to creep feed the lambs. Partition off a bright corner of the barn or shed and leave a small opening or two that will admit the lambs yet exclude the ewes. In this creep keep a small raised feed trough supplied with feed. Corn should make up the majority of this ration and often it is the only grain feed. It should be ground until the lambs are six weeks old after which it may be fed shelled.

If the ewes are not giving much milk it may pay to feed a more complete ration to the lambs. Four parts corn, two parts oats, two parts bran by measure, and a small amount of soybean meal, peanut meal or cottonseed meal, makes an excellent lamb feed. In addition to grain keep a small rack full of the choicest hay inside the creep where the lambs can nibble it as they like.

Trim The Lambs

All lambs should be docked and all ram lambs intended for market should be castrated. These two operations are usually done at the same time. The best age for this work is when the lamb is from one to two weeks old. Do not neglect it for the packers always pay more for trimmed lambs than for ram lambs.

Marketing The Lambs

Plans are under way for grading and shipping lambs cooperatively at several points in Eastern North Carolina this spring. Each lamb will be graded and given a distinctive mark. Each shipper will be given a scale ticket for his individual lambs. The lambs will be sold by grade and the better the lambs, the better the price will be. To illustrate, a shipment made from Edgecombe County last year in May sold as follows: choice lambs $14.25 per cwt; good $13.75; medium $13.00 and common $8.50. Thus it may be seen that it pays to make them as good as possible.

These cooperative shipments will be made sometime in May but the exact time will be announced later.

Yours very truly,

L. I. Case
Specialist in Animal Husbandry.

Dear Sir:

I am sure that you will find some worth while suggestions in the accompanying letter. It will pay you to follow them. Let me know if I can help you with any of your sheep problems.

Many of the sheep men in this county want to try a ecoperative lamb shipment this spring. If you are interested please let me know about how many lambs you will have weighing 70 pounds or over by May 15th.

_____
County Agent.

COOPERATIVE EXTENSION WORK
IN
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NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
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EXTENSION SERVICE

State College Station
June 1, 1937

TO COUNTY AGENTS IN F. S. SLOAN'S DISTRICT:

Arrangements have been made with White Provision Company, Atlanta, Georgia, to buy lambs at a definite price for each grade F.O.B. shipping point. This company will handle truck loads or car loads of lambs. It will be desirable, however, if we can get at least a single deck together at one time as this will reduce transportation costs. If it seems advisable we will be able to get bids from other markets where we can concentrate single or double deck loads.

It occurs to me that if you agents can arrange lamb sales in your counties in some kind of consecutive order it will facilitate matters considerably and save time and expense on my part and the part of the representative of White Provision Company.

I will appreciate it if you will write or talk with Mr. F. S. Sloan in regard to this matter so that we can make some definite plans in regard to the same.

It will be desirable to sell lambs as soon as they reach a desirable weight and finish because prices on early lambs are always better than later in the season. The ideal market weight is 80 pounds on the farm. As a rule we like to have lambs weigh 70 pounds or more although we can sell them lighter if necessary.

Yours very truly,

L. I. Case,
Specialist in Animal Husbandry

Farmers Gather At Wenona; Learn About Livestock

Nationally Known Livestock Experts Give Lectures and Demonstrations On Thursday

A DAY'S WORK

Demonstrations Will Cover All Phases of Animal Husbandry; of Great Value To Farmers

Plymouth, April 7.—Of widespread interest to livestock farmers throughout the coastal plain of North Carolina and Virginia will be the livestock demonstration at the Black Land Experiment Station at Wenona tomorrow.

Several nationally known livestock experts will give lectures and practical demonstrations on animal husbandry.

W. Kerr Scott, North Carolina commissioner of agriculture, will be present. N. C. State College and its extension service, which boasts some of the outstanding livestock authorities in the United States, will have a covey of representatives at Wenona. Others famous in the animal husbandry line who will be there are L. I. Case and Johnny Foster, two of the country's foremost sheep and beef cattle experts; Professor Hostetler of State College, noted authority on horses and mules, as well as swine feeding and breeding; and two or three representatives from the U. S. Department of Agriculture at Washington, D. C.

The demonstration, which starts at 10 o'clock Thursday morning, will cover practically all phases of animal husbandry, including feeding and breeding of swine, sheep, poultry, horses and mules.

County Agent W. V. Hays said today that this demonstration should be of great benefit to anyone really interested in livestock. He pointed out however, that a real day's work would be done at Wenona tomorrow, and that anyone who goes over to Wenona looking for a holiday will be sadly disappointed.

The adaptability of coastal Carolina to horse and mule culture will be stressed at tomorrow's demonstration. The Black Land station farm owns two of the finest stallions in the Southeastern states, according to Mr. Hays.

STALKS SOLVING FEED PROBLEMS

Farmer Finds Use for Old Corn and Soybean Stalks—Excellent Winter Feed

College Station Raleigh, Dec. 10—Old corn and soybean stalks are helping Tom Temple and his son, Douglas, solve their winter feed problem.

These Halifax county farmers turn their beef cattle herd into corn and soybean fields for the winter, said L. I. Case, extension animal husbandman at State College.

With the feed the animals get from old stalks, and the grazing from cover crops such as rye and winter legumes, they are "making a living," Case stated.

The Temples are considered two of the best livestock farmers in North Carolina, he continued. They grow corn, soybeans, and cotton, but livestock is their main source of revenue.

A breeding herd of 50 cows is kept on the place, and they raise about 48 calves a year. The sheep flock is of good size, and the Temples usually top the market with early lambs. The hog herd is another good source of meat and cash income.

Thirty-nine head of two-year-old steers in the feed lot will be ready for marketing early in January, and Case said he expects the Temples to get better than customary prices for these animals.

Th abundance of produce by the livestock is put back on the land to maintain soil fertility. The cover crops and legumes grown in connection with livestock production also help conserve and build up the soil.

FINE STEERS ARE EXHIBITED HERE AT STOCK SHOW

(Continued From Page One)

livestock industry in Western North Carolina.

R. R. (Bob) Ramsey, veteran auctioneer of the Asheville Livestock yards, conducted the sale.

Cherokee, Buncombe and Transylvania counties made exceptionally fine showings in the judging ring. Their groups of five finished second, third and fourth behind Watauga in the group competition. Madison was fifth and Macon sixth. Haywood did not enter a group, but 4-H club members from Canton and Waynesville, took several individual awards. Henderson county also won several prizes.

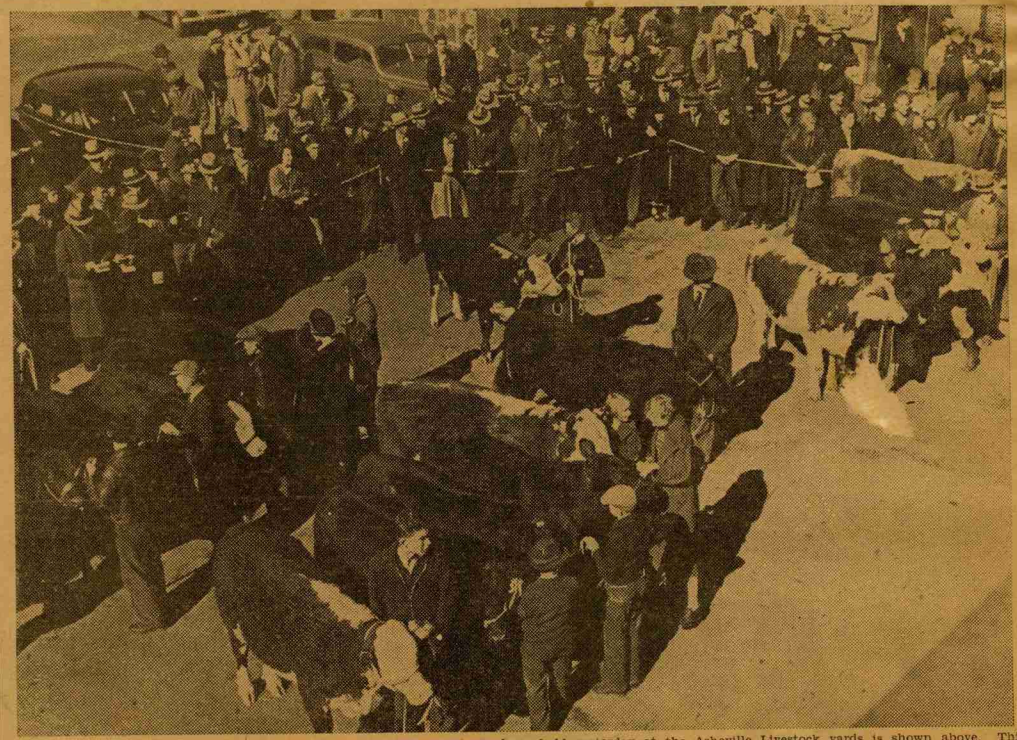
Other Winners

Other placings in the heavyweight class were: C. H. Townsen, of Murphy, third; John and Way Abel, of Canton, fourth; Daisy Wallen, of Marshall, fifth; Grace Brown, of Hendersonville, sixth; J. C. Townsen, Jr., of Murphy, seventh; J. D. Wallen, of Marshall, eighth; Robert Whitmire, of Brevard, ninth; Gloria Tweed, of Marshall, tenth; Mary Joe Burgin, of Arden, eleventh, and Garrett Hedden, of Murphy, twelfth.

After the entry of Miss Curto in the middleweight class came those of: Helen Whittimore, of Barnardsville, second; John Edmisten, of Sugar Grove, third; O. C. Rector, of Marshall, fourth; Earl Edmisten, of Valle Crucis, fifth; Furman Waldrop, of Franklin, sixth; Council Henson, of Vilas, seventh; Gay Snelson, of Asheville, eighth; O. C. Rector, of Marshall, ninth; Myra Slagle, of Franklin, tenth; Glenna Shipman, of Pisgah Forest, eleventh; Earl Martin, of Murphy, twelfth; M. H. Tweed, of Marshall, thirteenth, and H. L. Martin, of Murphy, fourteenth.

Placed behind Gene Reece's lightweight champion were those of: Tom Lawrence, of Vilas, second; Francis Boyd, of Waynesville, third; Glenn Shipman, of Pisgah [illegible] fourth;

Choice Steers Exhibited At Stock Show Here

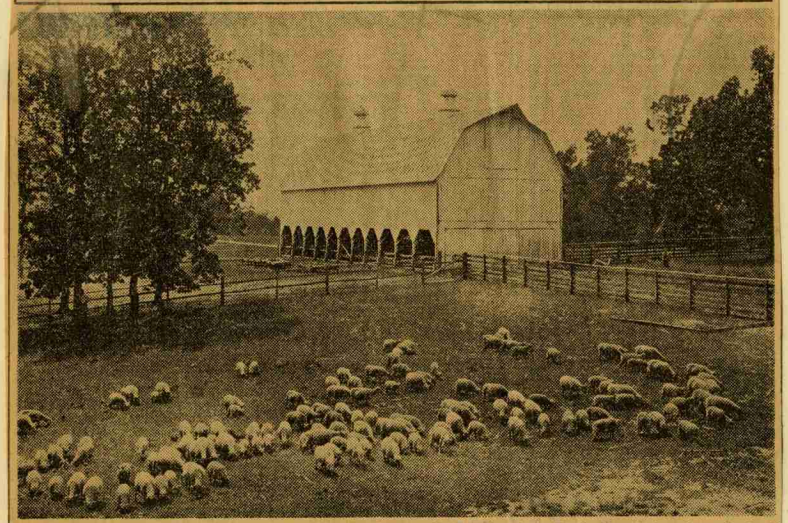


A general view of the judging ring at the third annual fat stock show held yesterday at the Asheville Livestock yards is shown above. This picture was made during the selection of the best heavyweight steer in the show. The best animals are grouped in the second row at the extreme left. A section of the large crowd which witnessed the events can be seen in the background.

Pure Bred Beef Cattle On Farms In W. N. C.

Some of the fine beef cattle raised in Western North Carolina and expected to be exhibited at the Fat Stock show here this week is pictured above. At the top on the left is Joe Brown, of Deep Gap, with his reserve grand champion of the State fair. At the top on the right are three Watauga county Hereford steers that will be shown and sold here. At the lower left is Alice Brown, of Henderson county, with her 4-H club calf which is a cross between a purebred Shorthorn and a purebred Hereford. At the lower right is pictured the first prize winning group of beef cattle in the 4-H club division at the State fair, shown by Buncombe county boys and girls. A. W. Nesbitt, Buncombe county agent, is shown on the right.

SHEEP ARE PROFITABLE ON LYBROOK FARM



One of the profitable crops on the livestock farm of D. J. Lybrook in Davie County is a farm flock of grade sheep from which Mr. Lybrook secures a double income of lambs and wool each year. In the above flock are 68 ewes and 98 lambs. Mr. Lybrook said that more than one-half the ewes dropped twin lambs this past season. Livestock extension specialists at State College say there is a place for more sheep in North Carolina and with this in view, the specialists are cooperating with county agents and individual farmers in attempting to build small flocks on adapted farms. The college workers also are encouraging the grading of lambs and cooperative selling through the organization of pools where the animals are gathered at a central point from the various farms of a county.

North Carolina Has Good Future in Raising Cattle

By ROBERT L. KLUTTZ

North Carolina has a great future as a beef cattle and livestock producing state, in the opinion of L. I. Case, State College extension specialist in animal husbandry.

The climate is almost ideal, much land is suitable for pastures and growing other feed crops, and the state is comparatively near to the big Eastern market, Case stated.

Moreover, he said, many North Carolina farms are better suited to the production of beef cattle or other livestock than they are to tobacco, cotton, or other such cash crops. Practically all the farms need more livestock to balance their individual farming programs.

The livestock industry, however, still has a long way to go before it attains the full possibilities that are open to it in this state, Case declared.

Beef cattle production is handicapped by an inadequate supply of good breeding animals, he pointed out, good pasturage is scarce, few farmers produce at home enough of the right kind of feed, and on many farms the cattle are not given the best management.

In describing the extension program to improve and expand the beef cattle industry, Case said that a great deal of attention is now being given to better breeding.

With the help of county farm agents and other interested persons, the extension service is helping farmers secure better bulls and cows for breeding purposes.

Farmers who are unable to own a good bull at present are urged to breed their cows to a neighbor s bull, if possible. In some cases, several farmers form a pool to buy and keep up a good bull.

Public meetings, the distribution of helpful information, cattle judging contests, exhibits at fairs, grading demonstrations, and visits to individual farmers are other means of arousing greater interest in herd improvement, Case pointed out.

During the past year, he said, farmers were aided in the purchasing of 160 high grade bulls. Seven of these were outstanding individuals placed at the head of purebred herds.

Seven breeding herds composed of purebred animals were established in Jackson, Macon, Yancey, Anson, Johnston and Haywood counties.

In feed production, special emphasis was laid on cover crops for winter grazing, velvet beans grown with corn, and the production of more silage.

Silos, particularly the trench silos, are becoming more popular in this state as a means of preserving feed for winter consumption. Last year 275 new silos were built in 59 counties. Some were built for dairy herds, others for beef cattle or sheep.

On light, sandy soils, it has been found that velvet beans grown with corn make a goodly quantity of feed for wintering beef cattle, with a liberal amount of material left for turning under, Case pointed out.

When part or all of the corn is left in the field with the beans, the two crops make a well balanced combination for fattening cattle, he added.

A good cover crop will save a grower a great deal in the cost of wintering animals, he said. Many a flock of sheep gets its entire living through the winter from fields of Abruzzi rye or other small grain.

Higher market prices and a growing interest in beef cattle production led to an increase from 1,100 head of steers put in feed lots for fattening in the fall of 1935 to 1,600 head placed in feed lots last fall.

The production of beef is not the only consideration in beef cattle raising, Case continued. Many farmers find the manure is worth a great deal in building up their soils.

For example, a farmer near Lawndale who conducted a feeding demonstration with 13 animals said the 70 tons of manure the stock produced during the year were worth $140.

The animals gained a total of 2,795 pounds in weight. At 10 cents a pound, the increase was worth $279.50, making a total income of 419.50 from the 13 animals.

The animals ate 12,900 pounds of cottonseed meal, eight tons of stover, five tons of straw, 20 bushels of corn, and two tons of soybean hay, all valued at $288. The net profit above feed costs was $130.

Lack of good management is holding back many North Carolina beef cattle herds, Case went on.

Too often the bull is allowed to run with the herd all the time, with the results that calves are dropped at all times of the year. Heifers are frequently allowed to breed too young, and their growth is stunted.

Inadequate feed lots and shelters are also a cause of feed waste, loss of manure, and failure of the animals to attain their heaviest growth, Case said.

To help correct these undesirable conditions, herd management demonstrations were carried out in 44 counties of the state last year.

Beef calf projects for 4-H club members were giving a healthy impetus to the beef cattle industry, Case continued, and some of the members are raising animals that compare well with the project of leading adult breeders.

In 21 counties last year, 102 boys and girls completed beef projects. Four-H beef exhibits at the State Fair and the Asheville fat stock show last fall were outstanding attractions.

The co-operative grading and shipping of lambs in the western part of the state is getting off to a good start, he added.

This enterprise was begun in 1934, when 800 lambs were shipped from Alleghany county. Last year 2,506 lambs were shipped from three counties. Most of them went from Alleghany and Watauga counties, but a few were also shipped from Edgecombe county.

Prepare Feed Supply Now for Winter; See 'Grass Growing Rank'

For a Grand Feeling; There's Beauty in It

SATISFACTION IN IT, TOO, SAYS CASE

By L. I. CASE
(Livestock Specialist, North Carolina State College)

It's a grand feeling when one sees the grass growing rank in the meadows and pastures at this time of the year. The aesthetic soul sees the beauty of it. The city person thinks of a vacation in the country. The small boy thinks of it as a good place to play. The golfer thinks of better fairways. But the livestock man thinks of feed for his cattle or his sheep or his work stock.

Grass is especially welcome if winter supplies of feed have been short and the cattle have been lowing for more feed than the farmer had in storage with no money to buy more. But you say why bring that up? The cattle are out on grass and there's nothing more to worry about. That is the way some folks do things, but the good stockman is so constituted that he remembers there have been summer droughts when pasture became short and the cattle got thin. He also remembers that the grazing season, at best, lasts only so long, and then there's another winter—perhaps a winter of short rations and with cattle bawling for feed that is not on the farm.

Summer Drought.

First, about that possible summer drought. Annual pastures are excellent insurance against a dry period which nearly always comes some times during the grazing season. Crops suitable for filling in the gaps of short permanent pastures are Sudan grass, millet, soybeans, and lespedeza. Sudan grass and soybeans have given excellent results for emergency grazing. They may be grown separately or together. The Biloxo soybean is best suited for grazing purposes. Where soybeans and Sudan grass are to be grown together, it is best to plant the soybeans first and give them one cultivation before the Sudan grass is sown between the rows. This gives the soybeans more of an equal opportunity against the faster growing grass crop. Some given area in a silage corn than by any other means. The old excuse about the initial cost of building a silo no longer holds, for we are finding that silage crops can be preserved just as well or perhaps better in a trench silo than in the more expensive upright silo.

Three men, a team of horses and a slip scraper built a 32 ton trench silo in 15 hours' working time near Raleigh. There are hundreds of silos of this type in use in North Carolina and men who are feeding silage to cattle and sheep say they don't see how they ever got along without it. The two main requisites for a trench silo is a stiff soil and a water table below the bottom of the silo.

Corn is the main silage crop for North Carolina although various varieties of the sorghums also are used in some sections. Sorghums will grow on poorer soils than corn and they will also stand drought conditions better. The sorghums usually make a considerably greater tonnage but not as nutritious a feed as corn silage. As a rule 80 pounds of corn silage is equal to 100 pounds of sorghum in feeding value. Of course one doesn't have to build the silo until fall but it is about time now to plant the crop to put in it.

Control Breeding.

Here's another hint that will put more money into the cattleman's pocket and make his wintering problems easier. Control the calf crop and the lamb crop. There is a best time of the year for calves and lambs to arrive. This time can be controlled with a little trouble. Some of the best cattlemen in Eastern North Carolina allow the herd sire to run with the cow herd in May, June and July and keep him in a strongly fenced lot or pasture the rest of the year. This brings the calves in February and March. They are then ready for weaning about November 1. This means better calves and more easily wintered cows.

Lambs in Eastern North Carolina should come early in December and January and be ready for market in May or early June when the price is always good. This means the ram should be placed with the flock in July and August.

Treating the ewes and lambs for internal parasites should start June 1 and be repeated the first of each month through the summer and early fall.

Cooperative shipments of graded

BANK SUPPLIES BULLS FOR CATTLE-BREEDING

Five purebred bulls have been purchased by the Citizens Bank and Trust company, of Andrews, to further the production of high grade beef cattle in Cherokee, Clay, and Graham counties.

The bank also plans to purchase two more bulls in the near future, said L. I. Case, beef cattle specialist of the State college extension service.

The two Aberdeen Angus bulls have been placed with farmers in Graham county and the three Hereford bulls have been placed with Cherokee county farmers.

The other two animals to be purchased will probably be placed in Clay county, Case pointed out.

The farmers with whom the animals have been placed are regarded as leaders in their communities. Each has signed a contract to care for the animal in his charge according to methods recommended by the extension service.

The bulls will be available for service on the farms where they are kept, and other farmers will have the privilege of using the bulls upon payment of a small fee which will help defray the expenses of maintaining the sires.

The contract specifies that the farmer must keep the animal in good condition, feed it adequately, and endeavor to protect it from infection with contagious diseases.

Each farmer has the right to purchase the animal in his charge if and when he may desire, Case added.

The bulls were selected by Case in cooperation with A. Q. Ketner, Cherokee county farm demonstration agent.

Sheep Growing Boosted By High Prices

Special to News-Argus

College Station, Raleigh, May 26.—Highest prices in recent years are pumping new interest in the sheep-growing industry in North Carolina, according to L. I. Case, extension beef cattle and sheep specialist at State College.

Good and choice lambs are selling for $14 and $15 per hundredweight on the Jersey City market, while wool prices are about six cents a pound higher than they were a year ago.

Prices started strengthening last October and climbed steadily upward until about the middle of January. From that time until the middle of March the prices dropped slightly, then became steady for about two months before falling off slightly again.

The first cooperative shipment of lambs was made from Tarboro last week, with prices a dollar or two higher than they were a year ago. The next cooperative shipment will be made from Plymouth June 1 when growers from Hyde, Tyrrell, and Washington counties will pool their lambs for shipment to Northern markets.

Shipments of mountain lambs will begin about June 15 and will reach the highest point about July 1, Case declared. The mountain counties raise most of North Carolina's sheep.

Careful shearing and handling of wool will bring better prices, Case pointed out. Growers who are careless in their methods of shearing and handling are forced to pay a penalty through the decreased prices which they receive.

Not only is this point important, Case declared, but growers should also get full value for their wool. Last year farmers who sold their wool cooperatively in pools with their neighbors received more money than did those who sold individually.