

## AGRICULTURAL INSTRUCTOR GIVES RESULTS OF CAREFUL STUDY OF VALUE OF GOATS

By CECIL P. MOFFITT.

Several people have been inquiring of the Agricultural Department at the Union High School concerning the amount of butter-fat contained in goat's milk, and the value of goat's milk as a food, compared with cow's milk.

The best way to answer the question is to make a study of milk and when we begin to study milk we find the quality varying. The factors that affect the composition of milk are: breeds, differences of individuals in each breed, the care and feed that is given the individuals, and, as to the time in the period of lactation the analysis is made. Outside of the influence of different breeds as affecting the quality of milk it is hard to say just which factor comes next.

One may choose an individual with a high test or a high per cent of fat and yet a sister to the same cow might test even 2% lower as was a case with which the writer is familiar. The lower testing individual might produce a more valuable milk than the higher testing cow. That is to say, one might increase the per cent of fat in the milk at the expense of the other elements of food that are contained in milk. Milk contains water, protein, sugar and fat. The last three contain the food elements found in milk and classed as total solids. Since the total protein does not vary so much as the fat and sugar contents in milk, we will study milk by comparing the water, total solids, fat, and sugar content.

It is found that a thin cow will produce a milk lower in fat than when the same individual is fat. Henry, in his Feeds and Feedings, says, "Feed does not directly affect the test of milk materially." This qualifies the statement. The conditions of a cow affects the amount of product as well as the quality of the product, and so far as we are concerned in this study, it does not matter whether the cow puts the fat on her body before she puts it into the pail, or whether she ships it directly to the pail.

The time of the test in the period of lactation shows a difference in both the per cent of protein and fat. It is generally believed that the further along the cow is in the period of lactation the higher the per cent of fat, but that depends upon the time the test begins. The milk given by a cow when first fresh is very high in protein and shows an increase in per cent of fat. This milk is called Colostrum. Normal milk is the milk that is given after the fifth day after the cow freshens. The following is the analysis:

Kind of milk	Water	Solids	Protein	Fat	Sugar
Colostrum	75.1	24.9	17.2	4.	2.3
Normal cows milk	87.3	12.7	3.4	3.7	4.9

In determining the above, several hundred samples were taken to obtain the recorded results. As the cow progresses, if the feed and care are constant, the test will gradually increase, as she begins to reduce the amount of milk flow.

You may study each of the above facts but you will find the first factor that affects the amount of butter-fat in cow's milk is the breed, and according to standard authority the following show the average test of the milk of cows according to the different breeds. The test however does not say anything about the quantity produced by the individuals or the cost of production by the different breeds.

Breed	Water	Solids	Fat
Jersey	85.30	14.70	5.35
Guernsey	85.29	14.71	5.16
Devon	85.50	14.50	4.69
Shorthorn	86.62	13.38	4.05
Brown Swiss	86.73	13.27	4.24
Ayrshire	87.39	12.61	3.66
Holstein	88.14	11.86	3.42
Standard	88.00	12.00	3.25

Konig, a well known chemist, in an attempt to find out just what per cent of the milk was fat, made 800 tests of cow's milk. For this he took his samples regardless of breeds, individual care of feeding, and he found that no set test could be placed on cow's milk. He kept no record except the sample of milk and the test. If we knew the breeds, the individuals, the care and feeding, along with the time in the period of lactation, it would be interesting. The following shows the result of his analysis:

Sample	Water	Solids	Fat	Sugar
Minimum test of cow's milk	39.32	10.68	1.64	2.11
Maximum test of cow's milk	90.69	9.31	6.47	6.12
Mean (average) of milk	87.17	12.83	3.64	4.88
Human test milk	87.41	12.59	3.78	6.21
Goat test milk	85.71	14.29	4.78	4.66

The above table will be of value to mothers who have child-feeding problems to meet. If the mean or average cow's milk could be obtained with the addition of pure milk sugar and lime as a cautious addition to prevent digestive troubles, your problems would be solved. The only way therefore to be sure to obtain that mean or average milk is to have the milk tested not only for fat but for other elements.

Now to compare the milk from different breeds of milk goats, and if the goats are not of a standard breed, then the milk of individuals. The following are tests made under the U. S. Department of Agriculture by the Animal Husbandry Division.

	Water	Solids	Fat	Sugar
Maximum goat milk	88.1	11.9	4.4	
Minimum goat milk	88.5	11.4	3.2	
Common American goat milk	83.04	16.96	5.99	4.92
Cow's milk	87.1	12.9	3.9	5.1

The herd of Common American goats belongs to the Bureau of Animal Industry and, as can be seen above, the milk contains much more food than the other tests made by the department. Milk samples from 5,000 cows' milk were taken to establish the above analysis of cow's milk for the comparison with goat's milk.

Goat's milk is nearly pure white in color. The fat globules are small in size and, of course, the cream rises very slowly. The goat's milk that tested 4.4 per cent fat was run through a separator and the skim milk showed only .03 per cent fat. If goat's milk is produced properly and cared for in the right way there should not be any goat odor. If milk is clean and kept free from hair and dirt and not allowed to set in stables where the bucks are kept, the flavor will be good.

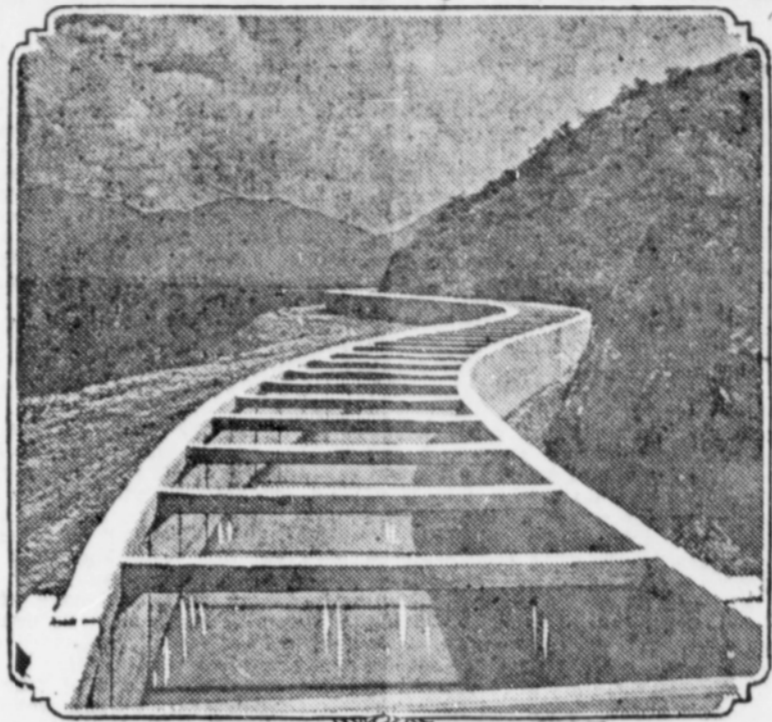
A goat that will produce three pints per day is only an ordinary goat. Many have produced two quarts per day while a production of three quarts is excellent. A goat should produce from 8 to 15 times its own weight in milk in a single lactation period. A half-blood Toggenburg doe produced 1,429.3 pounds of milk, testing 5.5 per cent fat, in 355 days, while her mother, a common American doe, produced 367 pounds of milk testing 7.6 per cent fat in a lactation period of 275 days.

Ray Palmquist arrived in Portland Friday night with the casuals and spent Saturday and part of Sunday with his parents, Mr. and Mrs. J. A. Palmquist near Gresham. He is a member of Battery C, 148 Field Artillery. He suffered a severe injury to one of his hands by an accident on November 11 and may remain at the base hospital for continued treatment.

Of interest in dozens of homes in eastern Multnomah county is the arrangement of the sailing date, March 1st, of the return voyage of the 91st or Wild West division. Most of the boys who were drafted from this vicinity are in the 91st.

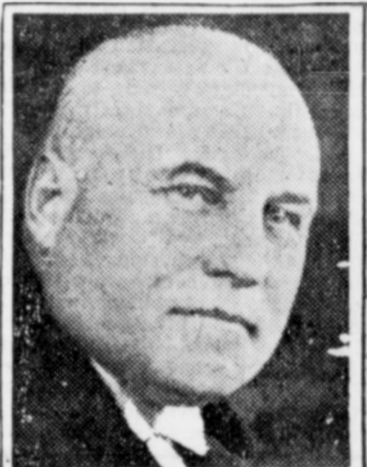
Lieutenant Leland Moore, who has been enjoying a furlough, visiting with his parents, Mr. and Mrs. W. U. Moore of Pleasant Valley, has received a telegram summoning him back to Camp Lewis at once. He will report in San Francisco on Saturday for service in Siberia, having been called in response to his volunteering for overseas service recently. Upon receipt of the news, word was dispatched to his sister Miss Laura Moore, at Oregon Agricultural college. She hurried home for a short visit, and on Sunday Mr. and Mrs. W. R. Burke took Lieutenant and Miss Moore to their respective trains in Portland.

## RIVERS IN CONCRETE BEDS QUENCH ARID WASTES



The acme of canal construction in irrigation projects seems to have been reached in Strawberry Valley, Utah, where this white concrete river flows down from its mountain lake to water the desert waste. Agriculture on a farm fed by one of these modern streams opens up new possibilities in crop productions of all kind. It is all included as but a part of the plan advocated by Secretary of Interior Lang in his reclamation service for returned soldiers.

## MODEL FARM TO YANK SOLDIER IS LANE'S PLAN



FRANKLIN K. LANE

[Secretary of Interior Lane has asked Congress to appropriate \$100,000,000 with which the U. S. Reclamation Service will make new farms for returned soldiers. It is proposed to irrigate deserts, drain swamps and clear cut-over timber lands. The entire program is explained by Secretary Lane himself in the following article:]

(Special to the Outlook)  
All over these United States there are vast areas of land that are capable of producing cotton, corn, wheat and fruit, which are out of use. Altogether there are perhaps 250,000,000 acres of such lands that in two or three years by scientific drainage or irrigation or by stumping could be converted into first class farms.

In the far west, in the arid country along the Colorado River in Arizona, along the Snake in Idaho, the North Platte in Wyoming and Colorado, and near the great rivers of the west, there are millions of acres of lands that can be irrigated; while in the south and in the northwest there are more than 100,000,000 acres of land that have been logged off but which are lying idle today.

### Put Land to Use.

The plan which I have presented to Congress means that we shall put this land to use. That is where the country gains. It means that it shall be put into condition by the soldiers after they have been mustered out. That is where the soldier gains. Every man who has been in the ranks of the army or navy shall have an opportunity to go on to one of these projects and have a job at the current rate of wages in building a dam or a ditch or leveling land or pulling up stumps, building dikes, clearing land, build-

Recent guests at the R. R. Carlson home were two cousins of Mr. Carlson, Mrs. Clara Pepper of Bridgefield, Washington and Mrs. Lois Maechtle, of Cedarburg, Wisconsin, and Jacob Maechtle. They spent three days with the Carlsons last week, and during their stay here were taken to Oregon City, St. Helens, and out over the Columbia highway.

Corporal Glenwood Miller returned unannounced to the home of his parents, Mr. and Mrs. H. M. Miller, near Gresham, on Saturday morning. He was for several months in the quartermaster's department, aviation corps, in an aviation mechanics' school at St. Paul, Minnesota, and has just received his discharge from Camp Lewis.

W. H. Watson, of Rockwood, was in Gresham today.

ing houses or roads or fences.

### Can Select Complete Farm.

This means that when the boy reaches New York he goes back home for a time, meets his people, and then is given a chance to take a place in one of the great camps that will be formed for the reclamation of some of this unused land.

He gets his wages there. Out of these he will pay a certain amount for his board, save enough in a year and a half or two years while he is working to pay a first installment on a farm anywhere—north, south, or west, and have that for his own. It will be a farm that will be prepared—not a piece of wild land, but a farm in a settlement which has its roads already built.

It will be a farm already surveyed, fenced, a house and a barn built, the land cleared, so that a man can move in his furniture and begin life at once.

They will be connected with railroads, if they are not immediately on it, by good roads. They will be chosen with reference to the marketing of the produce that can be produced upon them.

In short, each man can have a job, the government advancing the capital, and out of the combination of his own labor and the government's capital he can be given an independent living.

### Not Charity But Partnership.

But this is not to be done in the slightest bit as a matter of charity, nor is any man to be coerced into taking up the work. It is an opportunity which the government out of appreciation for the fine service rendered by its boys gives to them. They will pay back the money with interest, but they can pay it back over a period of 40 years. The man who drains a great area in South Carolina may choose a farm in Arizona or in Idaho.

We have spent \$50,000,000 a day in fighting the boche, and surely we can afford to spend what was a few days' war outgo in setting up for life the men who whipped the Hun.

It will be a profitable arrangement all around. The money will be advanced by the people. It will be returned by those who take the farms.

I expect hundreds of thousands of city-bred fellows will have this desire for an independent out-of-door life. Then there are a million men in our army who come off of farms, many of whom will never have a chance to own a farm unless there is some such plan as this.

Some kitchen cabinet in Ed. Metzger's window. It is really a kitchenette and breakfast room in itself. There is a shiny tinned copper table that can be pulled out for an emergency meal in the kitchen—drawers and cupboards for flat ware, linen bread and cakes, cooking utensils—everything. A built-in flour container with sifter attached, even a table of weights and measures. Its builder thought of everything.

Word has been received of the death of Andrew Gullikson at Platteville, Wisconsin, by his sisters and brother, Mrs. Christine Humason, Mrs. L. Needham and Alex Gullikson. He suffered a shock from over-exertion after an explosion of a large building there, the illness resulting fatally.

Miss Van Dusen, of Astoria, is a guest at the John Cannon home here.

## "DOC" ROGERS LETS 'EM KNOW HE ISN'T AFRAID

From the War Department the following has been announced: Cited for distinguished service.

Pharmacist's Mate (second class) Benjamin F. Rogers, United States Navy, attached to 5th regiment, United States marine corps. For extraordinary heroism in action near St. Etienne, France, October 4, 1918. Pharmacist Mate Rogers left his shelter and went beyond our most advanced positions, giving first aid to the wounded under machine-gun and shell fire until all had been cared for and evacuated. Home address, Mrs. Dan Murphy, mother, Gresham, Oregon.

Let's see—Benjamin F? Would that be Benjamin Franklin—Benjamin Franklin Rogers?

Zowie—that's "Doc" Rogers. Good old "Doc"; he always was a go-getter. Pharmacist's mate is right. Remember how he worked in the Gresham drug store here for two years, while he went to Gresham high? A mate to every boy in school, too; quite some scout. And now he has been scouting right out under heavy fire and hurrying back with our wounded doughboys. Just read the particulars of that citation again. Isn't he a broth of a boy?

Frank or "Doc", as he was called by his schoolmates, graduated from the Union high school here in 1915, later finishing his course in the North Pacific Pharmacy college, when he received his sheepskin. His mother, Mrs. Dan Murphy, as well as his step-father and his infant brother live here. He is in Hospital Unit, Medical Detachment, 5th Regiment, 2d Division, 1st Battalion. He won his distinguished service cross in the battle of Masgif Mt. Blanc, White Mountain ridge on October 4, 1918.

And his mother has known for some time of his citation, but has just been quietly taking pride in her splendid son's achievement. Quite reluctantly she confirms the good news, adding that Frank would not want any fuss and feathers. Indeed, he has written her, dismissing his honor in a sentence; and dwelling at length on the pleasure he anticipates in making the acquaintance of the baby brother he has never seen. He is looking forward to returning to his mother's home in Gresham, but does not expect to be released from service soon. It is hoped he will return in fine form, as his Gresham friends will just about wring his arm off in felicitation.

## WELCOME ACCORDED RETURNING SOLDIERS

A score of Gresham families motored to Portland yesterday to welcome home the boys of the 65th. Our returning soldiers were Leslie St. Clair, Caryl Heslin and Raymond Dunbar of Gresham and Fairview. Many had other relatives among the returning heroes. They looked good to us—hard as nails, with well-weathered complexions. Most of them have taken on weight and fitness.

Among those who assisted in the hilarious welcome were the H. L. St. Clairs, R. R. Carlsons, J. T. Stillions, H. J. Stockers, H. H. Elings, J. T. Skirvins, J. Cannons, C. H. Stockton and many more.

Mrs. George Lusted has returned from a week-end visit in Portland.

C. M. Zimmerman expects to receive a Moline tractor for demonstration purposes in the near future. He is local agent for the machine.

O. E. Millison started work Monday at the Willard battery depot in Portland. He has recently received his discharge from the army.

Tried to buy one of the wonderful valentine cakes that decorated the window of the Gresham Bakery on Friday. All three of those delectable confections had been ordered by some Portlander, worse luck.

Mr. and Mrs. O. A. Eastman have received another letter from their son Wilson. He has enjoyed a recent furlough; and spent part of it in visiting the ex-Kaiser's palace at Coblenz. An imposing structure, says Wilson.

Mrs. Josephine Knighton spent Sunday with her parents, Mr. and Mrs. B. J. Smith, in Portland.

E. Dewey, father of Mrs. M. Ryan, who has been confined to his bed for two months as the result of a fall, is reported to be slightly improved in health. Mr. Dewey is eighty-nine years old.

Auto accessories for all cars. C. E. Osburn & Co.

## MERCHANT OF GRESHAM GLAD TO GET HOME

By MARION DUDLEY ELING.

Had you noticed the generally jubilant air of down town Gresham yesterday morning? I had, as I started up Main street in search of a local or two. The first store I entered for news, the proprietor met me with a cheery smile, and volunteered the information that Bert Metzger was back. Next shopkeeper came forward with a pleased smile, asserting the while that Bert Metzger was home. Along came a grinning school boy with the same glad news. Everywhere were smiles—happy, gratified, elated, joyous ones. There was something positively exhilarating about them.

And to me had been assigned the task of extracting an interview from this returned soldier friend of all Gresham. It should be a pleasant assignment. So I hid me up to his own store, to approach him on the subject of his experiences as a doughboy. He was not there, but had been there earlier, in an apron, behind his own counter. The sight had been almost too much for his working force there; in fact, at sight of him, one lady had whisked her apron up over her face and dashed out back for the comfort of a few happy tears.

Upon learning that my grocer was in the dentist's chair in Dr. Harry Ott's office, I hastened thither, determined to make his acquaintance while he was gagged and helpless. I was again too late, but upon descending the stairway, a presentment lead me into Aylsworth's store, and there, barricaded behind a pile of mackinaws, passing the time of day with Mr. Aylsworth, I found Bert Metzger, in a comfortable blue serge suit and soft hat. He seemed, somehow, to belong.

Getting his range, I opened with a barrage of questions that just compelled a counter attack. And his first words were: "Yes, I'm home for good." Receiving his discharge from the hospital at Camp Lewis, where he has been recuperating from the effects of a German gas attack, he returned to Gresham Saturday night.

Things moved along speedily for Mr. Metzger following his call to the colors. In three months from the time of his enlistment he was in the trenches in France. Upon leaving Camp Lewis with the old 40th Division, he went to Camp Kearney, then to Camp Mills; from there he sailed to Liverpool; to Southampton, and from there to LeHavre. Upon landing in France the boys of the old 40th were box-carred to a rest camp at Juissy. Along came the 28th Division "pretty well shot" from the Chateau Thierry drive, and absorbed the 40th Division.

After two week's rest and a hasty reorganization, the 28th set out on September 26th for the Argonne Forest. That is to say: a forest as a Frenchman, but not an Oregonian, understands the term. The Argonne "brush" would be sufficient, opines Mr. Metzger. The boys were billeted in a small village near Nancy in this hilly, brushy country. Here they stayed for a week, with something doing every minute. They lost heavily and upon receiving more replacements were transferred to the vicinity of Metz in the Toul sector. Here they were for a time held in reserve; later moving up to hold the front lines about Metz. Things were at first quiet; then they made several raids, the Germans finally opening up with a heavy barrage. This should logically have been followed by a counter attack from the Boches; and there in the front trenches waited the reception committee all ready for them, with their gas masks over their noses, but pulled down from their eyes, that they might overlook no bots.

Along came mustard gas instead of the expected counter attack; but these troops had had no previous gas experience, so mistook the gas for the effects of the high explosive shells of the German barrages. They held the line for twenty-four hours; and upon being relieved, they dropped off to sleep, three in a dug-out, completely exhausted. However, they were soon hauled out, pretty sick boys by this time, rushed back half a mile to the first aid stations; tagged, and started back in a comfortable hospital train—no box cars this time—to a succession of field hospitals, arriving first at B. H.

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