

COPY 1

kansas **AG**ricultural **STUDENT**

OCTOBER 1955

v. 32:1



Will Irrigation Pay? page 10



Keeping the Soil Alive

PRODUCTIVE SOIL teams with a multitude of living things: bacteria, fungi, actinomycetes, algae, protozoa, insects, earthworms, nematodes, spiders, mites, and spring-tails. In one way or another, organic matter keeps all these animals and microscopic plants alive—and, thus, organic matter is the very life, the heart, of the soil.

Small amounts of organic matter exert a profound influence on the soil. Essential factors in crop production, such as water penetration, moisture retention, soil structure, plant nutrient supply, and plant decomposition, are directly affected by organic matter. A soil becomes less productive when its organic matter is reduced.

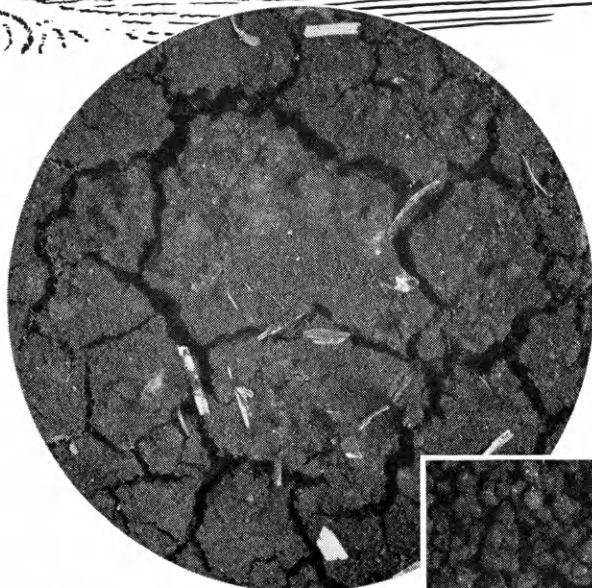
Along with water, timber, and minerals, organic matter is a natural resource that has been exploited and dissipated by careless farming practices. With each cultivation, the soil "dies" a little, unless the organic matter used is replenished.

For proof that organic matter makes a big difference in soil structure, compare the two soil samples pictured on the right.

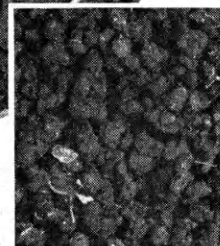
Putting organic matter in the soil is like putting money in the bank: Its value builds up with interest and it can be used as needed.



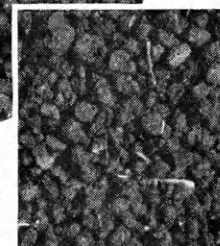
Making a Deposit in the Soil Bank



When this soil sample (square) was taken from the Blackland area of Texas, it was dry and crumbly, appearing to have a good granular structure. After soaking and drying (circle), it became badly caked and cracked—75 years of continuous cropping had lowered its organic matter content to 2.8 per cent.



The soil sample shown here came from virgin soil in an adjoining field in the same Blackland area of Texas; however, its organic matter content was 5.2 per cent. After soaking and drying, it retained its original granular condition, showing that good soil structure results when organic matter is not depleted from the soil.



NOV 10 1955
MANHATTAN
KANSAS



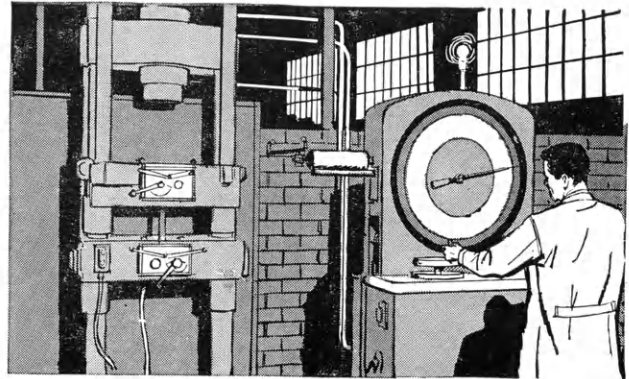
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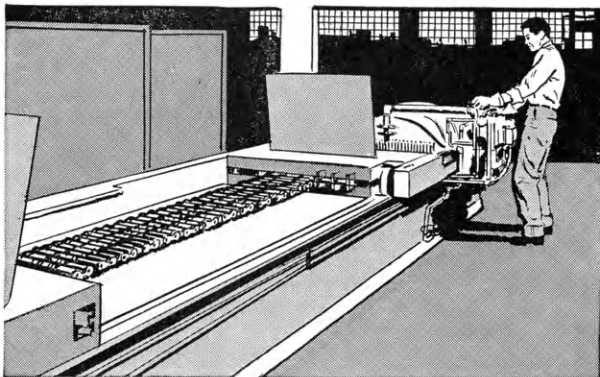
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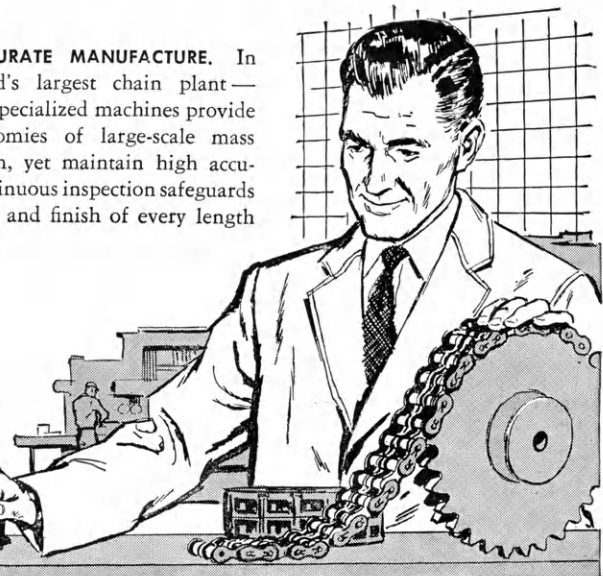
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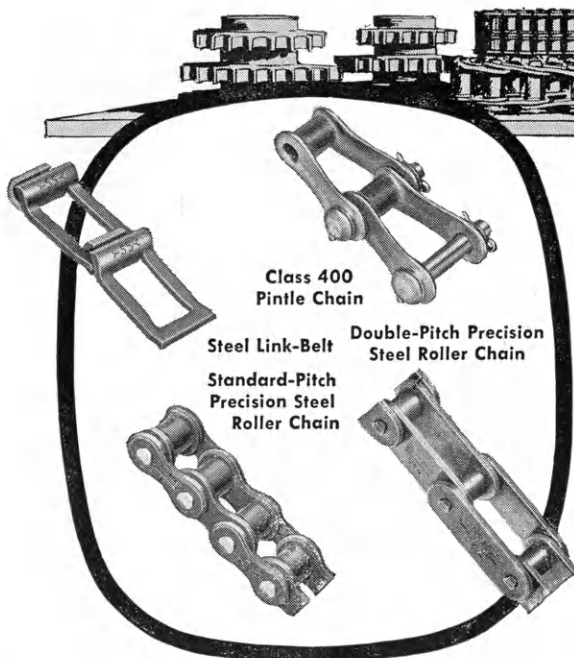
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Kansas State College AG STUDENT

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In This Issue

Chit Chat	Dean C. W. Mullen	6
Feed Tech Building	Clayton Herman	8
Does Irrigation Pay	John Saylor	10
Aggie vs. Non-Aggie	Arnold Appleby	12
The Flint Hills	Carl Leinweber	14
Home Management	Doris Wierenga	18

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ON THE COVER

Drouth is drouth, whether it be in Eastern Kansas or in Western Kansas, and one sure way to beat this situation is by irrigation. The various sprinkler type systems, such as the one pictured on the cover, seem to be the most popular in the Eastern part of Kansas.

But whatever the system used, the main idea is to get the water to the crop, and this field of alfalfa on the 'Juniata' Farms, north of Manhattan, is getting the full treatment.

PHOTO CREDITS: Bob Ecklund, cover, pages 13, 14, 15, 17; Hanna, pages 8, 9, 12; Ag. Exp. Sta., pages 10, 11; Hayes Walker III, pages 11, 13.

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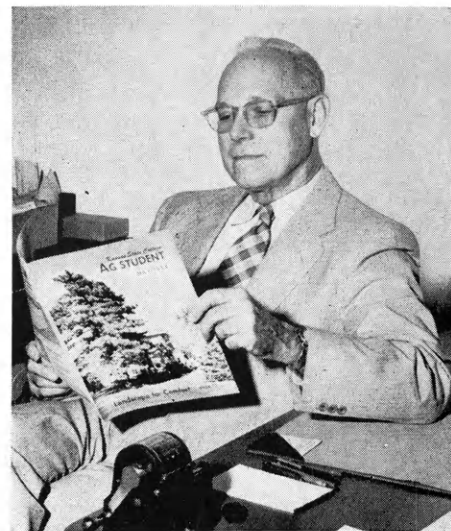
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NOV 10 1955

Chit Chat

By Clyde W. Mullen, Assistant Dean



Dean Mullen

MOST OF our students have seen the recent agricultural brochure titled, "Careers Ahead." It carries a marvelous display of illustration. The authors made their selections from among more than two thousand photographs that were submitted by Land-Grant Colleges across the nation.

Two hundred and fifty thousand copies were distributed to 51 land-grant colleges. Our school ordered ten thousand copies. During the spring and summer, more than half of our supply was distributed to high schools, county agents, teachers of vocational agriculture, and to many other offices and agencies in Kansas.

Result: An increase of only forty students in the School of Agriculture as compared with a year ago.

The number of freshmen is down thirty from last fall.

An increase in the number of sophomores compensated almost exactly for the decrease in the number of freshmen.

It was hoped that the total number of students would be increased by at least one hundred.

The number of freshmen should have been up to the normal three hundred plus a small increase.

Fluctuations in numbers of students are difficult to explain. It is not too good an opening when the number of freshmen is down. It may be our prospective freshmen are attending junior colleges and will show up next year as sophomores or in 1957 as juniors.

All of us, students and staff, will keep plugging at the job of keeping

up the enrollment in the School of Agriculture. Give us the address of a lad back home who should receive a copy of "Careers Ahead."

Optional Attendance

The new rule on optional attendance for juniors is a bit surprising. A junior need only to have made an average grade of B or better in his last preceding semester to be eligible for the privilege of optional attendance. A straight B average in all preceding semesters, ending with a bit of bad luck in his fourth semester, washes out the fine record of three semesters and puts the student on the line for regular attendance at classes as a junior. A number of juniors with an over-all point average of less than 1.5, but who made a B average last spring, are on the optional attendance list this fall. Nice going.

Pre-enrollment

Pre-enrollment of freshmen during June and July went smoothly. We assigned 128 new students during the two months. Assignments were completed and cards pulled.

At the last, classes were beginning to close, just as they do at regular enrollments. If all freshmen in the School of Agriculture had pre-enrolled, many of the last ones would have been put to the necessity of trotting from office to office attempting to pick up cards in certain courses to fit their schedules. For a freshman, new to the campus, that would have been an ordeal much worse than enrollment

in Nichols Gymnasium where the trips are from adjuster to adjuster.

Pre-enrollment is a wonderful experience for students of all classifications, so long as all classes are open. When we come to the pre-enrollment of six thousand students over a period of three or four weeks, several hundred tail-enders are going to be doing more trotting from office to office for cards than they ever before have done on this campus.

One hundred percent pre-enrollment is not going to be the millenium ("the space of 1,000 years during which Satan will be bound on earth") many persons have contemplated. However, we look forward with high anticipation to pre-enrollment of all students for the second semester.

Vacation Deferred

Our summer vacation had to be scratched on account of pre-enrollment of freshmen. Plans now are developing around dates between November 23 and into December. Going south to the Rio Grande valley and the Gulf coast. Anyone have any good suggestions about what to see and do in those parts?

Reading Room Well Used

It is pleasing to glance into the reading room and to see students by the dozens and scores studying, lounging and resting amid those wonderful furnishings and surroundings. All we need now is five hundred dollars for draperies. How?

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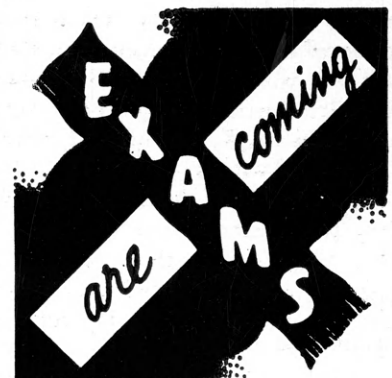
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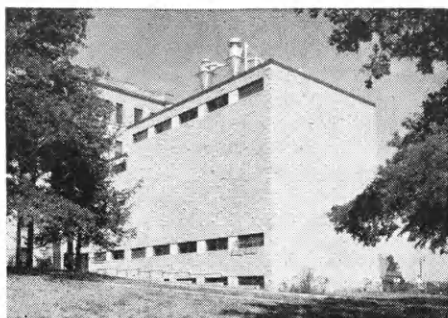
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The feed technology wing to be dedicated November 10 is a small scale plant capable of duplicating commercial operations.

NEW FEED TECH BUILDING

Houses Equipment for World's Only Curriculum in Flour and Feed Technology

By Clayton Hermon

THE HALF million dollar feed technology building completed at Kansas State college is scheduled for dedication November 10, Prof. John A. Shellenberger, head of Flour and Feed Milling industries, said.

K-State is recognized as the only school in the world offering a bachelor degree in flour and feed technology. Enrollment in milling curriculums has increased 25 per cent this year.

Students from eleven states and five foreign countries are enrolled in the milling curriculums this year. Germany, Switzerland, Sweden, Israel, and Canada are the foreign countries represented.

George Plange Jr., a German student, enrolled as a freshman in feed technology this year. He follows his father, owner and manager of Plange Mills in Dusseldorf, who did post-graduate work at K-State in 1929. Incidentally the senior Plange donated \$1,000 to the feed technology program.

Mill in Operation

Equipment in the mill is operating now. Professor Pence said approximately five tons of feed a week is processed for the college animal husbandry department.

Money and equipment for the project have been given by manufacturers and suppliers associated with the feed industry. The contributions of money and equipment saved taxpayers many dollars. A total of 375 contributors gave \$224,362. Machinery and services donated by 97 more contributors are valued at \$136,517.

An advisory committee was appointed shortly after the start of the project in September 1952, to carry on the work. The committee estab-

lished objectives, raised money, designed the project, solicited equipment and handled installation, Johnson said.

Basic objectives are to supply laboratories for nutritional studies, classrooms for discussion, and a laboratory-type feed mill to provide experience in feed mixing.

The building is finished with native Kansas stone. The architecture blends with the surrounding campus structures. Classrooms are in the west portion of the building and the feed mixing laboratory occupies the east portion. There are three floors on the classroom side and four floors with a basement on the laboratory side.

Concrete was used on the basement floor of the laboratory. Steel grating

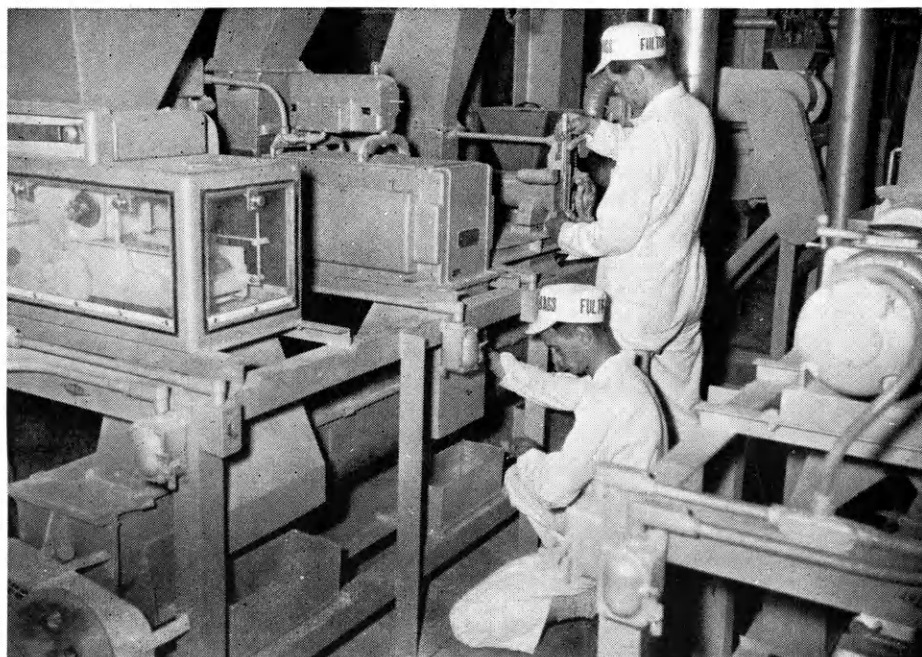
was used on the second, third and fourth floors to provide cleanliness, visibility, and flexibility, Johnson said.

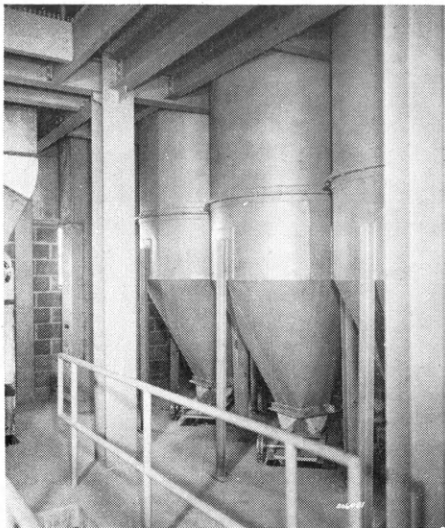
The variety of equipment in the mill includes different types of drives, feeders, pallets, hammermills, conveyors, bucket elevators, pellet mills, fans, bagging scales, screeners, cutters, bins, dust collectors and scales.

Design of the laboratory posed some problems. No similar project existed to provide guidance. The committee designed the structure to fit the limits of space and services.

Specifications, based upon manufacturer's information, have been prepared on each piece of equipment. These are being mounted in booklets

William Sauder, FT Sr, and Eugene Maurer, FT Sr, check samples of feed being ground and blended with machinery in the pilot feed mill.





These seven incoming whole grain storage bins hold about 400 bushels each.

which will be available to anyone interested, Johnson said.

Dr. Waldon Hastings, formerly with Marine Products company of Seattle, has been added to the teaching staff. Other instructors are Eugene P. Farrell, John A. Johnson, and Royce O. Pence.

Function of the feed milling staff is to develop courses to give students technical knowledge of the formula feed industry, Shellenberger said.

During the first two years a student is given direct instruction in feed technology. Organization, operations, and functions of a feed manufacturing enterprise are studied and basic principles of feed manufacturing developed.

As a student progresses he receives detailed instruction in different phases of feed technology. Because of the complexity of formula feed operations, it is necessary for a student to pursue work in specialized subjects. Currently, a student may select administration, operations, or nutrition for specialized training.

"Past experience with the flour milling technology program indicates that many graduates become key men in the industry. Graduates will enter management, purchasing, sales, mill operations, engineering, nutrition, or other phases of feed technology in accordance with the specialty option which they select," Shellenberger said.

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Does Irrigation Pay?

350,000 Acres

Under Irrigation in

Western Kansas

By John Saylor



From left to right, level borders in western Kansas are being flooded. Four borders visible are flooded and the water is being applied to the fifth border, to the far right.

A DRY AUGUST in Western Kansas has reduced what was a potentially bumper crop of maize to a piddling amount of grain. During late August fields were brown to the point of maturity, but few heads of grain were showing.

These upland fields are being grazed or put up for winter feed in an attempt to cushion the loss of what may have been a record maize crop.

Each year that the upland farmer sees another vital crop die out and wither away, he wishes he were in the valley profiting from the seeming abundance of the scarce element, water, that has driven so many farmers from the western part of the state.

Capital Needed

To the uplander, a valley farmer with a flat piece of land and a good source of water for irrigation has unequaled security. What more could a man ask for, in a land that lacks only water to produce, than that very water.

There are 350,000 acres of western Kansas under irrigation, and with each dry year, many more acres are going under irrigation, but the difference between asking for and reaching underground sources is spanned by a tremendous capital outlay. Also switching from a rather loose type of

dryland farming to a concentrated, deliberate system takes much consideration on the part of the farmer.

Factors Overlooked

The details behind these two factors are, as often as not, overlooked by the drylander. For all the virtues of irrigation, men who have it often wish they were back in the hills, taking their chances with Mother Nature. There a farmer is happy if it rains. The farmers who irrigate are also glad to see rain, but usually they have been preparing the irrigation equipment in case the rains don't come.

Many times it appears that a man is going to a lot of work for nothing. Once he is prepared to irrigate, nothing less than a slow three inch rain can provide enough water to stop him, without irrigation becoming a losing proposition. While an uplander rejoices over an inch of rain, to the farmer with irrigation, it only means a muddy stretch to walk through in servicing the pumps.

For all its labor, expense, and time consumption, farmers in western Kansas are seeing fit to apply irrigation wherever possible. Why? According to a Kansas State college circular on *Irrigation in Western Kansas*, the marginal profit over and above the capital outlay is greatly increased.

For the sake of illustration, this circular assumes that an acre-foot of water will cost \$5. This includes capital outlay for pump, well, ditches, and operating costs. Additional costs include increased labor necessary to handle larger crops, fertilizer for higher yields because of decreasing soil fertility, and increased machinery investment and expense. These may run as high as \$10 an acre.

Using these figures a rough comparison can be made. If 24 inches of irrigation water (2 acre-feet) is required to produce 60 bushels of milo, the cost for water would be \$10 an acre.

Expense

Additional costs of \$10 might bring the total to \$20 an acre more than the cost of producing dryland milo which yields an average of 13 bushels an acre. Irrigation, in the above example, would be responsible for an increase of 47 bushels of milo to the acre, with an added value of about \$52.

Added receipts per acre due to irrigation would then be \$32 (\$52 minus \$20 expenses). This would be available to pay the cost of leveling and all other costs not included elsewhere. Other crops can be compared in the same way, although individual

cases may vary widely from the above figures.

To be successful, irrigation must increase returns enough to pay the cost of pumping, plus all other costs associated with irrigation. Comparing crop yields under dryland conditions with prospective yields under irrigation essential. Data from the Garden City area are shown in the following chart.

CROP YIELDS, DRYLAND VS. IRRIGATION, GARDEN CITY STATION

Crop	Dryland		Irrigation	
	Con't cropping	Fallow	Average methods	Approved methods
Wheat	5.9 bu.	13.6 bu.	30.0 bu.	55.0 bu.
Milo	13.2 bu.	29.5 bu.	60.0 bu.	90.0 bu.
Barley	7.4 bu.	13.3 bu.	28.0 bu.	**
Oats	9.3 bu.	17.1 bu.	32.0 bu.	**
Alfalfa	—	—	4.5 T.	7.0 T.
Sugar beets	—	—	10.5 T.	14.0 T.
Forage sorghum	4.0 T.	8.0 T.	11.0 T.	20.0 T.

** Not recommended because of insects and climatic conditions.

When a farmer considers irrigation he must consider all the factors connected with it. He must start with a flat piece of land, unless he is going to use a sprinkler type of irrigating equipment. To use some other system, some leveling will probably be needed, for there are few areas where the correct drop, about 2 to 3 inches

Gated pipe, a relatively new system which takes the place of ditches, provides excellent control of water to each of the furrows.



per hundred feet, is likely to occur naturally.

On or near this land the farmer will need an adequate water supply, preferably a well capable of producing 1,000 gallons per minute, the requirement for anything over 50 acres of cropland.

Of the four methods of irrigation used in western Kansas, furrow irriga-

tion, graded borders, level borders, and sprinkling, the furrow system is probably the most widely used. The furrow system has become the popular one on nearly all cultivated crops. A ditch and siphon tubes or gated pipe can be used. The least expensive method is to open the side of the ditch and let the water run into a certain number of furrows, but a great deal of soil erosion takes place if this is done. Gated pipe is neater and saves labor as well as cutting down erosion, but it is more expensive.

Graded borders and level borders are alike except that graded borders have a slight fall-away from the water source, with the low end open. When water reaches the lower end of the border it moves on out of the field. With level borders, the lower end is closed and the area is filled with water, much like the Chinese do in irrigating their rice paddies.

Sprinklers Adaptable

The sprinkler system is a field sized system of the familiar lawn equipment (in giant version), and while more expensive has the advantage of being adaptable to unlevelled ground.

The farmer should know how much water can be stored in the soil on his



Sprinkling systems are slow to enter western Kansas because they are considered less efficient, but some are seen operating.

farm. In coarse, sandy soil, three-fourths of an inch of water can be stored, while a heavy clay soil will store two inches.

How fast will the soil absorb water? This question should be considered and answered by testing before an irrigation system is installed, if ditch irrigation is to be used, for how fast the soil will absorb the available water will determine the proper down-grade and how fast the water should run down the field.

Use of Fertilizer

Probably the most revolutionary item in the new system of crop production will be the use of fertilizer. The use is gradually becoming more widespread in western Kansas as the soils become more depleted, but irrigation accelerates the need for it, because yearly yields are increased so greatly.

Irrigation is expanding in western Kansas. There are advantages and disadvantages to irrigation, but the farmer himself will have to decide whether or not the venture will be a good investment. At best, information can be provided only to help each individual determine these two vital things: (1) the cost involved, and (2) the probable returns.



Queen Diane Higley

AGGIE VS. NON-AGGIE

*in a Week of Highspirited Frolicking
Around the Familiar Horse Tank*

By Arnold Appleby

EACH YEAR the K-State aggies don their blue jeans and red neckerchiefs for the six days, known to all K-Staters as "Ag Week." It begins on Monday morning with several dunkings of optimistic or forgetful aggies in the well-known horse tank and ends Saturday night with the crowning of the Queen at the "Ag Barnwarmer" dance.

Many freshmen (and sometimes upperclassmen) are rather bewildered by all the dunking and feuding that is carried on. A few are disgusted and resentful. It all gives rise to the question, "What is the purpose of Ag Week?"

Poll Taken

In an effort to answer this question, a poll was taken of ag students picked at random. Most of them had thought very little about it and had to stop and consider the matter for a few minutes. However, the answers were surprisingly similar. They boiled down to two major reasons why Ag Week is carried on each year: the aggies become better acquainted with each other in working together, and

they become recognized as a group by other students and faculty.

Promotes Ag Unity

There were also other various answers such as "to let off steam" and "to give the vets a much-needed bath." Dean Mullen summed it up very well when he said, "Ag Week fosters and promotes Aggie spirit. Also, all other schools have at least one social event during the year, so this serves as the big social event of the fall semester for the School of Agriculture."

Ag Week started off with a bang, despite the heavy downpour of rain. The vets wasted no time in making an attack on the horse tank. After a short skirmish, they succeeded in dyeing the water, though two of them retreated to Vet Hall with some first-hand knowledge as to how cold the water was. There were no aggie casualties beyond some very muddy jeans and boots. Later in the day some butyric acid found its way into the tank to turn it into a noticeably smelly affair.

Due to the heavy rain, only five

unwary aggies were treated to a free bath on Monday.

The action on Tuesday increased considerably when the rain clouds disappeared and the vets re-appeared. The tank was kept busy all day when a goodly number of aggies refused or forgot to wear the proper garb. By 4 o'clock, the crowd around the horse tank had diminished somewhat, at which time the vets chose to attack.

Armed with hatchets, about 35 of them swooped down on a small band of aggies and proceeded to chop three holes in the tank, taking time to dunk two aggies in the process. By Wednesday, however, the tank was in serviceable condition again and was used frequently.

Reporter Rescued

A "roving reporter" from the Collegian, who became too inquisitive, was seized and headed for the horse tank. The vets decided he should not be doused and immediately went to his rescue, whereupon, the poor reporter became the rope in an old fashioned tug-of-war. He survived,

however, and made his way back to Kedzie, an enlightened and embittered man.

Big Battle

In the afternoon, one of the most vigorous battles in Ag Week history took place. A large band of aggies marched on Vet Hall where they captured several vets and proceeded to douse them. In a short time, an even larger group of vets marched on the horse tank. Two aggies, who were stationed on the roof of Willard Hall with a siren, put out a general alarm for reinforcements.

After that, the horse tank was never empty. Several aggies were dunked along with the vets. The fight ended with only minor cuts and bruises being evident. One more hole appeared in the tank, which was withdrawn for further repairs.

More Rain

Thursday, the tank was left in its hiding place due to more rain. However, there were raised eyebrows and mumbled threats when the Collegian was read. The reporter who had been mishandled on Wednesday had written an editorial which was definitely not favorable to the aggies.

The next morning, the reporter was seized at Kedzie, taken to the horse tank, and proceeded to obtain some first-hand material for the Collegian by doing a beautiful, backward-sideways-jackknife flop into the tank (with considerable help, of course).

However, Friday afternoon, all attention was switched abruptly from the horse tank to the quadrangle east of Anderson. And for good reason, for it was here that the Queen candidates were given some farm "chores" to do, including riding a horse, milking a cow, driving a tractor, etc. They all survived.

Queen Is Crowned

On Saturday night, the Ag Barnwarmer was held in Nichols gym. The climax for the entire week was reached when Miss Diane Higley, Southeast, was crowned Queen. Dean of Agriculture Arthur D. Weber placed the crown on her head as she sat on her throne of straw under a bright yellow moon and a sign which read, "Ag Barnwarmer, 1955." Her attendants were Marguerite Scherling, Van Zile; Dorothy Fox, Clovia; Janie Fulton, Delta Delta Delta; and Diane Whitley, Waltheim.



Diane Higley ponders over a problem posed by Bob Cullins, chairman, at Ag Seminar.

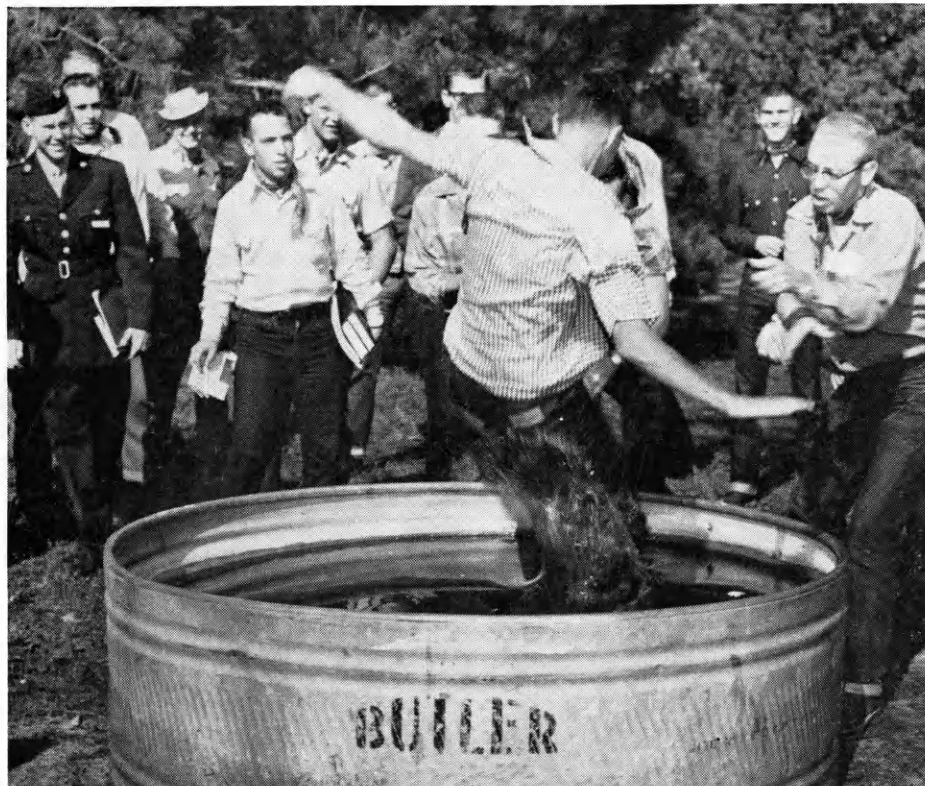
The gym was decorated in the style of an old barn with corn shocks placed at intervals around the sides and a plow and surrey lending atmosphere to the scene. The lighting was provided by lanterns hung from the balcony and the seats were bales of straw placed around the edges.

Music was by Jimmie Pierson and his band from Topeka. The dancers stepped in time to a variety of music, including everything from the bunnyhop to square dances. The traditional refreshments of cider and doughnuts provided the dancers with the energy needed to keep up with Jimmie's fast music.

Barnwarmer Committees

Largely responsible for the success of the Barnwarmer, and Ag Week in general, was the Barnwarmer committee. It was headed by Mark Drake and his assistant, Ray Zimmerman, with the following members, each responsible for a specific job: Brent Adair, Jack Van Tilberg, Nelson Galle, Ray England, Bob Long, Gilmore Dahl, George Atkeson, Virgil Norton, Estel Schultis, Bob Cullins, and Gary Neilan. Faculty advisors were Norman Collins and Milton Manuel.

Another non-conforming Aggie receives a free bath in the well known horse tank, as some other Aggies look on happily. He reported that the water was 'chilly but refreshing.'



The Flint Hills of Kansas



Thousands of Cattle Feed on the Lush Grass of This Area

By Carl Leinweber

GOOD CATTLE, good grass, and beautiful scenery: this is the story of the Flint Hills area of east central Kansas. This range of hills running across Kansas from north to south and varying in width from a few miles to perhaps as many as fifty miles is the last extensive area of the true prairie region left in U.S.

The natives of the region fondly speak of it as the best cow country in the world. What makes it so? Well, the native grasses grow tall, nutritious, and in abundance during the spring and early summer, and this very abundance is one of the chief factors in making the Flint Hills the fine grazing area that it is. The limestone underlying this region also makes its contribution and no mineral deficiencies occur in cattle grazed in this area.

Many Different Grasses

Some of the major grasses found here are big bluestem, a tall sod forming grass; little bluestem, an intermediate grass; side-oats grama, also an intermediate grass; Indiangrass and switchgrass, both tall sod forming grasses. In addition to the tall

grasses, a number of short grasses also grow in this region. Among the more important of these short grasses are buffalograss, blue grama, and Kentucky bluegrass. The buffalograss increases during dry years, being a highly drouth resistant variety, and in wet years there is an increase in Kentucky bluegrass.

Pastures in the Flint Hills have a high stocking capacity; that is, they will carry more than the average number of cattle on a given acreage. Pasture studies at the Kansas Experiment station at Manhattan indicate that about five acres per animal unit is considered proper for season-long grazing.

Beef Production Systems

Several different systems of beef production are used by Flint Hills ranchers. Thousands of cattle, usually steers, are shipped from the southwest, mainly Texas, New Mexico and Oklahoma, in the spring to fatten on pasture during the summer. These cattle come in during April and are grazed until early fall. They are sold off grass in the fall as grass-fat cattle or as feeders for the cornbelt feedlots.

Although the Flint Hills area is not considered an important feeder calf producing area in Kansas, many commercial cow herds are found there. A few of these ranchers with cowherds have their calves come in the fall or early winter and follow a system of creep feeding. These calves are sold as fat baby beeves the following fall.

Wintering, Grazing Program

Then there are ranchers who buy feeder steers in the fall, winter them and graze them the following summer and sell them for feeder yearlings. Deferred feeding of steers is a popular practice on ranches with tillable soil for raising alfalfa, sorghums, or corn.

Flanking the edges of the Flint Hills, and nestling in the little valleys along the many streams in the Hills themselves, are found many general farming type holdings. Many of these farmers keep cowherds or buy feeder cattle from outside sources. It is sometimes necessary to rent extra pasture for these cattle, but most of them produce all the feed necessary

for the fattening phase of the program.

New Crops Help

The advent of combine type sorghums has greatly facilitated these farm operations, for the Flint Hills lie outside of what is considered the cornbelt area of Kansas, and corn is sometimes a rather uncertain crop. Milo grain substitutes readily for corn in a fattening ration, and its availability is a big factor in a beef program.

The water supply for dry years has been supplemented by building ponds. Rare indeed is a Flint Hills pasture that doesn't have several ponds of recent construction, and the past three or four dry summers have shown them to be at least a partial answer to the water problem in dry years.

Recreation Area

The Flint Hills while furnishing some of the country's finest grazing serve another equally useful purpose for the people of this region. They have become the recreation area or playground for thousands of people from near and far. People come here to hunt, fish, picnic, or just to enjoy the scenery in the Hills.

The rivers and streams that flow through the Flint Hills offer some really excellent fishing. Many of the ponds have been stocked and most of them are available for fishing if you just contact the owner first. Some of the rivers such as the Big Blue, the Saline, Cottonwood, Neosho, Fall river and many others are tops for catfishing, and the cats grow big enough to satisfy most any fisherman.

Lake Wabaunsee

Lakes, such as Lake Wabaunsee in the southern end of the county of the same name, have become a week-end retreat for hundreds of weary city dwellers. They offer swimming, boating, fishing, and some of the most beautiful scenery in the mid-west. Many families from nearby towns and cities have built cabins at the lake and spend week-ends and vacations in the quiet and peace of the Flint Hills.

Another big event in this grass land area is the annual Flint Hills rodeo at Strong City. A rodeo is the natural show for this part of the country, and this attraction has become a big-time show. Contestants come from many other states to compete against the local cowpokes in this cowboy sport.

Adverse Conditions

Cattle prices have dropped in recent years, and the years of successive drouth have hit hard at many of the farmers and ranchers but they are sticking it out. It's good cattle country and they will come back; they always have. Some of the oldtimers have been sending cattle to the Flint Hills for summer grazing for many years, and will continue to do so for many more. Most of these old cattlemen have been in the cattle business all their lives and they claim that cattle grazed in the Flint Hills gain more than cattle grazed on pasture in other areas, and they probably are right. They've been in the game a

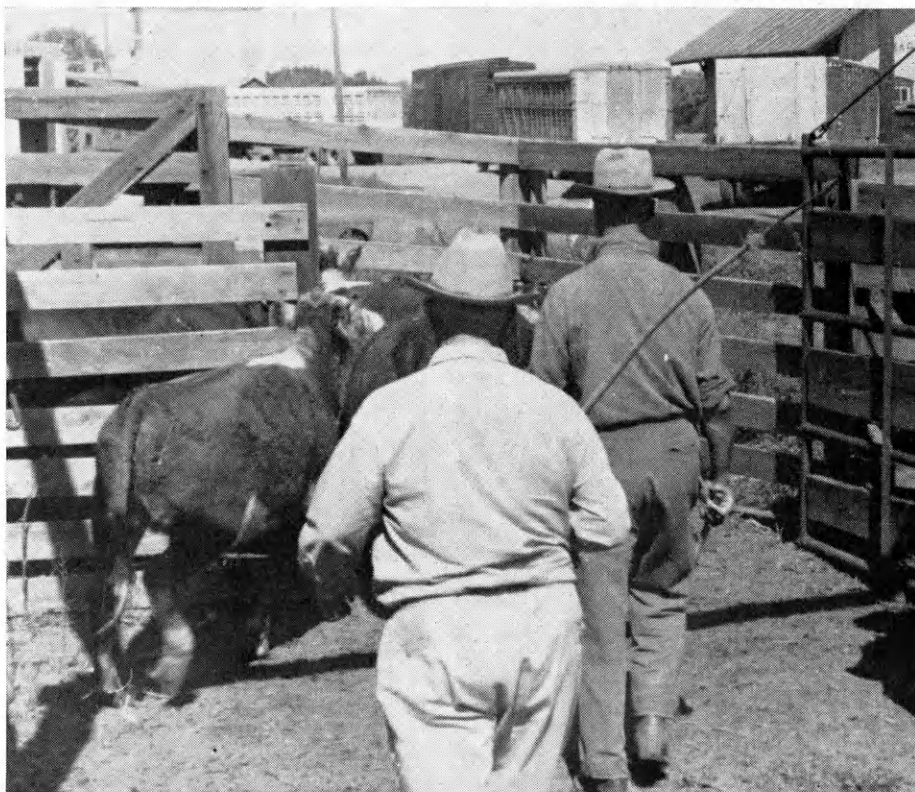


Lake Wabaunsee in the central sector of the Flint Hills has become a popular resort area for thousands of people. Speed boat races are but one of the many attractions that lure visitors to this area.

long time and experience backs up what they say.

So, when traveling through the Flint Hills take a good look around. There is more to be seen than the miles and miles of hills and grass. You can see farming, stock raising, dairying, and a prosperous contented country . . . the blue-green Flint Hills are truly home to a large number of native Kansans.

Each spring and fall there is a general movement of cattle in the Flint Hills. In the spring they arrive for summer grazing and in the fall they are moved out to the feed lots in the corn belt, or to the big markets as grass fat cattle. Many of the small town stockyards, such as this one, which are normally idle, suddenly bustle with action.



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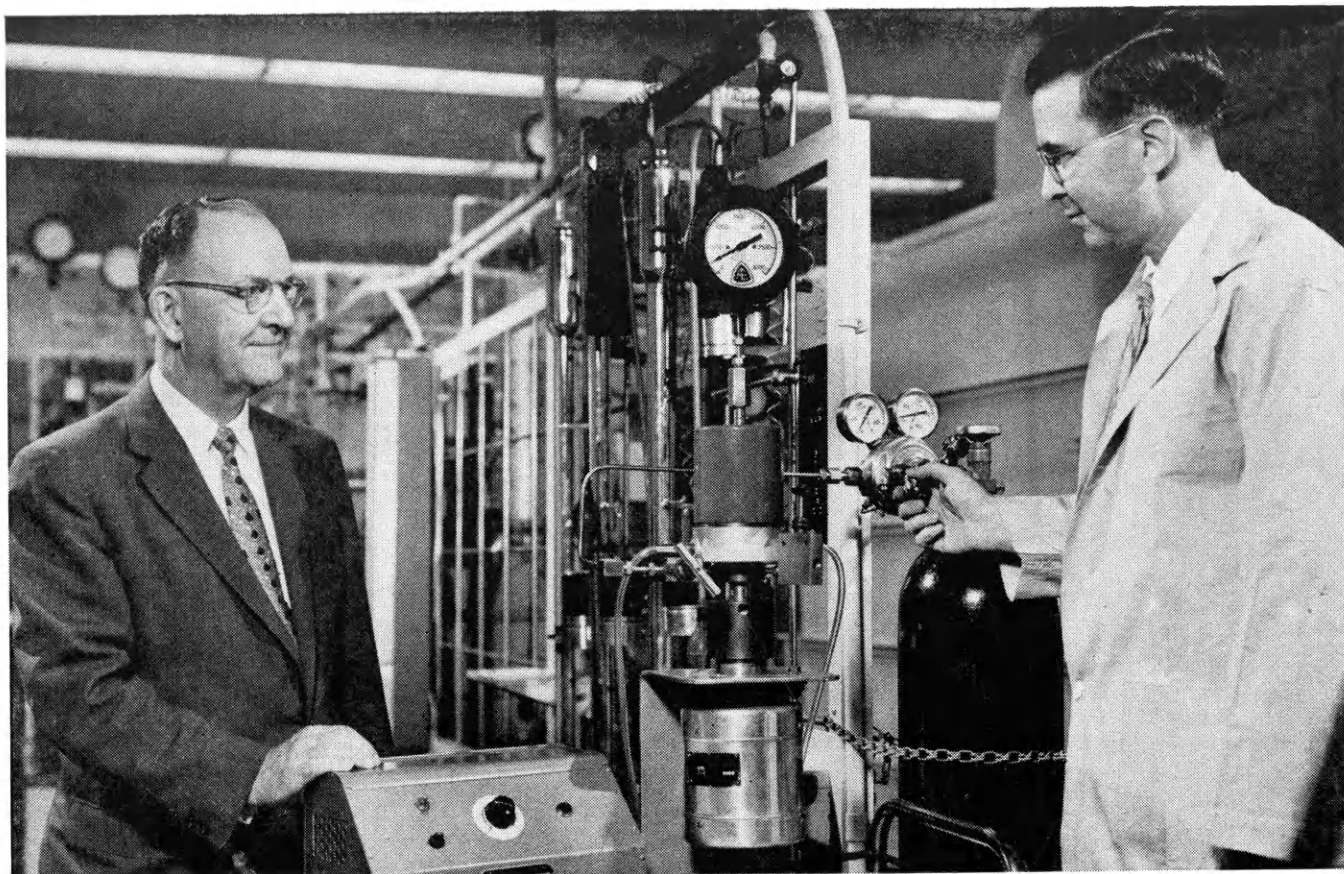
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Dr. Ward Kuentzel and Dr. Edmund Field, co-inventors, observe operation of the new Magne-Dash autoclave in Standard Oil's Whiting research laboratory.

Orders for inventions taken here

MODERN RESEARCH creates a need for brand-new types of equipment. In petroleum laboratories, mixing up some stuff in a beaker usually isn't the answer. The research pioneer may have to use high temperatures and high pressures. If he must stir his mixture, he has a tough job. How can he prevent leakage past the shaft of the stirrer?

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Like many other inventions made by Standard Oil scientists to solve our own problems, the Magne-Dash is licensed for production and sale by a maker of scientific equipment.

The Special Devices Program is just one of the creative activities at Standard Oil. Young scientists find it stimulating to work in such an atmosphere.

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Homemaking Away from Home

Girls Majoring in Home Economics Receive Practical Training in the Home Management Houses

By Doris Wierenga

MANAGING a home sounds simple enough, but K-State coeds find they learn much by living in the home management houses. For this reason home economists say it is a good idea for the home ec students to live in home management houses.

"Home management is one of the most practical courses I have taken," says Ardella Rusk, HDA senior from Wellington. "Living in the house really puts to test the things we have learned in other classes." Ardella enjoys working with others, sharing the duties, and entertaining guests.

"I did not know such nutritious meals could be planned for such a low income," says Betty Worden, home ec teaching senior from Olathe. With a little planning, Betty prepares attractive, wholesome meals for the girls in her house. By purchasing and preparing the food, she now has a better idea of the quantity of food needed for a family.

K-State has three home management houses on the campus. The two-story houses are planned for different income levels. The Ula Dow Cottage is operated on a minimum level, Margaret Ahlborn Lodge on an average level, and Ellen Richards Lodge compares with a high income. By living in two houses the girls learn what effect income has on the home and household expenses.

The houses are run on a self supporting basis. Utilities (telephone?),

food, and household supplies for Ula Dow are about \$57 a week for 7 people. The same expenses for the other houses are approximately \$61 and \$75 each.

Meals are planned accordingly for the different incomes. Meals in Ula Dow are planned to use 60 cents a day for each person. Margaret Ahlborn girls have 75 cents a day for meals and girls living in Ellen Richards, the high income house, have 90 cents a day for meals.

Size of House

The size of the houses and their furnishings also correspond to the different income levels. Ula Dow is the smallest house. The dining table is in the kitchen. The conventional washer is in the basement. Kitchen cupboards are the open type. Margaret Ahlborn house has a dinette and wooden kitchen cupboards. Laundry facilities are in a portion of the recreation room in the basement.

The high income house has a dining room, metal kitchen cupboards, home freezer, and an automatic dishwasher. The two rooms in the basement include a recreation room and laundry room. Laundry facilities include an automatic washer and dryer. There is also a screened patio.

Seven in House

Six girls, usually seniors, and one instructor live in each house. The

duties are divided between the girls as manager, cook, pre-cook, assistant cook, housekeeper and assistant housekeeper. Each girl does each duty for 5 days. At the end of 30 days the group moves to a different income house.

The manager makes sure that all is running smoothly, acts as chairman for special occasions, and host at the table. The cook prepares and serves the meal, sets the table and waits on it during the meal, and is responsible for kitchen clean-up. Planning the menus and buying the groceries are the duties of the pre-cook. The housekeeper and her assistant are responsible for the laundry and cleaning the house.

Planning Stressed

In home management, just as in the foods classes, planning, preparing, and serving nutritious and attractive meals are stressed. A typical day's menu in Margaret Ahlborn Lodge might be:

Breakfast

Orange Juice
Scrambled Eggs
Toast Butter
Milk Coffee

Lunch

Vegetable Soup
Toasted Cheese Sandwiches
Lettuce Wedges
Baked Apples
Milk



Planning of meals for guests is part of Home Management course. To prepare a dinner . . .

Dinner
Pork Chops
Baked Sweet Potatoes
Spinach
Waldorf Salad
Bread Butter
Fresh Sliced Peaches Cookies
Coffee

Daily activities begin about 6 a.m. The cooks prepare breakfast and serve it at 7 o'clock. Then the girls washing dishes have time to get to their 8 o'clock classes. The living room, halls, and bathroom are cleaned daily. The housekeeper may do the cleaning whenever she has time during the day; however, it is usually done in the morning. Lunch is served at 12 o'clock. This again leaves plenty of time to wash dishes. Dinner is at 6 in the evening. By 7:30 the dishes are washed and the kitchen is cleaned. In the evening the girls may study or do whatever they please.

Saturday is general clean-up day. The kitchen and bathroom floors are cleaned and waxed, and the remainder of the house gets a good weekly cleaning. The laundry is done twice a week, on Saturday and Wednesday. This schedule is flexible and can be changed to meet group needs.

In addition to daily duties the group works on a project for the house. Some past projects have been making draperies and curtains, re-upholstering furniture, and making matching lamp shades and picture frames.

Home management is a 3 hour college credit class. The instructor lives in the house. She has a suite on the first floor. The second floor of each house has 3 two-girl rooms. The rooms are furnished with a desk, chest, bed, and closet for each girl.

Besides working in the house, the girls attend a theory and evaluation class twice a week. In this class they discuss such topics as the role of the family in a democratic community and the use of leisure time. They participate in demonstrations of labor saving methods and devices.

Entertaining guests is one of the highlights of home management life. Each group entertains five times during the nine weeks. Invited guests may be faculty members, parents, housemothers, boy friends, or any other special friends. In the summer, guests are often entertained at picnics. When the weather is cooler the guests may be invited to a fireside desert party, or maybe the girls in a house join for snacks at a bedtime pajama party.

Two or sometimes all three houses join for a special affair, for instance, a buffet dinner for an honored guest, or the girls from one house may invite girls from another house to be their guests. The girls all believe life in the home management houses is an educational and thoroughly enjoyable affair.



.. someone must make a salad



.. sweet potatoes go in the oven



.. and after dinner, all those dirty dishes

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"Let's take the 210 birds I housed last year at exactly six months. They were a Leghorn type and at that time weighed about 4 lbs. During the next 10½ months they produced 45,808 eggs—a rate of 69%.

"Now I consider that a good rate of production for such a long period. But equally important to me was the cost. I figured my own corn at 2½c per pound, wheat and oats at 3c per pound. Also included in my feed cost is a charge for grit, MoorMan's Triple X to paint the house and MoorMaFume* Insecticide for the control of lice and mites. This gave me a total cost of \$688.75, or 18c per dozen eggs. This included the feeding of 20 cockerels for the 10½ months, too.

"Actually, it amounted to 4.48 lbs. of feed per dozen eggs. Because I used our own grain with the Mintrate my total out-of-pocket cost was only \$304.50."

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Mrs. Sprunger feels that though good breeding is mighty important that even the most carefully bred birds cannot do the best job of producing eggs unless they are well fed. She has found, too, that a clean house and clean drinking water are a necessity. The drinking water for the Sprunger flocks is sanitized with MoorMan's Drinking Water Tablets and lice and mites are controlled with MoorMan's MoorMaFume.



"One reason my birds are so thrifty," says Mrs. Sprunger, "and such consistent producers is that they are started on MoorMan's CociCurb Mintrate for Starting Chicks. Feeding Mintrate and my own ground yellow corn gave me a total cost of \$101.39 to bring 300 straight run chicks up to 12 weeks of age."

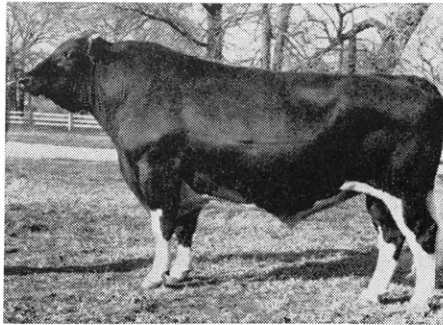


"During the first 8 weeks we use a ration of 200 pounds of our own ground yellow corn to 100 pounds of Chick Mintrate. At 8 weeks we change over to 300 pounds of corn to 100 pounds of Mintrate. My records show that by 12 weeks, when these birds weighed about 3 pounds, my average cost per pound of gain was only 11.2c."

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