

Einkorn, Spelt and Emmer Crops

Of Interest to Field Workers Who Seek Information as to Adaptation.

(Prepared by the United States Department of Agriculture.)

Conclusions drawn from experiments with emmer, spelt, and einkorn, three distinct kinds of crops related to wheat, are presented in a new bulletin just issued by the United States Department of Agriculture. Department Bulletin 1197 should be of interest to farmers and more especially to field crop workers who want information as to the adaptation of these crops to the conditions in various sections of the United States. The bulletin seeks also to prevent, so far as possible, the exploitation of these rather minor crops in sections where they are not adapted.

Emmer Not Hardy.

Winter emmer, say the investigators, is not hardy enough to be grown on the great plains north of Kansas, and even in Kansas it may be winterkilled. It is less productive than winter wheat. Because of its low yields it should not be grown in any part of the United States or Canada.

Spring emmer should not be grown except possibly to some extent in North Dakota, eastern South Dakota, and southern Minnesota for the purpose of increasing crop diversification. In all sections of these states it is outyielded, on the average, by the leading varieties of barley or oats, or both, although in some years at some experiment stations it will outyield these crops. Even under conditions where rust and drought are common, emmer does not compare favorably with barley and oats.

Spelt Is Productive.

Winter spelt is more productive than barley and oats in a limited portion of Maryland and Virginia where experiments have been conducted, and apparently also in Utah. The limits of its adaptation have not been determined, but it is probable that it will be found to give best results in comparison with other small-grain feed crops in the area between the spring and winter oats and barley areas. It does not produce as high net yields of threshed kernels as does winter wheat, even in those districts where it appears promising.

Many Realize Rotation

of Crops Is Important

Most farmers nowadays realize the value of rotating crops according to some systematic scheme that may best suit the purpose of the farmer, yet on very many farms corn is grown year after year on the same land. The Ohio experiment station has been conducting rotation experiments and growing crops on the same land continuously for the last 30 years and the results they have obtained are, therefore, quite reliable. On one field, where corn has been grown continuously without manure for 17 years, the average yield has been 28.1 bushels per acre. On an adjoining field corn has been rotated with oats for 17 years. On this field eight crops of corn and nine crops of oats have grown during that period. Corn has averaged 41.7 bushels per acre and oats 39.8 bushels. This field also was not fertilized. This two-year rotation of corn and oats teaches a most valuable lesson, for the field has almost produced as many bushels of corn as the field that was in corn every year, and at the same time has produced an average of nearly 40 bushels of oats per acre during the years that this crop was grown.

Turnips and Rutabagas

Are Valuable for Feed

Both turnips and rutabagas can be grown for summer, autumn and winter crops, and are valuable throughout the season as food for all kinds of live stock. The housewife is learning to appreciate both the turnip and rutabaga more each year.

While we need more or less sweets in our daily supply of food, we are being cautioned against the use of sugar, and it is natural to be looking about for other sources of sweets.

The rutabaga is a sweet turnip. Those fine yellow and white varieties used as food contain a certain percentage of sugar, and their use as food will supply a need of the body and assist greatly in the reduction of the cost of living.

It will pay to grow both turnips and rutabagas. They will do well on most any soil, but prefer a rich, sandy loam.

Favor Nitrate of Soda to Fertilize Corn Crop

The yield of corn is determined very largely by the amount of ammonia used in the fertilizer, according to Prof. C. P. Blackwell, agronomist at Clemson college, who thinks that nitrate of soda pays much better on corn than other forms of fertilizers, and that 150 to 200 pounds of soda per acre is not too much to apply to the average land.

Side dressing of soda should be applied to corn when the plants are three to four feet high. Much of the nitrogen is wasted when farmers wait until the corn begins to silk and tassel before applying soda. Much better results are secured when the soda is applied at the proper time. The rate of application of soda will have much to do with the crop secured.

Cleanliness Is Big Factor With Chicks

Many Ailments of Youngsters Can Be Prevented.

"The biggest factor in growing good pullets is cleanliness," says W. H. Allen, specialist in poultry husbandry at the New Jersey State College of Agriculture, New Brunswick. "Such troubles as intestinal worms, coccidiosis, and paralysis are some of the troubles in pullet raising which can be prevented by cleanliness. At the time of hatching the chick is free from all diseases except bacillary white diarrhoea, and is free from this disease as well, unless the breeding stock is infected. Deaths alone are not caused by disease; digestive organs of surviving chicks may be injured, thus resulting in inefficient food assimilation.

"Cleanliness starts with the coop. This should be thoroughly cleaned each week, the litter and droppings removed and new litter put in. The ground is the next source of trouble to be watched. The soil next to the house should be turned under from time to time, and especially during wet weather. The house should be wired so that the chicks cannot get under it, as this ground will get moldy and become infected with disease. All poultry manure on the farm should be kept dry during the summer months and the manure shed should be screened to prevent flies from breeding in it. Flies are the source of much of the tapeworm troubles. Just because one flock is laying 50 per cent during November, is no reason why all will. Whether a flock lays well next winter or not depends upon how well they have been grown.

"Last, all old birds should be quarantined from the young stock. Old stock often carry disease, though they may not show it; hence, they are a menace to the growing stock."

Imported Parasites to Control Alfalfa Weevil

Destructiveness of the alfalfa weevil in the West has led entomologists to give attention for some years to the possibility of using parasites to assist in controlling this pest and to search in Europe, where the alfalfa weevil is native, for suitable species. Of the 12 species which have been brought from Europe into the United States five have shown promise of practical usefulness in Utah. One in particular, *Bathyplectes curculionis*, has become well established, so that it actually swarms in infested fields in this state and, in some instances, destroys over 90 per cent of the weevil larvae. Several promising species of parasites which might aid in controlling other stages of the weevil have thus far failed to become established.

A new department circular, No. 301, entitled "Introduction of Parasites of the Alfalfa Weevil Into the United States," by Thomas R. Chamberlin, entomologist, gives a brief account of the more important imported parasites and discusses the effectiveness of *Bathyplectes curculionis*. It may be obtained, while the supply lasts, by applying to the United States Department of Agriculture, Washington.

Weeds Harm Soy Beans

One thing the successful soy bean grower learns is that they must be given the right care at the right time. Nothing is so disastrous to them as a crop of weeds growing with them. It is more profitable to grow five acres right than twenty acres full of weeds. Weeds reduce the yield and quality of the beans severely, make cutting very difficult and at threshing time there is a mass of stuff to handle.

Farm Hints

Owning a farm home makes for ambition, industry and thrift.

Buy or prepare bluestone paste for treating watermelon stems.

Plan to get some resistant crop into the rotation on soil infested with root knot.

All varieties of soy beans are soil-builders and are worth the labor and expense of planting for that purpose alone.

Time invested in helping to build up a better community will pay big dividends in happier and more prosperous people.

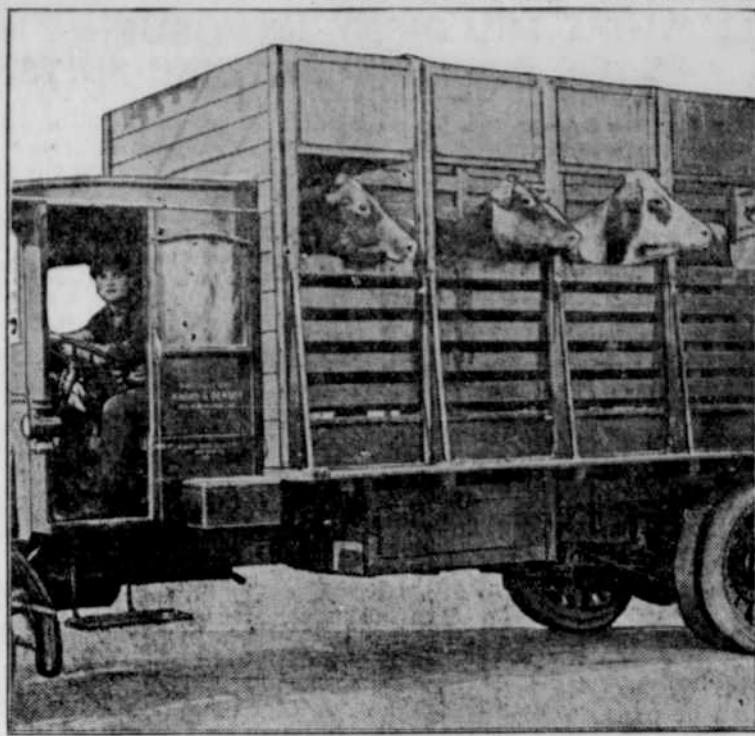
All farmers should not go into the raising of hogs in large numbers, but every farmer can have some hogs and make swine raising fit into his other farm operations.

Farmers who grew soy beans last year and saved the seed have made from \$20 to \$100 per acre from the sale of seed, and the crop can be grown after grain.

Any common tin can filled half full of axle grease in which is placed an old, worn-out paint brush, will be found very handy on the farm for greasing plow shares and cultivator shovels.

Legumes mean more and better live stock, a more productive soil, better quality and better yields of grain, less expense and larger profits; in brief more prosperity for the farmers, the business men and the community.

PAVED ROADS SOLVE SHIPPING PROBLEMS



Motor Truck Loaded With Cattle for Market.

Transporting live stock to the market is much less of a problem than it used to be, now that the country is building extensive systems of paved roads. Adequate paved roads enable the heavy use of motortrucks at all seasons and under all conditions of weather, and by use of these trucks live stock can be hauled to market quickly and economically.

All Markets Benefit.

Virtually all the important live stock markets of the country—Chicago, Kansas City, Indianapolis, Omaha, Sioux City, St. Joseph, Mo., and South St. Paul—now benefit greatly by this method of shipping animals. The Indianapolis stockyards, in the supplying of which this method of shipment is used to the greatest extent, have received as many as 6,800 head of stock a day by motortruck.

Many stock raisers, who do not ship all the way by motortruck, but depend on trains to carry the stock part of the way, have found that the motortruck is the most satisfactory way of getting the stock to the train. The animals reach the market in much better condition than they would if they were driven many miles to a railroad for loading. This method also saves a great deal of time.

Valuable for Hogs.

In the shipment of hogs the motortruck method is especially valuable in hot weather, for many hogs die of heat when shipped long distances by train in the summer.

With good concrete roads, equally good at all times, the farmer may make rapid shipments at the time when he can get the price for his stock.

WATCH STEERING GEAR CAREFULLY

Merely Necessary to Keep Joints Well Greased to Operate Properly.

(By ERWIN GREER, President Greer College of Automotive Engineering, Chicago.)

According to automobile accidents headlined in the country's newspapers the steering gear of every automobile should be painted a horrible bloody red.

But are the newspapers right? Does the steering gear really go wrong and cause two-thirds of the motorcar accidents? If it doesn't why should it be made the goat so generally?

Yet here we are scaring our motor friends into the belief that they can never tell when the steering gear will go wrong, giving the manufacturer a black eye, and shirking our own responsibilities. But between you and me the thing is getting to be a joke, because when we blame the steering gear as the cause of our accident, people are likely to glance at one another sideways and give a knowing wink. And they are the fellows who watch their steering gears and inspect them carefully. Then again they watch their driving more and do not turn the wheel wrong when the steering gear is doing its work properly. Hence it is easily seen why some of us are willing to blame the steering gear—in other words, to pass the buck.

Keep Joints Well Greased.

To keep the steering gear operating properly, it is merely necessary to keep the joints well packed with grease, or graphite and grease mixed half and half. The housing which holds the reduction gears at the bottom of the steering column should be packed with grease at least three times a year. The ball joints at one end of the drag link must be kept greased because the lubricant leaks away from them rapidly, no cover being provided. These require frequent attention.

The ends of the tie rods are usually fitted with bolts and these, too, must be kept well greased. The steering knuckle pins also need regular attention. Always keep in mind that the various steering units are always in constant motion, that every vibration produces motion in the steering column. Thus the need for lubrication is very evident.

Cause of Hard Steering.

Does your car steer hard? Then here is the reason: The knuckle pins, or king pins, have become dry, resulting in a certain amount of binding. Hard steering is the result. Oil these every day, or every two weeks if graphite is used.

Don't adjust the steering system to compensate for wear unless you are positive of the location of the trouble. If wear occurs in the knuckle pins, it is useless to compensate for it by adjusting the steering gears. If the drag link is bent it naturally must be straightened, for this causes stiff steering. There is an adjustment nut to take up wear in the reduction gears, and this is right above the gear housing at the bottom of the steering post.

Your instruction book will illustrate exactly what parts are included in the steering gear of your particular car. Study it and proceed according to its advice.

Duty of All Owners to Keep Bolts Tight

Every automobile owner should apply a wrench to every important nut and bolt on his car at least once a month. Nuts held by cotter pins may be ignored, but those held by loose washers should be tried with a wrench. A loose part may easily wreck a motor car and cause loss of life.

Many sermons are preached at the motorist on the subject of proper lubrication. There is one part of the car that should be kept properly lubricated regardless of what may happen. This is the steering column. This unit is most vital of all to the safety of the driver and the passengers. It is more than important—it is essential—that the steering gear be kept properly oiled all the time.

Modern Way of Carrying Live Stock to Market



Here's the way the modern English farmer carries live stock to market. This is a motorcycle with the customary sidecar removed and replaced with a crated pen.

How Stone Bruise Will Affect Automobile Tire

As a matter of fact, the term "stone bruise" is a mere figure of speech and should not be taken too literally. Tire people use the term perhaps too freely in referring to all those injuries that occur upon the surface of the casing and do the real damage to the inner part of the carcass. Rupture by shock would be a far better term and probably would be far better understood in all sections of the country. A "stone bruise," or rupture by shock can be caused by the tire hitting a stone or other obstruction in the road when traveling at a fair rate of speed. Or it may be caused by the casing coming in more or less violent contact with a garage door, a railroad track, a rut, or, in fact, any one of a thousand objects with which our roads are littered, either by the action of nature or by the intent or the carelessness of man. How often have you seen a man place a stone behind the rear wheel of a car stalled upon a hill until he could make his motor behave or until he could effect a temporary repair. However, when he started off he could not take the stone with him nor could he run back and kick it aside. The stone is left there to bump the tire of the following car.—H. W. Slauson, in *Leslie's*.

The DAIRY

CREAM AND MILK OF SUPERIOR QUALITY

(Prepared by the United States Department of Agriculture.)

Because cream is sold in smaller quantities than milk is no reason why less care should be given by inspectors in insuring a safe supply of good quality, says the United States Department of Agriculture. It is just as desirable for cream to come from tuberculin-tested cows or be properly pasteurized, or both, as that milk should. Heavy cream for whipping purposes is often sold raw and its quality should be above suspicion. Cream from old or returned milk of poor quality is not desirable.

All cities need carefully defined grades for cream, according to the department, with a fixed minimum for light, table, or coffee cream, which is the usual cream of commerce. The federal standard for cream which goes into interstate or foreign commerce is 18 per cent butterfat, and in different cities it varies usually from 18 to 20 per cent. Sometimes what is known as "double cream" is sold, and when that term is used the cream should contain twice as much fat as is required in ordinary cream, usually from 36 to 40 per cent of butterfat. "Whipping cream" may contain less butterfat than "double cream," but, according to a ruling by the bureau of chemistry, cream thus labeled, if shipped, interstate, must contain at least 30 per cent butterfat.

Feeding Will Regulate

Quantity of Milk Flow

The question of the richness of the milk has received much attention by experiment stations in this country and in Europe, and the evidence is conclusive that the fat percentage of the milk cannot be changed permanently by any method of feeding. Certain experiments have shown that sudden changes in the ration, for example, greatly increasing the protein or oil content of the ration, may result in a small fat increase for a few days with some cows, with others no effect is produced. In any case the results are only temporary. No ration or method of feeding has been found by means of which a Shorthorn or Holstein can be made to give milk as rich as that of a Jersey or Guernsey.

However, the feed and management does not have a marked influence on the quantity of milk produced by the cow. The amount of milk a cow produces depends upon the ability of the cow to convert feed into milk and butterfat and upon the feed and care a cow receives. No cow can be made to produce milk above her capacity, no matter what kind of feed she gets nor how much.

Calf Feed Important

Experience has taught the importance of feeding the calf milk of uniform temperature from day to day. Best results are obtained when this temperature is kept between 80 and 100 degrees Fahrenheit. A young calf should not be fed milk that has started to sour. The pail should be thoroughly cleansed after each feeding in the winter time as well as during the summer season.

Clipping for Cleaner Milk

The production of clean milk is made easier by clipping the cow's udder and the tail from the switch up. This will prevent particles of dirt heavily infected with bacteria from dropping into the pail. Another practice that will aid in keeping the milk clean is washing the udder with a moist cloth and drying it thoroughly before starting to milk.

Dairy Hints

Screen milkhouse.

Cool cream down immediately and keep cool until sold.

Place a salt box in the pasture and keep salt before the cows constantly.

Observe new pastures and plan to seed the poor grass spaces next year.

Cream separators and other dairy utensils should always be cleaned properly immediately after use.

All utensils which come in contact with milk and cream should be kept clean at all times.

Milk pails and other utensils should be free so far as is possible from crevices where dirt may lodge and be hard to remove.

The milker should always milk with clean, dry hands. It is a filthy habit, to say the least, to milk with wet hands, and it is a mistaken idea that milking with wet hands makes milking easier.

Cleanliness in milking should be exercised at all times. Before milking begins, the cow's udder and flanks should be wiped off, preferably with a damp cloth, in order to prevent particles of straw or loose hair getting into the pail.

ORCHARD CLEANINGS

SAN JOSE SCALE IS MOST SERIOUS PEST

In the minds of the fruit grower the San Jose scale is one of the most serious pests he has to deal with, and during the past three or four years it has been on the increase to such an extent that it threatens to become a serious menace to the fruit industry, unless stringent measures are used to combat it.

A conference for the study of the scale was held at Vincennes, composed of A. J. Ackerman, entomologist of Bentonville, Ark.; B. A. Porter, entomologist stationed at Vincennes; W. P. Flint, entomologist from Illinois, and J. J. Davis, entomologist of the Purdue experiment station. From the results of past experiments it was found that lime-sulphur failed to kill a large per cent of the scale. Something more effective has to be used.

The recommendation made at this conference was that oil sprays be used when the trees were in the dormant state. The sprays found effective were the miscible oils and boiled lubricating oil emulsion. Various miscible oils are advertised in the horticultural publications. These must be used at the strength recommended by the manufacturers.

The boiled lubricating oil emulsion is made from the formula as recommended by the United States Department of Agriculture and is as follows: Diamond paraffin oil, 1 gallon; liquid potash fish oil soap, 1 pound; water ½ gallon.

This constitutes the stock solution. A spray solution containing from 2 to 3 per cent of oil was recommended, depending upon the seriousness of the infection. A 2 per cent solution is made by adding 1½ gallons of the stock solution to a 50-gallon barrel of spray, and a 3 per cent solution is made by adding 2½ gallons of the stock emulsion.

Those interested in the details of making this stock emulsion should write the Purdue experiment station, Lafayette, Ind. Those using only a small amount of the emulsion during the season, say three or four barrels, will probably find it to their advantage to purchase the material ready prepared, due to the fact that it takes some special equipment to make it. It is necessary to pump this material with a force pump while it is very hot, which is exceedingly hard on the pump unless it is equipped with metal valves and special packing. Leather packing and valves burn out in a very short time. Manufacturers who make the material in large lots can buy the raw material at a decided advantage.

Oil emulsion is recommended only as an insecticide, and is not a fungicide. It will not control peach leaf curl, and the usual fungicide has to be applied for curl. Lime-sulphur is generally used for this and should be applied in advance of the oil spray, as it will penetrate the crevices better than if applied after the oil.

This oil emulsion has several distinct advantages over lime-sulphur. It has been proven more effective, it is more pleasant to use, as it does not injure the eyes or skin of the operator, it does not corrode the pump, but makes it work perfectly, the cost is less than one-half that of lime-sulphur. The stock solution will last all season if not allowed to freeze.

Fruit growers generally are very enthusiastic over this new spray. Experiments the past season indicate that this material can be used as a summer spray to kill aphids and hatching scale.

Thinning of Peach Crop Essential to Success

The thinning of the peach crop is one of the essentials to success that is too often neglected. Just as soon as the June drop is over, and before the pits have time to harden, is the best time to thin. Go over all over-loaded trees and thin out the peaches, leaving them not less than six inches apart. Take each branch and thin it down to what it will carry without being overtaxed, and soon no two peaches will crowd together. There is very little danger of overdoing the thinning, because when the average grower sees the ground covered with peaches he gets the idea that he is pulling off too many, when in most cases it would pay him to pull off a few more. By thinning you save the vitality of the tree and give it a better chance to form fruit buds for the following season. And when the crop matures you will harvest as many bushels, if not more, of large, well-developed peaches, than could be produced by the unthinned tree, overloaded with small, inferior fruit. The higher price on the market, and the reputation for producing large, first-class fruit will more than pay for your extra effort.

Strawberry Varieties

There are a great many good varieties of strawberries on the market, but only a rather limited number that can be expected to do well under a wide variation of conditions and soils. The Senator Dunlap and Aroma, both self-fertile varieties, are among the very best for farm garden planting. The Dunlap is a vigorous grower and an exceptionally good plant producer. It is not well adapted for shipping purposes. The Aroma does well on this clay soils.