

PRACTICAL QUESTIONS ON FARM MANAGEMENT.

by

L. A. DOANE.

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PRACTICAL QUESTIONS ON FARM MANAGEMENT.

The study of Farm Management having been introduced into the agricultural course of the Kansas State Agricultural College, it was decided by Professor TenEyck who has this branch of study in charge, that some of the methods of farm management employed by the farmers over the state, and by the farmers of other states might be studied with advantage, providing that the plan of the methods employed could be secured. With this object in view the names of prominent farmers were sought and procured, both in this state and in other states. The 1904 class in this subject, acting with the professor, then made up a list of questions which were submitted to the farmers for answer.

This list of questions was sent to nearly two-hundred farmers with a letter explaining the purpose of the investigation, and requesting careful and concise answers. As a result, in the neighborhood of fifty of the men addressed, answered the questions more or less fully. I was appointed by Professor TenEyck to work up the data secured and I have sought to put the answers into a form so that their contents may be noted easily. Such answers should be of value and interest to farmers generally, as showing the methods whereby some men out of the many engaged in agriculture throughout the United States, have carried on their farming business successfully, and by

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successfully I mean profitably. Below is given in a condensed form, the answers received from three states, Kansas, Wisconsin and North Dakota. For convenience the question is stated each time, followed by the answers and the data has been grouped by states.

#### QUESTIONS AND ANSWERS IN FARM MANAGEMENT.

Answers given by Kansas farmers.

1. What line of farming are you engaged in?

Ans.-Thirteen stock, fourteen general, one grain.

J. M. Moody.- Seed growing and stock raising.

John Thrall.- Raising seed corn, pop corn, beans and potatoes.

Three who said that they were engaged in mixed farming, also stated that they were feeding all of their produce to stock raised, so that this would practically be stock raising too.

2. Do you take an inventory of your property each year, so that you may know the value of your investment and your annual profit or loss?

Ans.- Twelve, no; sixteen, yes.

3. Do you keep a careful account of all business transactions?

Ans.- Six, no; twenty-three, yes.

J. P. Wood.-Only as cash is involved.

4. Do you keep daily records?

Ans.-Twenty-four, no; four, yes.

Two different men had started to use them but had given them up.

John Thrall.- Write up records carefully each day.

J. A. Showalter.- Not any more than what is paid for.

5. Do you keep account with each field or crop and with each department of the farming business?

Ans.- Twenty-two, No; seven, yes.

C. W. Taylor.- Keep accounts with each department but not with each field.

E. L. Cottrell.- I could not possibly do it.

6. Describe your system of keeping accounts.

Ans.- Mr. Reichenberger, who says no, to question five, says he keeps day book and ledger accounts.

A. J. Potterf-I know how many acres are in each field and also know yield and cost of labor in each and can easily compute profit or loss.

C. W. Taylor.- I have cut my system of keeping accounts so that it takes the least possible time. My check book <sup>keeps</sup> my bank account and I do not keep any cash account. All the men I know who are running large farms and keep an accurate set of books, are failures as farmers.

E. L. Cottrell.- I keep four different accounts, hogs, horses, cattle and one for general farm expenses, close my books at end of each year after taking invoice.

Thos. Potter.- I pay out all funds by check and make record of transaction on stub, then copy this in day-book.

J. M. Moody.- I keep account of all expenses incurred, also of all the money taken and at the end of each year balance accounts.

Edward M. Hall.- I keep personal accounts like a ledger account, with explanations.

J. A. Showalter.- I have two books, day-book and ledger. In the day-book goes everything, all business transactions, time of seeding,

etc., then I check out to my ledger what I want to sum up.

Unsigned.- Have not yet established a fixed method of keeping accounts. Have used a day-book and journal (combined) and ledger. Keep accounts (partly so) with live stock, dairy produce, poultry and eggs, fruit and vegetables, grain, cash, expense, personal accounts, loss and gain. (double entry).

J. P. Wood.- Impossible.

D. G. Gage.- All accounts are lumped in the general ledger.

E. E. Chase.- I have no system, as yet few accounts.

C. W. Shull.- Thus far I have just kept a day-book from which I make up special accounts as I wish them.

J. B. Harman.- I keep a cash book and a ledger account with some. I record a cash deal in this way:

To	McLoad	7 hogs,	av. 250 pounds @ 5¢	\$87.50
By	Fariae	2 cows	① \$35.00	70.00

J. W. Waldraven.- My method of keeping accounts is simply a set of three books. One for daily record and work book; one for business accounts; (do not follow intricate rules of book-keeping-) and one for ledger accounts.

P. K. Symms.- Detailed itemized accounts with date in book and a complete file of bills and receipts.

A. L. Noyes.- I itemize all sales, also all money paid to hired men with the dates. I also take down the date when each mare is bred and state to what horse or jack as the case may be. Any farther questions that may come up, I can generally answer from these dates and from memory, my check book also helps.

W. R. Correll.- I do all business through the bank. Pay all labor, notes, etc., by checks. Check answers for receipts. Keep

a rough farm day-book and copy into ledger only after a series of business transactions. Do not have any regular time to transfer accounts.

George Doll.- My books I keep are day-books and large and small ledgers. The accounts opened are, wheat, corn, oats, Kafir-corn, horses, cattle, hogs, implements, repairs, etc.

7. Do you prefer married or single men as farm hands?

Ans.- Thirteen, single; eight, married. Two had their own boys; one had no preference.

N. Rhodes.- Have had no experience with married men, single men are very unsatisfactory.

J. A. Showatter.- My experience teaches me that a single man makes the best farm hand, as the married men who hire out on the farm have very little ingenuity, get up, etc., or they would not be hiring out.

J. A. McKenzie.- I think single men better workers, married men more steady.

8. What is your method of handling hired help?

Ans. G. F. Wagner.-If possible treat them as members of my family and expect them to do accordingly.

John Thral. - Of recent years have worked in field ten hours and done chores outside of this time.

A. J. Pottorf.- I work with hired men and can judge when he has done a day's work, treat him like a white man, pay him good wages and that promptly.

A. M. Reichenberger.- I pay good wages, treat them kindly and have no trouble with them.

E. L. Cottrell.- Treat them as I would have an employer treat me and turn them off ~~as~~ soon as I can get along without them if they do not appreciate my treatment of them, otherwise keep them as long as they will stay.

E. M. Hall.- "Feed them well and work them well."

J. P. Wood.- Usually treat them as one of us.

C. J. Reid.- If a single man, take him into the family and make his stay as comfortable as possible and expect him to do the heavier part of the work, pay him by the month. If married man, pay him by the day and he boards at home.

J. B. Harman.- Treat them as you would like to be treated under like circumstances and if they abuse your confidence, discharge them as soon as you can do better.

P. K. Symms.- Good pay, expect careful thorough work for reasonable time, and make him feel at home.

A. L. Noyes.- At present time I have a contract with a man for a year. He is to give me practically all of his time, I furnish him house and graden spot, he boards himself, I oversee the work personally whenever I can. To suppliment my regular work I sometimes hire boys by the day or month.

W. A. Coe.- Have not hired much help yet.

W. R. Correll.- Treat him ~~as~~ near like one of the family as he will permit. Require ten hours work and no more with team, keep the same team, harness and man together the summer through as near as I can, each man has charge of his own team, use riding tools when possible. Have never had definite time to pay help except on contract jobs. Pay when demanded.

9. What is your method of handling and caring for farm machinery?

Ans.- Fourteen said they had sheds.

E. L. Cottrell.- I have no method up to date, but try to keep everything repaired before time to use it. Have my black-smithing done in winter time when the black-smith is not busy, get better work done and think I get it done cheaper.

C. W. Taylor.- I always get implements repaired as soon as through using them, oil well and put in shed.

J. A. Showatter.- Keep sheltered if possible, but more important than that "know the machine", and repair in winter, never attempt to use a machine not in shape or on the point of breaking down.

Unsigned.- Aim to put machinery in shelter when through using (repair if necessary, before putting away.)

J. P. Wood.- When not in use I like wooden parts in sheds and keep the mold boards of my plows greased with a mixture of some kind of paint and machine oil so that they will not rust.

C. W. Shull.- Generally speaking I will say that our dry climate does not appreciably deteriorate machinery standing out during months it is not in use. Most of the machinery used here is not housed. My plan is to house the most delicate iron parts of the machinery and practically all wooden parts.

L. W. Waldraven.- It is our custom to make a machine do its required work with proper treatment. Such implements as plows and disks, I always give a thorough application of axle grease. We keep a well equipped black-smith and repair shop on the farm and keep the machinery in good order. I believe in keeping machinery well oiled and cleaned, I put my expensive machinery in the shed the day I finish.

P. K. Symms.- Keep in repair while in use, shelter while idle, when season is over clean up and repair, oil and store ready to begin next season's work.

W. R. Correll.- Use best oil obtainable, keep all bearings tight. Aim to keep under sheds, paint shovels, plows, listers, etc., when put away.

10. What per cent do you allow each year for the depreciation in value of farm machinery?

Ans.- Nine, 10 per cent; five, 15 per cent; one, 20 per cent; one from 25 to 33 per cent.

C. W. Taylor.- I estimate each piece of machinery when I invoice. It depends upon the party who uses the machine. Some men will use a machine five years, and others will only use it one.

Edwin Taylor.- Do not be afraid to send the machine to the scrap pile, it is cheaper to buy new machinery than to repair.

11. Do you practice a definite system of crop rotation? What is your plan?

Ans. Fifteen, no; seven, yes.

C. W. Shull.- No, not to any extent but speaking from observation will say that barley generally follows sorghum, Kafir-corn or corn. Our Our most progressive people here are adopting the Campbell system.

L. W. Waldraven.- We have always practiced crop rotation thus far, we raise three crops principally corn, oats, wheat and rye. We leave stalks standing in the field and the following year plow and sow to oats. In the fall plow oat stubble for wheat. Corn two years oats one year and wheat or rye one year.

W. H. Rhodes.- What I have in corn this year I put in oats and other small grains next year.

A. J. Pottorf.- I do. Corn stalk ground is sown to oats, the oat stubble is plowed in the summer and sown to wheat in the fall, the wheat stubble is mowed if noxious weeds are plentiful and if not the mower is not used. The following spring this ground is listed to corn. This is the way we raise our biggest corn. A field treated in this way will make sixty bushels per acre this year.

A. M. Reichenberger.- Corn land followed by oats and wheat, aiming to run ground to oats one year, and about three years to oats and corn.

J. A. McKenzie.- No. Consider alfalfa a long rotation, eight to twelve years the best for this section, or alfalfa four to six years, then a period of cultivated crops.

Frank B. Buchli.- I practice crop rotation with a view of preserving and enriching the soil and getting best crops.

12. Do you feed the crop on the farm, or remove them from the farm?

Ans.- Nine, do both; sixteen, feed all crops; two, sell nearly all crops.

J. M. Moody.- I sell my own crops of corn for seed but buy feed the same amount as was on the farm.

E. M. Hall.- Remove grain and hay and sell, but plow down the stalks, never burn trash or weeds.

A. J. Pottorf.- If grain is high and I do not think it will pay to feed, grain and stock are both sold, but if grain is cheap I feed at home.

13. What is your method of saving and handling manure?

Ans.- Two, no method.

Unsigned.- Clean stables out and haul manure to the fields.

Clean out feed lots in the spring.

J. P. Wood.- I haul from the stables and spread on wheat ground when possible and haul from lots and spread on wheat when I can.

C. J. Reid.- All manure made in stables and sheds and open lots is hauled out as soon as made and immediately applied to the land. In winter the manure is applied to the corn stubble for succeeding crops but the aim is to save and use all the manure.

E. E. Chase.- The manure from cow lot is scraped up and dumped on the land and spread by hand. The manure from the barns is forked on a low wagon and spread by hand.

J. B. Harrison.- Haul to the field as soon as made.

L. W. Waldraven.- We put out manure in heaps and haul it to the fields in the latter part of the winter before seeding time, also the summer manure we haul to the fields after harvest. Last spring I scattered thirty loads on an eight acre field which I think has been neglected in fertilizing for about ten years. The rank growth of weeds that usually follow harvest we turn under green at times.

P. K. Symms.- Manure is removed from stock barns, feed racks and decayed straw stacks and scattered at present on corn and pasture lands.

A. L. Noyes.- I allow the manure to accumulate in the corral until I get time to haul it onto the land unless it is liable to get too muddy, when I scrape it together with the road scraper until I can haul it.

W. B. Correll.- I have no method I am sorry to say. I expect to have a manure scraper as soon as I can get fixed for it and will use all the manure I can scrape up.

J. A. McKenzie.- Spread it as made. Thin on the ground and frequently.

A. L. Cottrell.- Haul as soon as made.

14. What kind or quality of horses do you find profitable to keep for work?

Ans.- One, good; two, mules; one, plugs; four Percherons.

A. J. Showatter.- It takes good horses to do good work. A well made horse will keep easier and work better. I want my horses to weigh not less than twelve hundred, the heavier the better up to fifteen or sixteen hundred. I have three mares and let them raise good draft colts.

Unsigned.- Would like to have good blocky horses for farm work, weighing about twelve hundred and fifty to thirteen hundred, of Percheron breed; and light horses (part road stock) weighing about eleven hundred, for use on road, going to market, etc., for light work on farm if necessary.

J. P. Wood.- Usually brood mares of best quality I can raise.

C. J. Reid.- A medium weight horse of active disposition, such as are produced by standard bred sires of good sizes, bred to grade mares. This makes an excellent farm horse in my opinion. They are intelligent, active and have good staying qualities.

E. E. Chase.- For my part I would rather have good mules. If a man has or prefers horses I should have medium weight. I have never seen heavy horses who could stand the heat and work well.

C. W. Shull.- High grade Percheron horses. Have also used mules with great satisfaction as they are always willing to work.

L. W. Waldraven.- We keep horses weighing about twelve to fourteen hundred, we have had good success with Norman and English Grade shires of this weight.

P. K. Symms.- A cross of Coach and Normans a light pony, and a driving team.

A. L. Noyes.- I find Percheron breed very good for farm work. I like to keep at least one horse of some other breed for a driver.

W. A. Coe.- Medium weight draft horses.

W. R. Correll.- I prefer good grade Percheron horses, not smaller than one thousand for work and large German coach horse for driving and for sale.

G. F. Wagner.- Good active horses weighing from eleven to fourteen hundred pounds.

Taylor

Edwin.- Horses with big stomachs and short legs.

A. F. Robinson.- I have common brood mares, good plugs and for the last two years have been breeding to McGregor, one-half brother to Cresus.

A. J. Pottorf.- Have Percherons weighing about fourteen hundred. Good walkers and plenty of endurance is very desirable. Horses with poor wind cannot endure the heat when the weeds are growing the best and the sooner such horses can be replaced by sound ones the better off will be the farmer although he has sacrificed some cash to make the change. The best is none too good for the farmer.

A. M. Reichenberger.- Keep light teams for roadsters and heavy ones for farm, average weight thirteen hundred pounds.

C. W. Taylor.- Prefer good mules but have medium sized horses.

E. L. Cottrell.- Have Percheron horses weighing about fourteen hundred, am now crossing on the coach horse.

Geo. Doll.- Horses that came from a cross of heavy domestic stallions and pony mares are the only ones I have had experience with. However, I would prefer horses weighing from twelve to fourteen hundred pounds.

15. Do you buy your work horses or do you raise them?

Ans.- Eighteen, raise them; ten, buy them.

E. M. Hall.- Buy them, at present prices could raise them.

16. What is your method of handling and caring for work horses?

Ans.- One, no method.

M. Moody.- Feed grain in stables and turn them out in the lots at nights if the weather is not too bad.

E. M. Hall.- Stable and feed well in the winter, run in the lot when not in the harness. Turn on the grass summer nights and off in day time. I feed corn and alfalfa hay, occasionally change feed to oats or bran and feed prairie hay or corn fodder when handy. Curry daily and work ten hours.

A. J. Showatter.- When working horses should be fed and cared for but feed is money, arrange for pastures. When off duty in winter let them find much of their own feed in vacant fields, horses are good rustlers. Take great care in starting horses in spring time, easy collars well fitted all the time.

Unsigned.- Give horses good feed three times a day, water before feeding, try to keep them in good flesh but not hog fat. Do not let work horses have much green stuff during planting time (turn them loose in dry lot in evening during same). Let them out to exercise

during winter when they are not being worked.

J. P. Wood.- During work season feed corn. If I have it, feed sheaf oats for roughness and at night let them on grass. When work season is over, extra horses and colts run on wheat and around straw stacks.

C. J. Reid.- I feed liberally of corn and alfalfa hay in summer not so much grain in winter,, water regularly and often in summer, curry and brush well during work seasons, and during the hard work of cultivating clean horses at night by spraying. Turn horses out at nights during summer after grass gets good.

D. G. Page.- Young horses pastured in summer until three years old, then light work with good grain rations. Light work in winter with roughness and small proportion of grain. Young stock grained.

J. B. Harman.- Give them good quality of food and as much variety as I can. Never-over work or over-drive or leave them out in cold without blankets.

L. W. Waldraven.- We have good frame barns for horses, with capacious mangers and feed boxes. We feed for grain, oats exclusively when oats exclusively when we have them and especially during the hot working season. We feed alfalfa and oat straw as we have no prairie hay, although I prefer prairie hay. We do not allow our work horses to graze. Give them all the fresh water they want three times a day when not at work and before and after feeding when working hard. I let my horses out to roll before feeding. I try to keep my teams well groomed and especially do I fit collars and harnesses to the horses. I notice many farm horses suffer from ill fitting harnesses and collars.

P. K. Symms.- Daily grooming with careful feeding with corn and oats, timothy hay and straw for feeding and blue-grass pasture to run on at night, and when idle during pasture season. When idle during the day in winter, turn into sheltered lot to hay, salt and play. Use carefully fitted collars and harnesses, well cleaned and in good order.

A. L. Noyes.- In spring time and all through the busy season I feed them alfalfa and a little corn. If I get short of alfalfa hay in the spring I generally turn my horses on alfalfa meadow at night, if I get short of corn also I find they will work moderately on alfalfa alone. When the prairie grass is good I turn them all out at night except one pony.

W. R. Correll.--Feed three times a day, water before feeding, amount of feed determined by the horse and amount of work done. Run them loose in pasture as much as possible when not at work. I like to feed cane fodder or a little sorghum molasses in winter time. Bathe neck and shoulders in cold water to keep from galling from hard work.

W. H. Rhodes.- Am very careful when I work them hard. I always have them fat and well cared for. Will not allow my horses to ne abused.

A. F. Robinson.- Feed grain according to work, always grain but more when they work harder. Feed plenty of hay and do not drive work horses on the road much during farming season. Give hay at noons, water three times a day, before meals and shelter. in winter.

A. M. Reichenberger.e Give them a ration of ground corn in winter and toward spring, ground corn and oats. Good stable and good fine hay.

C. W. Taylor.- Give kind treatment, regular feeding and regular hours.

E. L. Cottrell.- Keep them well fed and cleaned up and give good treatment. In the winter rough them through with as little grain as possible, but keep them in good flesh, so that when they are put at hard work in the spring they will not fall off in the summer time. We keep them in pasture every minute they are not at work. We feed corn and alfalfa.

F. B. Buchli.- I aim to keep them at work all the time, and do not keep more than I can use. Keep them in good condition by feeding a regular variety.

17. Do you keep well bred stock? Why?

Ans.- Eighteen, yes; three, no.

Unsigned.- Some of my stock are well bred, keep them because they cost not more than poor ones and I think better results are obtained.

C. J. Reid.- Yes, it gives better returns and is more satisfactory in every way than poor stock. One has more pride in pure bred stock and it is more satisfactory considered from this standpoint, if not from any other.

J. B. Harman.- Yes, because it is better pay and more satisfactory when it comes to handling them.

P. K. Symns.- Yes, I find it more profitable. Have bought good cows and a fine thoroughbred Herford bull and aim to improve my herd.

18. If you make a specialty of any of the following, describe your system of managing: Dairying, cattle, seed breeding, horses, hogs, sheep, poultry, fruit farm, truck farm.

Ans.- Two said that they had no specialty, eighteen made no answer.

J. M. Moody.- We make seed corn a specialty, select one or two good varieties, plant early and cultivate thoroughly to bring best results. Hog raising is also one of my specialties. I select a good family and line breed but do not in breed. In selecting my breeding stock I select on merits and not altogether on markings, raise two litters each year.

D. G. Page.- Short horns sold as yearlings or later for breeding purposes. Berkshires sold as pigs or later for breeding.

C. W. Shull.- In connection with a business partner I am milking cows and selling separator cream and butter. Most of the cows are high grade milk strain of Shorthorn, and they are bred to an excellent Galloway which means dehorned black calves, strong in constitution and satisfactory to cattle feeders.

J. B. Harman.- In dairying I have had the best results when we weighed the feed and tested the milk, feeding approximately a balanced ration. I have had best results with Poland China hogs, by observing good sanitary conditions and feeding as great a variety as possible and by using the Moors dipping vat and hog remedy.

W. R. Correll.- I keep seventeen cows to milk, raise calves by hand and have been buying enough calves to put with what I raise and feed all winter. I raise all the pigs I can to run after cattle when feeding and have eighteen brood sows at present.

19. What is your method of keeping accounts with the farm household?

Ans.- Sixteen have no methods; five made no answer.

J. M. Moody.- By keeping expense account with household, also account of produce sold, balancing accounts at end of each year.

Unsigned.- Items that enter into my household accounts are groceries, etc., in the end these are to be carried to Expense and Cash accounts, etc.

W. A. Coe.- Simply keep a record of the time and price of everything that is bought and sold.

E. M. Hall.- Keep a cash book list of all expenses and personal accounts.

Geo. Doll.- I use the common method of bookkeeping. In the ledger I have opened up accounts thus - groceries, dry goods, household utensils, miscellaneous, luxuries, etc.

20. Was your early training such as to prepare you for keeping careful business accounts?

Ans.- Nineteen, no; seven, yes.

C. Blackler.- Have taken the business course and have seen the need of keeping accounts on the farm.

J. A. McKenzie.- Had some training and some study along that line.

21. Are your children being trained to keep accounts and records of their work and expenditures.

Ans.- Eleven, no; five, yes; others made no answer.

22. Should system in farming and the keeping of crop records and business accounts be emphasized as practicable and profitable on the average farm?

Ans.- Two, no; twelve, yes.

E. M. Hall.- That depends, without any statistics I should say that the average farm is about 160 acres, used as a home by a family.

It would have five horses, thirty cattle and some chickens. Elaborate systems of bookkeeping are not necessary, but simple records of crops, fields, breeding and expenses are both practicable and profitable. The larger the farm the more help used and the more each crop is looked at as an investment, rather than as a necessary stock food supply, the more the necessity for keeping careful farm accounts.

J. A. Showatter.- Yes sir. It is necessary and helps to make farm life pleasant.

J. P. Wood.- It would seem to me to be the most profitable thing some farmers could do.

E. E. Chase.- Yes, I think a certain amount of system in farming and farm records is desirable but I do not believe in anything elaborate.

A. L. Noyes.- I think system in farming is a good thing. The difficulty comes in not being able to carry out any stated plan; the ever varying conditions of weather, together with the unreliable farm help, makes it exceedingly difficult with limited means to carry out any definite system of farm crops. Still I think it well to have a system in mind and carry it out if conditions will allow. In regard to crop records, I do not think they amount to much unless the farming operations are so extensive that one cannot keep the conditions and result in mind. In my own case I should not take the time to hunt up the records of previous years if I had them, so far as making my plans for the present are concerned.. Of course if one wants the facts so as to write about them the records would be needed.

I consider that there are some accounts that it is very necessary to record, such as promisory notes, so far as to know just when the note is due and to whom it is given. Also ones bank account must be

kept, also the account with the hired help. In feeding cattle if one buys his corn he must know how much he is buying so as to know whether he is making or loosing money by feeding. Of course his check book will show this sufficiently if he always gives checks in payment. Theoretically, accurate accounts of farming operations is a good thing. Practically, I like to read and sleep evenings rather than to be recording daily accounts.

Answers from Wisconsin Farmers.

1. What line of farming are you engaged in?

Ans.- Three, mixed; one, fruit; two, dairy; and two, stock.

2. Do you take an inventory of your property each year, so that you may know the value of your investment and your annual profit or loss?

Ans.- Three, no; five, yes.

3. Do you keep careful accounts of all business transactions?

Ans.- Eight, yes.

4. Do you keep daily work records?

Ans.- Seven, no; one, yes.

5. Do you keep accounts with each field or crop and with each department of your farming?

Ans.- Six, no; two, yes.

Geo. Hanchett & Son.- We keep account of what field or crop produce each year, but have not kept account of expense with each field or crop.

W. C. Bradley.- No, with me it would not be practical.

A. B. Hicke.- No, but intend to next year.

6. Describe your system of keeping accounts.

Ans.-

Geo. Hatchett.- Our farm accounts consist only of such accounts as are necessary to determine our debit and credit with those with whom we do business, our expense accounts and sales.

F. G. Frelick.- I leave a page in the record for every crop, herd of dairy cows and account with the merchant, blacksmith, etc.

W. C. Bradley.- I simply keep day book and ledger accounts.

Renk Bros.- Keep three books: No. 1, for expense and receipts, No. 2, for bills payable and bills receivable, and interest. No.3, for record of breeding animals, date of birth, etc.

Geo. C. Hill.- We keep accounts, <sup>with</sup> "Receipts" of Farm Expenses, Hired Help and Household Expenses. In addition to the above, a book is kept with records of daily cream shipments, a service record book, and a book with milk and fat records of individual cows.

F. H. Scribner.- We simply keep account of all receipts and expenditures and balance up each month, but of late years have only kept an accounts of sales from farm, pay all bills by bank checks, but the day book is best.

7. Do you prefer married or single men as farm hands?

Ans.- Three preferred married workmen; four, single; one had never hired any help.

Geo. Hatchett.- It all depends upon the individual, our help is mostly unmarried.

Renk Bros.- Prefer intellectual ambitious single men. As a rule

married men are not first class or they would start out for themselves. Have had but one married man so have had little experience with them.

Geo. C. Hill.- Married men, who board themselves, but always have some single men.

F. H. Scribner.- Married men as a rule, as we find them much steadier.

8. What is your method of handling hired help?

Ans.- Geo. Hatchett.- We simply see that each man does his duty and has proper instructions for performing it, and then insist that he attend to it properly. We pay our men for all over time and charge for all lost time. We never keep our men doing chores after 6:30 P. M., and insist on their giving us their best efforts during working hours.

W. C. Bradley.- I pay the largest wages of anyone in the vicinity and try to get the men to earn their wages but often fail.

F. H. Scribner.- We have a tenant house and hire a married man by the year. We also hire one single man and board him in the family. Our hours are out early in the morning and early in at night, making the chores a part of the day's work. Have chores done and ready for supper at six oclock. We find that we can get more work done in the year in this way.

David Imrie.- We treat them as members of our own family.

A. B. Hiche.- I do most anything to get along with them.

Geo. C. Hill.- We rise at 4:30 A. M. the year through and the work is done at 6 P. M. Endeavor to treat a man as we would wish to be treated in his place.

9. What is your method of handling and caring for farm machinery?

Ans.- Geo. Hatchett.- We overhaul every piece of machinery when we are through with it and order any repairs that seem to be needed when we leave it for the season, and oil wearing parts of plows, cultivators, etc., to prevent rust. We take better care of machinery than most farmers do, and this is not boasting for our machinery is left exposed to weather more than it ought to be.

F. G. Frelick.- Have one big shed for all my machinery of course. Implements are not left out when not in use, I clean all the tools before storing away.

W. C. Bradley.- I depend upon hired help largely to run my machinery, but keep close watch that it is well oiled, nuts kept tight and cutting parts sharp. Keep painted and under cover except when in use.

Renk Bros.- We are a little slack in this respect perhaps. We try to keep machinery housed when not in use though it is not always repaired as soon as we are through using it, to be in readiness for next year.

F. H. Scribner.- All machinery is carefully housed and cleaned the day we are through with it. I am sure that more machines are rusted out, rather than worn out.

David Imrie.- We house it as soon as through with it.

A. B. Hicke.- I am exceedingly careful with all my machinery. My plan is to bring the machine I am using home with me and draw under the shed until I go back to the field again.

Geo. C. Hill.- Nearly every machine is covered or put in the shed every night.

10. What per cent do you allow each year for the depreciation in value of farm machinery?

Ans.- The answers were partly in the nature of estimates and the annual average depreciation allowed was ten to fifteen per cent on first cost.

11. Do you practice a definite system of crop rotation? What is your plan?

Ans.- All do.

Geo. Hanchett.- Yes, always clover before small fruit. In our grain raising our rotation is clover, corn, oats then clover.

Geo. C. Hill.- Our usual rotation is corn on land manured during winter and plowed in the spring. Wheat, clover and oats.

F. C. Frelick.- Yes, my plan is two years clover, with a little timothy; third year, wheat or peas; fourth year, oats; barley or rye, this last cereal is best with us. It affords a better chance for a catch of clover, of course seed down the fourth year.

C. W. Bradley.- Try to have a system of rotation but often get knocked out on account of not getting a stand of clover. We try to have grain, clover and corn. Our pastures are permanent, rough land.

Renk Bros.- As near as we can. Pasture two years, corn one or two years, oats and then seed down again.

F. H. Scribner.- Yes, our rotation is a four year one. One year in corn, one year in grain and seed to timothy and clover. Two years in grass, first year cut for hay, second year use for pasture.

David Imrie.- Yes, hay and pasture, next corn, then oats and seed to clover, a three-year rotation.

A. B. Hicke.- I mean to if the weather will permit; first, mead-

ow, second corn and potatoes; third grain and seed down.

12. Do you feed the crops on the farm, or sell and remove them from the farm?

Ans.- All feed everything except wheat and a good many buy feed besides.

13. What is your method of saving and handling manure?

Ans.- Geo. Hanchett.- During winter we haul to field as soon as made and during summer store in shed.

F. G. Frelick.- I never allow my manure to remain in the yard more than six months. I haul manure every spring and summer and some during the winter months on rye field as top dressing.

W. C. Bradley.- Manure is taken to the field and spread from wagon or sled as fast as made.

Geo. C. Hill.- During the winter drawn to the field each day, and summer manure drawn on pastures at frequent intervals.

Renk Bros.- Haul direct to fields as soon as it accumulates, as much as possible and spread from wagon. (Think the manure spreader is a fine thing).

F. H. Scribner.- All manure is drawn directly to the field from stable and spread upon the pasture land that is to be planted to corn the following season.

David Imrie.- It is hauled directly from the barns in the winter and applied to clover fields. Yards are cleaned up spring and fall.

14. What kind or quality of horses do you find profitable to keep for farm work?

Ans.- Geo. C. Hill.- Twelve to fourteen hundred pound chunks.

Geo. Hanchett.- Good grade Percherons.

F. G. Frelick.- I prefer the draft type of a horse of the smaller breeds. We have lots of red clay here so we must have heavy horses. Drafters are most profitable here but foundation stock is scarce.

W. C. Bailey.- We keep six horses, four of them 1600 pound mares that raise us colts nearly every year, one team 1200 pounds for road work and light farm work.

Renk Bros.- For farm work and not for sale. I prefer the American trotter with as much size as possible. They are handy at turning, stand the heat and do not tire as easy in loose footing (as spring work) Should weigh from 1200 to 1400 pounds if possible.

F. H. Scribner.- We find that horses weighing 1400 pounds, well put up, the most profitable as they are suitable for road work as well as for farm work.

David Imrie.- High grade Percherons weighing from 1400 to 1700 pounds.

A. B. Hicke.- I use ordinary farm stock valued from \$100.00 to \$150.00.

15. Do you buy your work horses or do you raise them?

Ans.- Five, raise them; two, buy; one does both.

Geo. Hanchett.- Have bought most of them, will raise in the future.

F. G. Frelick.- We have raised ours but will have to abandon it because we do not have the mares of weight, substance and quality. We must buy more good draft mares.

Renk Bros.- Raise most of them and buy some on speculation, mostly good draft colts.

16. What is your method of handling and caring for your work horses?

Ans.- F. G. Frelick.- The care our horses get is this as regards feeding: Water first thing in the morning, feed hay while they are being curried, after this they are given their grain. The heaviest feed is given at night. I keep them shod in front the year round, and reshoe every four to six weeks.

Renk Bros.- Give all the water they want when unhitched from the field if not too warm, (which is rarely the case). Let stand twenty to thirty minutes and eat hay, then feed grain. Nights we turn out on good clover pasture and get them up in the morning. Usually they are on hands for breakfast without going out after them. This keeps the horses clean and healthy both body and feet. Give the horse the heaviest grain feed at night also hay. No hay during the day except a few minutes at noon, and you will never have a heavy horse. Grind feed for horses when working very hard, give a little oil meal and corn night and morning with oats for variety. (One or two table-spoonfulls of oil meal and four to six ears of corn at a feed.)

F. H. Scribner.- Horses like men must be used in reasonable hours. I can accomplish more in eight hours with a team that has some snap, than my neighbors who drag along twelve to fourteen hours a day. The horses are fed the first thing in the morning, usually four quarts of oats and what hay they will clean up, and the same noon and night.

David Imrie.- They are fed clover hay night and morning and oats three times a day with a little corn in winter. When not at work they are turned out to pasture, and groomed night and morning.

A. B. Hicke.- Water first thing in the morning, then feed hay and grain, also follow same plan noon and evening. I do not water in

middle of forenoon. In winter when I do not work horses, I feed a good deal of fodder corn.

17. Do you keep well bred stock? Why?

Ans.- One, no; seven, yes.

Geo. C. Hill.- Yes, greater profit and greater pleasure.

F. G. Frelick.- We do not keep well bred stock but I have learned the advantage of better breeding at Madison, Wisconsin where I took the short course in Agriculture.

W. S. Bradley (Breeder of pure-bred hogs).- Yes, because I like them better than scrubs or grades. I am not sure that there is any more money in them for me than in grades for they take so much work in keeping up records, keeping them apart, tagging and marking them, crating and delivering them one at a time, advertising, etc. But I like it and keep at it.

18. If you make a specialty of any of the following, describe your system of managing: Dairying, cattle, seed breeding, horses, hogs, sheep, poultry, fruit farm, truck farm.

Ans.- Geo. Hanchett.- We make a specialty of small fruits devoting fifty acres to their culture. Our stock farm is carried on principally as a means of supplying fertilizers to small fruit farms or we prefer to buy bran and feed milch cows to buying fertilizer. We aim to have soil well supplied with humus before planting and find clover most satisfactory for this. We raise our own plants for setting, from plants selected for their vigor and fruitfulness. I give thorough cultivation and winter covering. Employ only reliable help. The harvest is a critical time and requires well regulated systematic help.

work. One overseer has general charge of the packing force and has as many assistants as the size of the crew requires. Each picker has a number and each row picked has this number placed at the end so that the overseer can examine it as opportunity offers, and know who is responsible for the thoroughness of the work. Picker accounts are kept by means of tally cards.

It is also necessary to keep in touch with all markets within reach by wire at this time as systematic distribution is very necessary to avoid overloading the market.

F. G. Frelick.- Dairying is our specialty, we practice partial soiling in summer and begin feeding green corn from September until the crop is ready for harvesting as fodder, milk is worked into cheese. We sow oats and peas for soiling.

Renk Bros.- Sheep. In the fall of the year we try to have our sheep in very good condition. Usually have some rape for them to feed upon. We think that rape is the cheapest feed for sheep there is. If in good condition for two reasons they winter better and keep healthier, and if gaining quite rapidly just before breeding time we expect a larger per cent of twins. We are very particular in selecting sires to secure the best, as the sire is half of the entire flock. Have paid as high as \$50.00, \$80.00 and \$100.00 for our rams. We usually divide our breeding sheep into two or three flocks at breeding time so as to breed about seventy-five head to a ram. Usually turn the best rams in only an hour every day. This makes it easier on the ram than if allowed to run with the flock, the ewes get in lamb just as fast. We feed out rams a little oats twice a day.

During the winter we like to have our sheep take lots of exer-

cise so have a large yard for them to run in. Arrange to have feed at each end of the lot so they will run back and forth as much as possible. Keep good water and salt before them at all times. We like to feed large quantities of roughage and hardly any corn. Feed some oats and bran and silage as lambing time approaches. Good clover hay makes a balanced ration for feeding ewes in fore part of winter. Later on, feed a little grain with it. Most of our lambs drop in <sup>time</sup> March so by the spring begins the lambing season is over. Early lambs make larger lambs to show and sell.

We like to keep our sheep in small flocks and change pasture often. Usually fatten our lambs on rape and ship them to Chicago, that is, what are not kept for breeding purposes.

David Emrie.- Care of horses. Brood mares are worked lightly up to foaling time and some while colts are suckling but not much. Cattle. We milk some cows and calves suck some, we are not dairying. Feed steers winters, in yard and barn. Hogs. We raise for pork, also breeding stock. As to our method of care and feeding, you will find it described very fully in our next Farmers' Institute Bulletin.

F. H. Scribner.- Dairying is our specialty, keep the pure bred Jerseys, get the best sires I can find and keep calves from best cows, and the way we find out best cows is to weigh milk every day in year and apply the Babcock test. Feed liberally of silage every day in year and discard the unprofitable cows.

Geo. C. Hill.- We have a contract for cream in Milwaukee to a wholesale dealer, who takes what we have be it little or much.

Cows fresh at all seasons of the year, except June to September 1st. Silage, clover hay and bran form the bulk of their feed in

winter and bran, silage and pasture in summer. We aim to have a piece of red clover and timothy for pasture in addition to the permanent blue-grass and white clover pasture.

19. What is your method of keeping accounts with farm household?

Ans.- W. C. Bradley.- Give my wife all the money she wants and charge to expense account.

Geo. C. Hill.- Keep a record of all money expended for household but keep no record of what we use from farm and garden, except milk.

Renk Bros.- Book everything that is paid out or taken in.

David Imrie.- Keep account of only our grocery and butchers bills.

A. B. Hicke.- We use the double entry system.

20. Was your early training such as to prepare you for keeping careful business accounts?

Ans.- Four, no; two, yes.

A. B. Hicke.- Not at home, but I took a course in bookkeeping while at College.

21. Are your children being trained to keep records and accounts of their work and expenditures?

Ans.- One, no.

W. C. Bradley.- Not yet but will be later.

Renk Bros.- Have no children.

22.- Should system in farming and the keeping of crop records and business accounts be emphasized as practical and profitable on the average farm?

Ans.- Four, yes.

F. G. Frelick.- Yes, it may be profitable if it does not involve too much work, but keeping accounts in a simple order will prove instructive in later years.

Geo. Hanchett.- Most emphatically, yes.

Renk Bros.- Yes, by all means.

Geo. C. Hill.- My opinion is that it would not pay to keep a full set of books, or accounts with fields, except occasionally.

Answers from Dakota Farmers.

1. What line of farming are you engaged in?

Ans.- One, stock raising; two, general.

Preston Farm Co.- We are engaged in farming over four thousand acres, our principle crop is wheat, but we raise corn, oats, millet, and potatoes, and we keep a lot of pigs, besides two or three hundred head of steers.

Lewis Pond.- Diversified farming, bearing in mind that pure seed and careful plowing of the land are essentials that cannot be slighted if a fair crop is desired, that scrub seed and scrub stock make scrub farming.

2. Do you take the inventory of your property each year so that you may know the value of your investment and your annual profit or loss?

Ans.- Four, yes.

3. Do you keep careful account of all business accounts?

Ans.- Three, yes.

4. Do you keep daily work records?

Ans.- One, no; two, yes.

5. Do you keep account with each field or crop and with each department of your farming business?

Ans.- One, Yes.

Preston Farming Co.- We keep accounts with departments of our farming business and with crops but not with feed.

6. Describe your system of keeping farm accounts?

Ans.+ Massingham & Cosgrove.- Double entry bookkeeping.

Gould Farm.- I keep a ten column journal ledger and time book.

7. Do you prefer married or single men as farm hands?

Ans.- One preferred single men.

Lewis Pond.- Farm hands are worst drawback, they are hard to get and harder to keep.

Gould Farm.- Single men. Married men should have farms of their own.

8. What is your method handling hired help?

Massingham & Cosgrove.- Strict rules for rising and regular hours for work.

Lewis Pond.- Following the teachings of the "Golden Rule".

The Gould Farm.- Hire them for fair wages, treat them as men, bind them to no contracts, and expect a reasonable amount of work in return.

9. What is your method of handling and caring for farm machinery?

Ans.- Preston Farming Co.- All farm machinery is housed in a good machinery hall, except at the time it is used and a few days previous to that time while we are putting it in order.

10. What per cent do you allow each year for the depreciation in value of farm machinery?

Ans.- Two, ten per cent; one, fifteen per cent.

11. Do you practice a definite system of crop rotation? What is your plan?

Ans.- Preston Farming Co.- We cannot practice a definite system of crop rotation, but have three crops of wheat, then usually seed to barley or oats then to timothy and run that for two crops of hay and one of pasture, then we break it up again and start in with wheat, oats or barley, then we put the land in to corn, potatoes or millet, and the following year return to wheat again.

12. Do you feed the crops on the farm, or sell and remove them from the farm?

Ans.- Two, feed; two, both.

13. What is your method of saving and handling manure?

Ans.- Massingham & Cosgrove.- Take everything from correls and stables direct to fields and spread the same from wagons.

Lewis Pond.- "The manure pile is the farmer's goldmine" and should be judiciously cared for. Our soil is very rich, but the farm cannot be drawn upon forever without some return being made in the shape of home made fertilizers, mainly for the sake of humus as a conserver of moisture. The live stock are well bedded, the horses and young stock have their stalls cleaned twice a week when the bedding

has absorbed all the liquids. The manure is hauled directly onto the field and evenly distributed, but not too thickly, as it might leave the ground too loose, and the field is seeded to millet for hay. Straw for bedding being plenty the cattle go loose in a part of the barn, 30'X 84', which is cleaned once a month and the manure hauled directly to the field, thus no loss of phosphates or ammonia takes place, and the hauling twice of heavy manure is avoided.

14. What kind or quality of horses do you find profitable to keep for farm work?

Ans.- Massingham & Cosgrove.- Breed large ones, Clydes or Percherons.

Preston Farming Co.- We use French Percheron horses, or rather a good grade of that breed. One-third of our work stock is mules.

15. Do you buy your work horses or do you raise them?

Ans.- Three, raise them; one, buy them.

Lewis Pond.- Raise them and you get kind gentle horses.

16. What is your method of handling and caring for your work horses?

Ans.- Preston Farming Co.- Our work horses occupy one large barn or stable which will accommodate seventy-two head. During summer months they are worked nearly every day; during December, January, February and March they run loose in the barn lot as we have but little to do and one or two teams will do the work in winter.

17. Do you keep well bred stock? Why?

Ans.- Three, yes.

Preston Farming Co.- We keep as much well-bred stock as possible as they are the best and most profitable.

18. If you make a specialty of any of the following, describe your system of managing: Dairying, cattle, seed breeding, horses, hogs, sheep, poultry, nursery, fruit farm, truck farm.

Ans.- Massingham & Cosgrove.- Only registered Herfords.

Lewis Pond.- Live stock should not be unduly exposed, must be kept growing and well fed. A stingy feeder cheats himself.

Gould Farm.- Dairying. We have the Red Polled cattle, keep a separator, sell our cream, raise our calves on skimmed milk, excepting bull calves which run with the cows that raise two to four calves each season, i.e., we buy or put calves from other cows with them, first two suck four months, next two until about two months of fresh time. We do no seed breeding, leave that for the A. C.

Hogs.- We raise the large boned Berkshires, raise two litters annually, have green annual crops for them, such as Canada peas, rape, barley, oats, corn, mangles, etc., keep in separate lots, feed some grain until fattening time or at the age of about seven months when we force them with all the corn, oats, barley and mangles they will eat. Feed all ground feed, dry, with all the fresh water they want before feeding.

We just started in the sheep line with fifty Shropshires. Know very little about them.

We raise the "Farmer's Hen" the Barred Plymouth Rock, breed these straight, change cock every year.

Raise some berries, etc., but none to sell. Also have a fine garden.

19. What is your method of keeping accounts with the farm household?

Ans.- Massingham & Cosgrove.- Keep debit and credit account of every article used.

Gould Farm.- Keep a household account in ledger and charge all domestic help and provisions to that account.

20. Was your early training such as to prepare you for keeping careful business accounts?

Ans.- One, no; one, yes.

21. Are your children being trained to keep records and accounts of their work and expenditures.

Ans.- Gould Farm:- Certainly will be when they are old enough.

22. Should system in farming and the keeping of crop records and business accounts be emphasized as practicable and profitable on the average farm?

Ans.- Three, yes.

Preston Farming Co.- We think that system in farming is as essential as in any other business, and advise all farmers to keep a careful record and a set of books and we believe that a man will find it much more profitable to have system and plan his work than anything else he can do.

The following are the names and addresses of the farmers answering the questions:

- P. K. Symms,                    Atchison, Kansas.
- L. W. Waldraven,            Randolph,            "

John B. Harman, Gill, Kansas.  
 C. W. Shull, Winona, "  
 A. L. Noyes, Wabaunsee, "  
 E. E. Chase, Merriam, "  
 D. G. Page, Manhattan, "  
 C. J. Reid, St. Clere, "  
 John Thralls, Lawrence, " R. R. No.2.  
 J. H. Edwards & Son, Castleton, Kansas.  
 A. H. Buckman, Topeka, Kansas.  
 E. L. Cottrell, Wabaunsee, "  
 C. H. Butler, Frankfort, "  
 Edwin Taylor, Edwardsville, Kansas.  
 A. F. Robinson, Morrill, "  
 A. J. Pottorf, Riley, "  
 Thomas M. Potter, Peabody, "  
 A. M. Reichenberger, Andale, "  
 W. H. Rhodes, Tampa, "  
 A. A. Williams, Lion, "  
 W. A. Coe, Ford, "  
 G. F. Wagner, Enterprise, "  
 C. W. Taylor, Pearl, "  
 W. O. Peterson, Randolph, "  
 Leonard Wingfield, Junction City, "  
 E. E. Ford, Moran, Kansas.  
 John Sessler, Uniontown, "  
 O. B. Haven, Belleville, " R. R. No. 3.  
 E. M. Hall, Milford, "  
 J. M. Moody, Eudora, " R. R. No. 3  
 J. A. Showalter, Halstead, "  
 J. P. Wood, Freeport, "  
  
 F. G. Frelick, Kewaunee, Wisconsin.  
 W. C. Bradley, Hudson, "  
 John P. Buzelet, Eden, "  
 H. J. Renk, Sun Prairie, "  
 Alfred B. Hicken, Waukesha, " R. R. No. 7.  
 Geo. Hanchett & Son, Sparta, "  
 David Imrie, Roberta, "  
 F. H. Scribner, Rosendale, "  
 Geo. C. Hill & Son, " "  
  
 Lewis Pond, Churchs Ferry, North Dakota.  
 Massingham & Cosgrove, Harmon, " "  
 Gould Farm, Buxton, " "  
 Preston Farming Co., Blanchard, " "  
  
 J. L. McDowell, McCammon, Idaho.

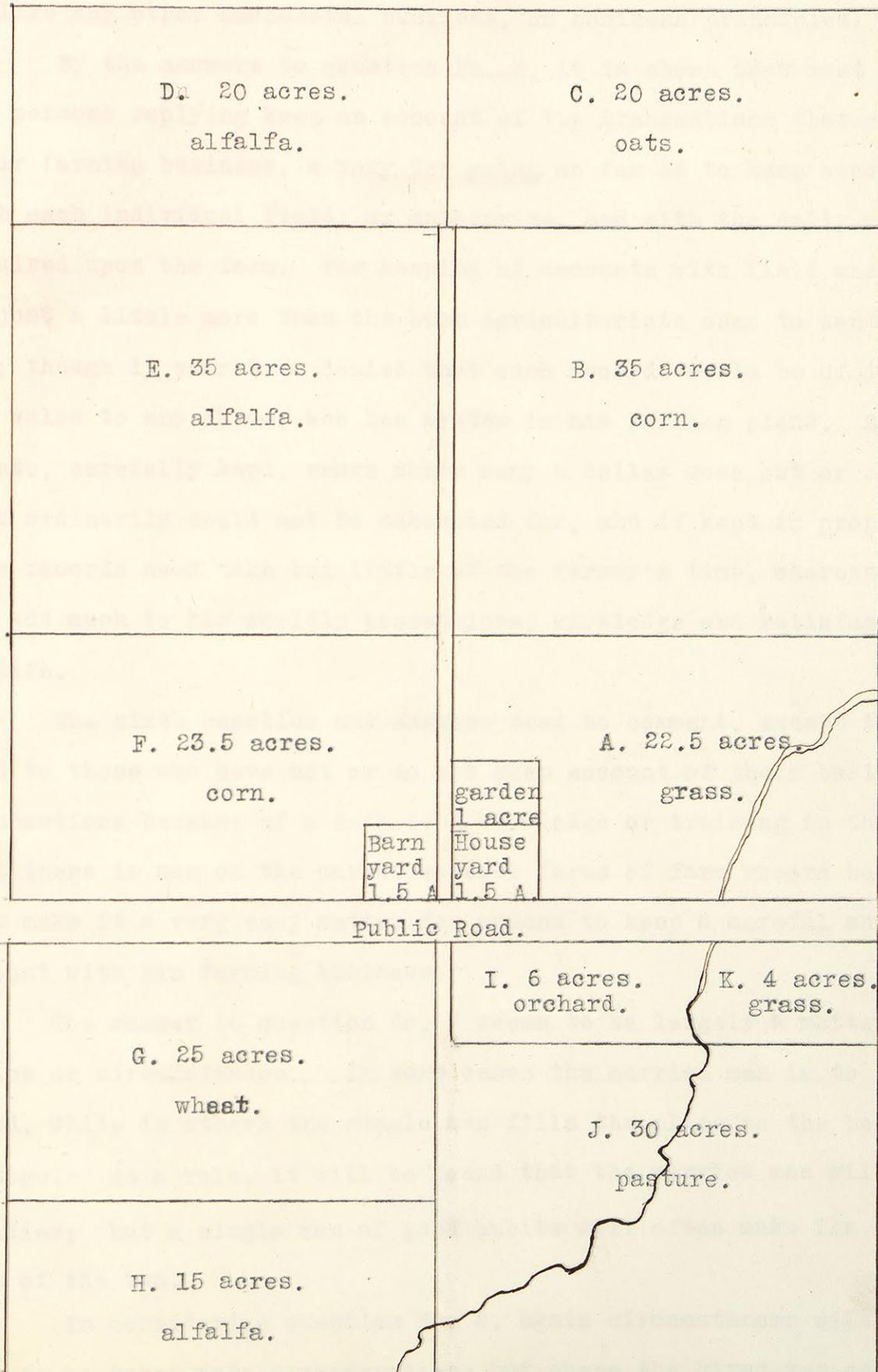
In the following discussion I have attempted to summarize the answers given above and have also offered some general suggestions bearing on the subjects.

The first requisite in farm management is a farm on which to operate. The diagram given herein is that of a Kansas farm which is being at present operated according to the plan given which seems to me to be as near ideal as circumstances will permit. This farm was formerly owned by a man who had little idea of a methodical way of managing it, and the farm went to square up a deficient bank account. His house was a small one, and with its few scattering outbuildings was located in what is plotted as field A, which is a low level piece of land, poorly drained. The present owner has brought the farm to a high state of fertility and methodical arrangement, and it is to-day the model farm for miles around. In the following discussion I will use this plotted farm to illustrate some points which I will endeavor to bring out.

From the answers to question No. 1, it seems that most farmers are coming to realize that it is better to plan to utilize the feed produced on their farms in the raising of stock. This as is readily seen, has an advantage in two ways over the old method of selling grain and hay; First, it gives the farmer the easy way of hauling (or driving) his produce to market, i.e., in a concentrated form; second, it keeps the fertilizing constituents of the feeds on the farm that grows the feed, and this alone is worthy of careful consideration.

A majority of those who answered question No. 2, take a yearly inventory of their stock and business equipment. Farming is a business and to carry it on most successfully, requires that it be carried

Farm Plot, 240 acres.



(Scale 6-2/3 rods equals 1/4 inch.)

on like any other successful business, on business principles.

By the answers to question No. 3, it is shown that most of the persons replying keep an account of the transactions that occur in their farming business, a very few going so far as to keep accounts with each individual field, or enterprise, and with the daily work required upon the farm. The keeping of accounts with field and labor is just a little more than the best agriculturists seem to want to try; though it cannot be denied that such records would be of interest and value to any farmer who has system in his farming plans. Such accounts, carefully kept, shows where many a dollar goes out or comes in that ordinarily could not be accounted for, and if kept in proper form such records need take but little of the farmer's time, whereas they may add much to his worldly possessions, knowledge and satisfaction in life.

The sixth question and answers need no comment, except to suggest to those who have not or do not keep account of their business transactions because of a deficient knowledge or training in this line, that there is now on the market several forms of farm record books, that make it a very easy matter for anyone to keep a careful and correct account with his farming business.

The answer to question No. 7 seems to be largely a matter of choice or circumstances. In some cases the married man is to be preferred, while in others the single man fills the place to the best advantage. As a rule, it will be found that the married man will be the steadier; but a single man of good habits will often make the better hand of the two.

In considering question No. 8, again circumstances will have to be taken into consideration, but where the hired man can be

taken into the home and treated as one of the family I believe that results will be more satisfactory than the method of herding the laborers in separate quarters. The first method gives the hired man no ground for the complaint that the members of the family think themselves "better" than their hired help, something that is to be avoided if possible in a free country like this of ours. Then too it gives a man a better chance to become acquainted with his employer thereby giving him some cause and stimulus to make his employers interests his interests.

In handling farm machinery there is no better method than that of repairing each implement as soon as it is through with its season's work or at least buying the repairs at once where they are of such a nature that one can fit them himself; then some wet or rainy day the implement can be put in readiness for its next work, and the trouble that always comes by putting things off until the last minute, can be avoided. Where a machine is left until the last minute it generally means that it is not ready for use until about three days after it should be running.

In answer to question No. 10, various estimates were made and this is probably because there is no way in which the exact percentage of depreciation in the value of machinery through use can be calculated, and as C. W. Taylor says, "It depends upon the party that runs it." In hardly any other thing will there be so much difference in men, not altogether because one man is more careless than another, but some people have a knack of understanding machinery and know how to care for it, while others are largely lacking in this respect. With ordinary care I think ten per cent per annum is sufficient to allow for the wear and tear on most machinery, and if judgment is used in the pur-

chase of the machines. Where a man buys the very cheapest article he can get, as many do, thinking that thereby they are saving money; then the loss by wear and breakage might well be put as high as twenty-five or thirty per cent. It should be borne in mind that the lowest priced articles are not always the cheapest. A good maximum to have here is, "that price denotes the quality."

A great deal might be written on the subject of crop rotation. In looking over the various answers to question No. 11, it will be observed the rotation of crops is as yet receiving very little attention, in Kansas and Dakota, while in Wisconsin the farmers practice rotations of such a character that the soil is maintained and even increased in fertility. It will not be many years until the agriculturists of Kansas will be forced to follow the examples of the farmers of the more eastern states in this line, and the sooner they commence the practice, the less intense will it have to be followed in years to come. Now is none too soon to commence reserving the strength of the fertile soils of our state. One way, and the least expensive way, of saving and adding fertility to our soils, is proper rotation of crops. Simply changing from one grain to another until we have run through the list of grains grown, and then repeating, is not enough. The land should be given a rest from these crops. This is best accomplished by seeding to some tame grass or perennial legume (clover or alfalfa). Legume crops not only rest the soil, but through the bacteria that work upon the roots of these plants, nitrogen, which is the chief flesh-forming element in feeds, is taken from the air and made into a form available for plant production, also the grass, alfalfa or clover roots grow deep into the soil, loosening the subsoil and separating the particles from

one another, thus forming new soil and finally when the sod is broken up the roots decay and form humus, giving new life and vigor to the land.

Closely related to this method of maintaining the fertility of our land, is the preservation and utilization of barn yard manures. It is encouraging to note that the answers to question No. 13 indicate that the farmers in Kansas are now saving and using this farm product nearly if not quite as thoroughly as the farmers of Wisconsin. May this practice continue to increase.. The barn<sup>yard</sup> manures are the cheapest and best fertilizers known. More on this subject I need not say, for in so brief a summary one could not hope to do justice to the subject. Let every farmer study this question and use the farm manure, and it will pay him in dollars and cents.

On the horse question nearly all farmers seem to agree that for all round farm work, the horse of medium weight (about 1200 to 1400 pounds) is the best. Probably such horses are favored in preference to the heavy draft horses because of the greater activity of the smaller horses, enabling them to be driven at a faster gait than a walk, if necessity demands a little speed, whereas with the heavy draft animals nothing will knock them to pieces faster than traveling on the road. With the present high price of horses there is no doubt but that it will pay any farmer to raise his own horses. Then there are other phases of the subject to be looked at. When a man raises his own colts he knows the breeding of the animal and can raise just such a horse as he wishes and the handling of the colt from colthood up, gives him an understanding of the temperament of the animal that cannot be known or learned in a day.

If one has the breeding and raising of his own stock he can grow

a well-bred animal almost as cheaply as he can raise a scrub, and there is great satisfaction in having a well-bred animal that shows its breeding in its looks and actions. This is not only true of horses but of other stock as well and when it comes to selling well-bred stock the animal will always go at a higher price than the ordinary scrubs or animals of mixed breeding, which is also a source of pleasure as well as profit to the seller.

Of all the questions asked, No. 22, received the best answers and comments. Personally I believe that system and method should be carried into the conducting of every business. System can and should be used in farming. Of course everything about the farm cannot be run as smooth as clock work; but the work, rotation of crops and business of the farm should be carefully planned, and with some allowances for necessary changes, this plan can and should be carried out.

Have a time for doing everything with a little spare time for the additional work that comes up. Do all work at the proper time and keep everything in its place. If system in the work is carried out, a system of records and accounts will have to be kept as an aid to the work. These accounts and records should not require an elaborate system of bookkeeping; but should be so simple and yet so complete that a person may look them over and tell what work was done at a certain time, how long it took to accomplish a certain piece of work, with the cost of material and labor required.

As a summing up of the relative standing of the three States on methods of farm management, it appears from the data, that Wisconsin, in methods of all kinds pertaining to farm work, is ahead. This is probably due to the greater necessity which exists in that State of

being more careful and saving, since the soil is older and competition is closer than in the west. Hence, the necessity of practicing the best farming methods. The reports from North Dakota came mainly from large ranches. In managing such farms, the business must be divided into a number of heads, making the practice of business methods and the keeping of strict accounts even more necessary than on the smaller farm.