PROCEEDINGS
Of The
SEVENTH ANNUAL
FLORIDA DAIRY
PRODUCTION CONFERENCE

UNIVERSITY OF FLORIDA
GAINESVILLE
MAY 12 and 13, 1970

"Tomorrow's Opportunities Today"

SPONSORED BY
DEPARTMENT OF DAIRY SCIENCE
AGRICULTURAL EXTENSION SERVICE
AGRICULTURAL EXPERIMENT STATION
OF THE
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
WITH COOPERATION OF STATE DAIRY ORGANIZATIONS
TO: Florida Dairymen and Those in Related Enterprises

SUBJECT: PROCEEDINGS
SEVENTH ANNUAL FLORIDA DAIRY PRODUCTION CONFERENCE
May 12-13, 1970

Dear Dairy Cooperator:

The Seventh Annual Florida Dairy Production Conference brought together authoritative speakers on topics of current major interest to the progressive minded dairymen and agri-business friends in attendance. Use of dairymen who have carried out specific practices successfully along with college men and other speakers assured a practical approach to the problems and information on their solution.

Appreciation is expressed to all who participated in making it a successful Conference. We think the Proceedings with resumes on the different topics will serve as a reminder and source of information for reference.

Special appreciation is expressed to the four major milk producer associations who contributed to the planning, financing and publicity of the Dairy Conference.

Sincerely yours,

C. W. Reaves
Extension Dairymen
and Conference Chairman

CWR:bp
CONTENTS

MANURE DISPOSAL
  Panel Discussion, Waste Disposal (Summary).......................... 1

QUALITY MILK
  Florida Quality Milk Council Program......................... 2
  The Regulatory Phases of the Abnormal Milk Program, ........ 3
    J. B. Strickland
  Prevention of Intramammary Infections by Following a Teat
    Dipping Program, Dr. W. W. Thatcher.......................... 8

HERD HEALTH
  Plans For a Veterinary College at the University of Florida,
    Dr. G. T. Edds.................................................. 10
  Vaccination of Dairy Cattle, Dr. E. C. Harland................ 11

DHIA
  Effective Use of DHIA As Seen By A DHIA Supervisor, Herbert
    Wright, West Coast DHIA Supervisor........................... 14

REQUISITES FOR PROFITABLE DAIRYING
  Ingredients of a High Income Dairy Operation Panel
    Introduction - Dr. John Holt, Extension Farm Management
      Specialist...................................................... 16
  Louis Larson, Delray Beach...................................... 17
  Val Massey, Palmetto, Florida.................................. 19
  W. W. Bassett, Jr., Monticello.................................. 21

ADA DAIRY PRINCESS
  My Experiences as Florida Dairy Princess, Cecilia Rowe....... 22

LABOR
  Motivating Employees To High Performance, Dr. Ralph Eastwood.. 23

AUTOMATION IN COW MILKING, Dennis Armstrong, Michigan State Univ... 26

RESEARCH REPORT: GENETIC SELECTION FOR PROTEIN IN THE DAIRY COW,
  Dr. C. J. Wilcox................................................. 27

DEDICATION OF NEW MILKING FACILITY, DAIRY RESEARCH UNIT.......... 28

NAMES AND ADDRESS OF THOSE ATTENDING CONFERENCE................... 29
Summary of Panel Discussion, Waste Disposal

The panel moderator was T. C. Skinner, Extension Agricultural Engineer.

The panel consisted of:

John Hood, Manatee County Dairyman

Tom Perry, Glades County Dairyman

Chris Angelidis, Engineer, Florida State Board of Health, Manatee County Health Department

L. B. Baldwin, Assistant Agricultural Engineer, Cooperative Extension Service

Mr. Hood discussed the changes that have occurred in the dairy industry, citing the trends to larger herds, large concrete holding areas and cow washers, which have all contributed to waste handling problems. He described the system of lagoons which he has constructed in cooperation with the University and the County Health Department. The system consists of three lagoons about a half a mile in length (total), 50' in width, and being 12', 3', and 4' deep in order of flow. While the wastes go through the lagoon, the solids are broken down by bacterial action, and the end product is dispersed to a 40 acre pasture through a seepage irrigation system. This effluent contains plant nutrients.

Mr. Perry pointed out the increasing interest in pollution and the responsibility of dairymen to solve their pollution problems before political and public attention is focused on them. He keeps his wastes on his property by means of diked areas at present, and plans to construct lagoons from which final effluent will be spread in his irrigation system.

Mr. Angelidis presented a comparison of the earth to a spaceship, pointing out that the earth has regenerative systems by which wastes are converted and recycled just as in spaceships. He warned that there is a limit to this regenerative capability, and when we overload a stream or the air over our cities with pollutants, we begin to destroy the spaceship earth's ability to support life.

Mr. Baldwin discussed the present work in IFAS to develop and promote practical methods of handling animal wastes which will prevent pollution of surface and ground waters, reduce odor to acceptable levels, minimize management, and be reasonable in cost. Personnel of the Agricultural Engineering, Dairy Science, Soils, and other Departments are researching the following methods of waste management:

1. Disposal to cropland directly by sprinklers.
2. Disposal to cropland after lagooning for solids breakdown.
3. Disposal to soil by intermittent flooding in basins.

The major areas in which quantitative information is being sought are:
1. The rates that solids, water, and nutrients can be placed on various soils and crops without adversely affecting the crop or the ground water.
2. The rate and extent of seepage to ground water that occurs under various conditions from lagoons, feedlots, or other pollution sources.

The main points stressed during the panel discussion and in the question and answer period that followed were:

1. In order to remain profitable, the dairy industry has increased the size of operational units and implemented practices which produce waste management problems and a significant pollution potential.

2. There are many methods by which dairy wastes can be handled. Those being recommended by Extension return the material to the soil-plant system.

3. The selection and design of a waste management system should be done individually for each operation.

4. Good waste management is just another part of running a profitable, progressive dairy operation.

FLORIDA QUALITY MILK COUNCIL PROGRAM

The Florida Quality Milk Council is composed of representatives of the various milk producer associations and representatives of state regulatory agencies. The purpose of the Council is to expedite cooperative efforts in the development and promulgation of quality milk programs. The program fits especially into the abnormal milk program which is receiving so much attention at present.

The 1970 officers are as follows:

President - Freddie Gore, Zephyrhills
Vice President - Dr. G. W. Meyerholz, Extension Veterinarian, U. of Fla.
Secretary - C. L. Ward, Jr., Astatula
ABNORMAL MILK PROGRAM

By: J.D. Strickland

The control of abnormal milk sales idea was introduced in Florida in 1967 at the Interstate Milk Shippers Conference in Miami. Resolutions were passed by the group, to recommend to the U.S. Public Health Service the implementation of an abnormal milk program. Today a three phase program has been generally accepted by a number of dairy associations, health departments, and regulatory agencies throughout the United States and its reported effectiveness range from a mere nothing to complete control of poor quality milk.

The main objective of the program is the elimination of milk produced by sick cows - cows with mastitis - from the saleable supply. The first year was designated as the educational phase, a period in which the dairyman would be advised on abnormal milk and regulatory agencies would select a screening test suitable for their section of the country. The U.S. Public Health Service recommended the adoption of any one to the five chemical tests then available as a screening test. These were the California Mastitis Test, The Catalase Test, the Milk Quality Test, the Wisconsin Mastitis Test, and the Modified Whiteside Test. All of these concoctions react chemically when mixed with milk containing certain cells that are considered abnormal. This of course has made the leucocyte, the epithelium cell, and the term somatic cell count popular in identifying milk to be withheld from the market.

The second phase of the recommended program went into effect July 1, 1968, with a cell count in excess of 1,500,000 considered as abnormal, and most organizations have selected a screening test that will be used in their immediate area.
Florida along with a majority of states has selected the WMT and letters advising the dairymen when samples collected at his farm exceed the allowable 1,500,000 have been mailed by the Dairy Division of the Department of Agriculture and Consumer Services for about two years. Since July 1, 1969, 172 dairymen have been notified of excessive counts and 99 of these have received two or more letters.

The punitive action stage of the program is yet to come. Beginning July 1, 1970 the letters of advice will be followed by letters of warning, and repeated violations will remove infected milk from the Grade A Market.

The U.S. Public Health Service has offered the following guidelines for implementation of phase three of the Interstate Shippers Recommendation. "When a herd milk sample exceeds 1,500,000 when using the WMT, a confirmatory count using a Direct Microscopic or Electronic Somatic Cell Counter shall be made on the sample and the results of this count shall be official results.

Whenever the confirmatory count indicates the presence of greater than 1,500,000 somatic cells per ml. of milk the following procedure shall be followed:

A. A notice shall be sent to the producer warning him of the excessive somatic cell count. The notice should also list the more likely causes of high somatic cell counts.

B. Whenever two of the last four consecutive somatic cell counts exceed 1,500,000 cells per ml., the health authority shall send a written notice thereof to the person concerned. This notice shall be in effect so long as two of the last four consecutive samples exceed 1,500,000 somatic cells per ml. In addition to the written notice and inspection should be made by the regulatory agency or by certified personnel. This inspection should be made at milking time to be most effective.

C. An additional milk sample shall be taken within 14 days of the written notice and inspection required, but not before the lapse of three (3) days. If three of the last five samples within any consecutive six (6) months indicate a confirmatory count greater than 1,500,000 somatic cells per ml., the milk regulatory agency shall proceed with its responsibility to suspend the dairymen's permit for violation of item 1 or other applicable requirements of the Grade "A" Pasteurized Milk Ordinance."
Item 1r of the Grade "A" Pasteurized Milk Ordinance reads as follows:

"Cows which show evidence of the secretion of abnormal milk in one or more quarters based upon bacteriological, chemical, or physical examination, shall be milked last or with separate equipment, and the milk shall be discarded. Cows treated with or cows which have consumed chemical, medicinal or radioactive agents which are capable of being secreted in the milk and which, in the judgement of the health authority, may be deleterious to human health, shall be milked last or with separate equipment, and the milk disposed of as the health authority may direct."
SUMMARY

Nowhere in Florida Statute 502, nor in the U.S. Public Health Ordinance is mention made of a normal figure for leucocytes or a somatic cell count. When meetings were being conducted over the United States in an attempt to establish a normal, suggested tolerance ranged from 250,000 per ml. of milk to 2,000,000 and above. After much discussion and a very close vote - 1,500,000 was adopted as tolerable at the Denver Interstate Milk Shippers Conference in May, 1966, and recommended to the U.S. Public Health Service as the number to be used in administering punitive action when the phase three portion of the program goes into effect July 1, 1970. The Interstate Milk Shippers have no enforcement powers; however, if a dairy fails to meet their recommended standards his name will be left off the Interstate Milk Shippers' list of sanitary compliance and enforcement ratings. When a certain per cent of producers fail to make the list the processor who buys the milk will be removed from the list. Then milk processed by this company cannot be sold to military installations, schools, nor shipped across state lines. Therefore, as it stands now, all producers must strive to attain listing on the shippers' list.

When dealing with herds that produce large quantities of milk daily, care must be taken to assure equal effective testing programs that will not unduly penalize the producer and at the same time assure the consumer of a high quality milk at the market. To accomplish this, and at the same time keep dairy herds in the State eligible for Interstate Milk Shippers' listing, the Division of Dairy Industry will follow the U.S. Public Health Guidelines by starting each dairy in the State on a three out of five testing program July 1, 1970. All sample results recorded prior to July 1, 1970, will be discarded.

To avoid oversampling, it has been agreed by the Department of Agriculture and Health Department that all samples collected within a two week period will be averaged together and recorded in the ledger as one sample. Therefore, it should not be possible to place a dairy herd in jeopardy within less than a
three months period. This three month period should give any producer ample
time to remove causes of high leucocytes, thereby, bringing his operation well
into the 1,500,000 allowable limit.
Prevention of Intramammary Infections by Following a Teat Dipping Program

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Bovine mastitis is a general term applied to a group of diseases of the udder. Some 20 different types of pathogens have been isolated from infected udders, but 97% of them were *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus uberis* and *Staphylococcus aureus*. Any of these four main udder diseases may occur in various degrees:

1. **Subclinical mastitis** causes no swelling or gross abnormality of the milk, but is detectable by special tests.

2. **Mild-clinical mastitis** causes slight swelling, sensitivity and heat of the udder and may cause flakes, clots and a watery appearance of the milk. It is detectable by barn tests.

3. **Severe-clinical mastitis** involves a sudden onset with swelling of the infected quarter, which is hot, hard and sensitive. The secretion appears abnormal and milk production drops.

The teat canal is the primary barrier to new intramammary infections (IMI), which usually result from microorganisms ascending through the teat canal. Consequently, if no microorganisms contact the teat end, no IMI would result. Milking time hygiene seems to offer the greatest potential for preventing udder infection. There are at least four sources of microbial contamination and transmission from cow to cow at milking time. These sources include the milking unit, skin on the end of the teat, udder washing cloths, and hands of the milker. Several laboratories have tried to find a minimum effective procedure for reducing new infections during lactation, by adding to the normal milking routine only the dipping of all teats in a germicide immediately after each milking.

Schultz, W. D. and Smith, J. W. (J. Dairy Sci., 53:38, 1970) were able to accomplish a 96% reduction of micrococci on the skin at the opening of the teat using a 0.2% chlorhexidine teat dip under practical farm conditions. In addition, the chlorhexidine teat dip was used to sanitize half of the udder of 12 cows against exposure of the entire udder to *Staphylococcus aureus* applied at each milking through contamination of the milking machine teat.

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cups. During 31 weeks of such challenge, nine new gland infections appeared among the undipped quarters whereas there were only three new infections among the dipped quarters.

In a field trial in which a commercial iodine preparation was used to dip only teats on the right side of the cow, Wesen, D. P. and Schultz, L. A. (J. Dairy Sci., 52:938, 1969) succeeded in reducing the new infection rate by 53% as compared to that in the left udder halves. The new IMI on the dipped side resulted in an estimated 3925 infection days during the experiment as compared to 9320 infection days on the control side. In a similar experiment (Marshall, R. T., Sikes, J. D. and Morgan R. D., J. Dairy Sci., 52:938, 1969), two teats on one side of the udder were disinfected with either hexachlorophene or iodophor germicidal preparations and the opposite teats served as non-disinfected controls. After 6 months the procedure was reversed and each cow was disinfected on the opposite quarters. Hexachlorophene and iodophor preparations caused a 25% and 16% reduction in CMT reactors, respectively. Isolation of hemolytic bacteria was 47% lower among disinfected quarters after the first 6 months than among opposite non-disinfected quarters. At 14 months after the switch in disinfected quarters, there was a 40% reduction of hemolytic infections in disinfected quarters relative to non-disinfected quarters. Clinical evidence of mastitis decreased approximately 52% since it was necessary to treat about twice as many quarters among the controls.

There is evidence that the overall effects of teat dipping or hygiene routines may be partially neutralized by new dry-period infections. Likewise the effects of dry cow medication alone are nullified by new lactation infections. This has led to the proposal that lactation-hygiene (teat dipping) and dry cow medication be combined into a preventative mastitis program. Treatment of the mammary gland during the dry period should serve two important purposes: (1) eradication of existing IMI, and (2) decrease the incidence of new IMI during the dry period. Cornell investigators (Roberts, S. J. et. al. J.A.V.M.A., 155(2):157, 1969) compared two lactation hygiene programs combined with a dry period treatment in reducing the herd infection level. The use of a 4% (40,000 p.p.m.) sodium hypochlorite solution (5.25% chlorox) as a post milking teat dip and dry period medication with a streptomycin and penicillin preparation reduced the percentage of infected quarters by 75% (40 to 10%) over a 21 month period. The percentage of infections due to Staphylococcus aureus, Streptococcus agalactiae, Streptococcus dysgalactiae and Streptococcus uberis over the 21 month period was reduced 38%. The results of this study indicate that infection levels in herds can be decreased considerably by relatively simple hygiene and treatment practices.

Progress in reducing herd mastitis infection levels is a gradual process over a period of months, and visible improvements should not be expected "overnight".

Summary

A post milking teat dip reduces the incidence of new infections during lactation and the number of clinical cases requiring antibiotic therapy. Such a teat dipping program combined with dry cow treatments, with an appropriate antibiotic in a slow release base, appears to provide a highly effective program for controlling clinical and sub-clinical udder infections.
PLANS FOR A VETERINARY COLLEGE
AT
THE UNIVERSITY OF FLORIDA

by Dr. George T. Edds, Chairman, Veterinary Science Department

The IFAS Veterinary Science Department presently serves Florida by providing research on a number of economically important farm animal diseases that cause an estimated $52 million in losses annually. Research training in the areas of microbiology, parasitology, pathology, physiology, pharmacology, and toxicology has been offered to graduate students since 1964. Similarly, undergraduate courses are provided for students majoring in the animal, dairy, poultry, and laboratory animal sciences. An Extension and continuing education program has, to the extent possible, served to acquaint producer groups and the veterinary profession with new knowledge on animal diseases and their control.

In 1964 when the DARE (Developing Agricultural Resources Effectively) program was initiated, the Veterinary Science faculty and Florida's veterinary profession were asked to advise the University what steps should be taken to help assure an adequate and wholesome supply of meat, milk and eggs for the state on a competitive basis with that produced elsewhere. In 1965, Florida's Legislature evaluated the shortage of veterinarians, the limited opportunities for qualified students to study veterinary medicine, and the expanding need for veterinarians for animal and poultry production, as well as in public health and companion animal programs. Based on the conclusions of this study, the legislature authorized the establishment of a College of Veterinary Medicine at the University of Florida. The 1969 Legislature provided the initial funds to plan for the College, hire a dean, and to develop the curriculum, faculty, facilities, and space needs.

Without an increase in the number of practicing veterinarians in the state, the ratio of Florida veterinarians to animals and people will progressively decline. Other states with veterinary colleges are expanding their entering enrollment to supply their own needs. And until recently, some of these states have actively sought students from the adjoining states. These states now find their own students' demands cannot be met and are withdrawing from regional educational contracts. Furthermore, due to the very low regional student support provided under these contracts, veterinary colleges accepting such students find increasing financial deficits which are difficult for them to justify to their own legislatures. Recognizing the need for more veterinarians and educational facilities, the Federal government is now providing up to two-thirds of the construction costs and as much as one-half the operational funds for new veterinary colleges in other states. Similar support is being requested by the University of Florida for development of its College.

Finally—and this is most important—an increasing number of interested and well-qualified Florida students cannot major in veterinary medicine because of insufficient veterinary educational facilities here and elsewhere. Therefore, to provide adequate educational opportunities for Florida students desiring to complete a degree in veterinary medicine to assist in correcting Florida's present and projected deficit of more than 500 veterinarians to expand our research on those disease problems causing losses of 20 percent of the livestock and poultry potential, and to develop a strong continuing education program for approximately 500 veterinarians now in the state, further planning funds are needed. If construction funds are made available by 1972, this will enable us to enroll an entering class of 64 Florida students by 1974.
VACCINATION OF DAIRY CATTLE

Vaccination of animals is a form of animal health insurance and as in any insurance, it is possible to have too much, too little or the wrong kind. It is no more possible for me to tell you today in every instance what you should be vaccinating for than an insurance agent can tell you what insurance you should carry until I know the disease problems which exist on your dairy. I would like, however, to discuss with you some vaccines and immunizing agents which are available and some conditions in which they may be of value.

The first and probably the most important immunization that a calf gets if he is to live is colostrum. Calves should receive colostrum as soon after birth as possible. Recent work has shown advantage of milking 8 oz. of colostrum from the cow and giving it to the calf 15 minutes after birth (or at the time the calf is able to sit up). This insures that the calf gets colostrum early and before bacteria which can cause scours have had an opportunity to get into the calf’s stomach. The calf is not able to derive much benefit from colostrum after 12 to 18 hours.

Hyperimmune serum given according to maximum suggested recommendations is helpful in cases where the calf does not get colostrum or receives it after 12 hours. Hyperimmune serum has been used routinely in all calves at the University of Florida Dairy for the last 5 months and appears to have a favorable effect. This favorable effect has not been reported by all workers, however, and certainly is not as helpful as early ingestion of colostrum.

Black leg and Malignant edema bacterins can be given after 2 months of age. If either of these two diseases are a serious problem on a dairy vaccinations can be given earlier in which case it should be repeated after 2 months. Since most dairies keep calves less than two months of age in stalls these two diseases are seldom a problem until the calves are put on pasture. In most cases, one vaccination after 2 months gives life time protection.

Brucellosis (Bangs Disease) vaccine can be given to dairy heifers at ages 3 to 6 months. It is best to give this as early as possible since late vaccinations are a common cause of false reactions to the Brucellosis Card and serum agglutination tests. Brucella vaccine should not be given to bull calves. At this time, the state of Florida pays part of the cost of this vaccination for this disease. Vaccinated heifers usually bring a premium when sold for herd replacements. This inoculation should not be given after 8 months of age.
Leptospirosis bacterin can be given to calves after 2 months. Since several types of leptospirosis have been found in cattle, it may be advisable to vaccinate for more than one type. A new vaccine will soon be on the market with most of these types included. Leptospiral vaccine should be given twice the first year at 6 months intervals and once a year after, in herds where it is a problem.

It is generally safe to vaccinate healthy calves for Blackleg, Malignant edema, Brucellosis and Leptospirosis at the same time. It is not too uncommon for calves, especially older calves, to have a reaction to the Brucellosis vaccine. This lasts from a day to as long as 10 days and is characterized by stiffness and partial loss of appetite. No permanent problems have arisen from the proper use of these vaccines and bacterins in my experience.

Vaccinations with the viruses of Infectious Bovine Rhinotrachitis (IBR) and Bovine Virus Diarrhea (BVD) need not be given until after 8 1/2 months since calves born to cows that have been exposed to these diseases or vaccinated will carry immunity which will block the favorable effects of the vaccination. As a general rule, the only dairy animals which should be vaccinated with these two vaccines are calves from 8 1/2 to 13 months of age. When calves are properly vaccinated with modified live virus vaccines protective immunity will be maintained for the average productive life time of the cow. Vaccination for these two diseases is strongly discouraged during an outbreak, since vaccination usually increases severity of the problem. IBR vaccinations have also been responsible for abortions when given during the time the cows were pregnant. BVD spreads so rapidly in a herd that when the disease has reached a stage that it can be diagnosed all members of the herd have already been exposed. There is much research which needs to be done in developing more stable and reliable vaccines for these two diseases. All of these now available are very sensitive to light and heat both before and after mixing with the diluent. After the vaccine is mixed, it must be kept cold and in a dark place and given with a syringe which has not been sterilized with chemical disinfectants. After the vaccine is mixed it must be used within an hour. Since the vaccine is so easily destroyed, a great number of cattle are vaccinated each year with vaccine which does not give any protection.

Parainfluenza virus which is an agent involved in shipping fever pneumonia of cattle can be given to cattle of all ages. The protection given to the calf from colostrum is quite short. Much work has been conducted in trying to increase the length of protection from the vaccine. It is for this reason some vaccines against PI3 are recommended to be sprayed into the nostral instead of injected in the usual way. The advantages of using one type of PI3 vaccine over another has not been clearly established. Vaccination of calves with this vaccine may have some real advantages in controlling respiratory problems in calves. In cows it is not highly recommended.
Vaccination of cows with Staphylococcus toxoid has proven of very limited effectiveness in the control of mastitis. Many of the toxoids are quite effective when used at least 2 weeks before freshening in controlling gangrenous mastitis (Blue bag) where this has been a problem. When used for this purpose, cows can effectively be vaccinated at the time of drying off, if the cow is expected to freshen in less than 3 months.

Things which must be kept in mind in any vaccination program:

1. Many vaccines have the ability to cause adverse effects especially when given to sick animals and those which have been recently exposed to various disease agents.

2. Protection from disease can not be expected if out dated, mishandled vaccines are used, or if not given under the conditions which are prescribed by the manufacturer.

3. Vaccines such as IBR and BVD will not give protection if given before the immunity obtained from colostrum has worn off.

4. Shotgun vaccination programs are uncalled for in most cases. Vaccination programs should be based upon diseases present on the farm. For this reason, post mortems on dead animals by professional people as veterinarians and diagnostic labs are very important.

5. Use your head in buying drugs and vaccines from feed and drug salesmen. Don't be taken in by miraculous claims made by many salesmen.


Ernest C. Harland, D.V.M.
Assistant Professor and
Veterinarian
EFFECTIVE USE OF DHIA AS SEEN BY A DHIA SUPERVISOR

by Herbert Wright, West Coast DHIA Supervisor, Bradenton

Good records are more important today than ever before, with the rising cost of producing the finished product, in order to keep milk competitive with substitutes. Through DHIA we think we have one of the best management tools there is today to help with this.

With the help of many people and hard work, we are striving to help the dairyman help himself by providing him with the guides for breeding, feeding, culling and many management factors to help him constantly improve. This is based on the accuracy of the information reported by the dairymen to the supervisor along with the milk weights and butterfat tests taken by the supervisor and the records processed at Raleigh, N. C.

DHIA records are used by many people other than the dairyman. But the dairyman is the one who gains in the end.

Feed is the largest cost item. The feed available for milk production is that over and above maintenance requirements. And feed fed beyond this requirement and that is not used for producing milk does not return a profit. When the supervisor visits your dairy he reports all feed and roughage fed to cows. This information plus milk production, % fat, body weight plus stage of pregnancy of animals is all computed at the processing center. The record when returned will indicate if the cow is over fed or under fed. So you can use records as a feed guide for individual or group feeding.

Another big expense today is replacements. A dairyman replaces about 25 to 30 percent or more of his milking herd every year. Your records are a good guide for culling cows. Your cows are coded according to your own herd, A B C D E. This is a guide for culling cows according to production, based on the projected 305 day mature equivalent records.

A - Production above 110 percent of herd breed average  
B - Production from 100 to 110 percent of herd breed average  
C - Production from 90 to 100 percent of herd breed average  
D - Production from 80 to 90 percent of herd breed average  
E - Production less than 80 percent of herd breed average

DHIA records provide important information necessary to evaluate the genetic potential of dairy sires. This is important if we are going to increase the potential of our replacements. Only about 20% of the cows in the U.S. are on DHIA. Only about 45% of this 20% are identified as to sire. Therefore, records from only about 9% of the cows in the U.S. are available for sire proving and evaluation. Through proper identification of cows and increase in herds on DHIA this percentage could be increased. The faster the genetic potential of both outstanding and undesirable sires could be determined the faster the improvement.

Through the Processing Center we are now receiving a good Calf Identification sheet so all heifers born are identified, both the sire and dam, birth date and how it is identified so when a replacement comes into the milking herd she can be properly identified at the first test period after she has calved. This will result in correct evaluations of sires in your herd.
Herbert Wright

This year the records provide you with some new management factors, which can be of real value to the dairyman.

You can now get a list of cows preprinted from the processing center showing the cows to be bred in order of the number of days they have been in milk. There is a list that shows the cows due to calve within the next 60 days in order so that you can start lead feeding, also helps to determine if you are going to have enough cows to produce the amount of milk you need or if you are going to have to buy some replacements.

You also get a list of cows to be dried off in order of expected calving date so she can get her necessary rest. These lists can be extremely helpful in the larger herds we have today. In the larger herds we are getting too many cows going to beef because of reproduction problems. A good calving interval is important. By good use of your records and the information supplied you, this calving interval can be decreased. Too many dry cows and strippers rob us of profits. One dairy I test has put this list of cows due and past due up in the barn where his help can see it. He is getting more cows bred now than before.

With good use and proper understanding of your records it is possible for a dairyman to milk less cows and maintain higher production than ever before. This will result in less investment in both cows and labor. Most men milking today will take pride in milking good cows. I think records are important to the man milking the cow. If you have a man interested in the records he is going to do a better job. One of the top herds in our Association is being milked by a man who asks every month to see his records. We take a few minutes and discuss what his cows are doing. I think every dairyman could benefit from doing this.

The permanent identification that goes along with DHIA I think is important to a large herd owner, where it is impossible for him to know each cow. It is the responsibility of the supervisor to see that each cow is permanently identified along with her barn number or neck chain. I know of one occasion where the herd owner made a list of cows he wanted to go to beef, gave it to the man milking so they could hold the cow up. If the milker had a cow he did not like he would change the neck chain to the cow, so consequently some good cows were sent to beef. Now this dairyman checks the eartag on each cow before she goes on the truck.

I had a dairyman who thought he could get along without DHIA records, so he quit for about 5 months. One day he called and said he would like to get back on. In the one year four months that he has been back on DHIA he has brought his herd average up from just over 7,800 pounds to 10,000 pounds. I heard a man ask him one day what this cost him. He said, "It doesn't cost, it pays," I know a good banker who likes DHIA records too.

I think every DHIA Supervisor in the state of Florida will take time to sit down and go over the records with any dairyman on DHIA or any one interested in DHIA. A supervisor must believe in the DHIA and the records to put in the long hours and hard work that it takes to get all the necessary milk samples, run the butterfat and prepare the records for the processing center. Only by good management and hard work, the dairyman today is going to stay in the dairy business.
Introduction to a Panel Discussion on:

The Ingredients of a High Income Dairy Operation*

A successful dairy can be operated many ways, and still be successful. Replacements may be raised or bought, silage may be grown or not, milking may be done in a parlor or a flat barn. However, there is one thing that characterizes every high income dairy operation; they are all run by a good manager.

Our panel members are good managers—they eliminated their bottlenecks as they came to them. If the Florida dairy industry needed leadership, they stepped in. If labor was a problem, they worked out incentive plans to keep their key men. They were good. They got bigger. I suspect they, and others like them, will continue to grow.

*John Holt, Panel Moderator, Assistant Professor, Farm Management Agricultural Economics, Department of I.F.A.S., University of Florida
STATEMENT TO PEOPLE ATTENDING SEVENTH ANNUAL
FLORIDA DAIRY PRODUCTION CONFERENCE

By Louis E. Larson, Delray Beach, Fla.

While being introduced as a successful dairy farm operator, reminds me of a little story about two fishermen who had been fishing most of the day and had a fine mess of fish to show for their days efforts. Late in the day two men approached them in a boat and one asked the age old question; 
"Any Luck?" 
"No Luck!" one of the early birds replied. The late arrivals went putting away, 
"We have a fine mess of fish here," the other man replied, 
"What do you men, NO LUCK!, but came the truthful but modest reply 
"This wasn't luck, It was Sheer Skill!"

With this idea in mind I believe a person could operate a Dairy Farm such as most of us are associated with now days on luck. for a while, but to stay in business you will need more than luck — you will need all of your own skills plus that which you can hire, borrow, or acquire through other means. You have to run your farm or soon it will be running you.

I think back to the days when I first went into business of Dairy farming shortly after the end of W. W. II and it frightens me to think of the way I operated and the risks I took compared to the methods we use today. I would like to think you could formulate the ingredients for a "High Income Dairy Farm Operation", I would put 

\[ M + M + M = \text{Milk} \div \text{(divided) into Markets = profit.} \]

Under the first "M" is Money — you must have enough capital or credit to soundly finance your operation. It takes a lot of cash to set up an operating Dairy Farm today. Also under the first "M" would be the wise use of money. You have to manage your money wisely and with discipline. You must remember that most of the money you handle "your cash flow" belongs to someone else and only after you have met your obligations should you use money for personal use.

The second "M" is MEN — without enough manpower you could not operate even if you are a family size dairy operation. You first need to evaluate yourself as to how much of a load you are capable of doing and how much you are willing to do. Most of the dairymen in Florida use hired labor. At our farms we generally have 30-35 people working. We have flat Barns-single shifts. We try to keep good relationships with our employees. In the past year or two the labor situation on Dairy Farms has at times been critical. To overcome this we have tried to improve working conditions, housing, salaries, bonus incentives, insurance plans, but most of all to know the men and show respect for a job well done. We do hire some women to do the clean up and find this arrangement very satisfactory.

The third "M" I would list as management or methods — or ME. It is up to me and me alone as operator of our farm to see that plans are in motion. We have been raising nearly all of our replacements for several years. We breed our milk herd 100% artificially to some of the leading bulls in the studs available to us here in Florida. We keep herd records on each cow; Breeding- Production-Health. I use to work physically much harder than I do now, I found that where I have so much to look after, a little brain power can go much farther than physical involvement. I do at times still help out when
there is a need. As the costs of doing business are continually rising, I find we must try to be even more efficient in the use of our time and materials used in the production of milk. Some of the sources of new ideas or changes in management methods, I get by visiting other farms, trade magazines, our County Agents, Bull sessions with other dairymen, suppliers, attending courses as this one. We do not make change just for the sake of change but only when a change is justified and would seem to work on our farm.

The first three "M's" should generate some milk. Now this M or milk needs a market. We find in most cases here in Florida most of our milk is regulated by Federal Milk Marketing order. It would be foolish to have the first part of the formula: Money-Men-Management and not have an adequate market to receive this milk. You cannot make a profit no matter how efficient your operation is unless you sell the milk for more than the cost of production. We must continue to try to produce for market needs. Also, I strongly believe we should be willing to invest in good public relations and promotion to expand and protect our market for milk. In most cases this is now being done here in Florida.

Now if all of these "M's" are used in a Dairy Farm Operation you should end up with a profit, but let me end by this little story.

Lost on a back road in Alabama a young man asked an elderly farmer who was sitting on a fence how to get to Montgomery. The Farmer looked down the road, scratched his head and gave a complete set of directions. After about 30 minutes, after carefully following the route laid out by the farmer, the young driver could hardly believe his eyes when he came upon the same elderly gentleman at the very same spot. Thoroughly exasperated, the young man pulled up and shouted "Look here, you act as though you expected to see me again. What's the big deal?" Well, young feller replied the farmer, "I didn't aim to waste my time explaining how to get to Montgomery till I found out if you could follow simple directions." One set of instructions will not fit each farm. Most all farms have a character of their own and we need to develop each one to its full potential.
THE INGREDIENTS OF A HIGH INCOME DAIRY OPERATION

By Val Massey, Palmetto, Fla.

First—let me give you what our farm consists of: there are 450 acres in the dairy farm, proper. Another farm nearby, of 150 acres. This is where we raise our heifers to breeding age. Also, 75 acres are leased for heifer pasture, making a total of 675 acres. We can seep-irrigate about 340 acres—our main crop is pangola grass.

The milking herd of about 400 head, consists of all breeds with about 65 to 70% being Holstein, the balance being Guernsey, Jersey, Brown Swiss and Ayrshire. Then, there are about 400 heifers of all ages. We haven't bought any replacements for two years. In fact, we have had quite a few to sell.

We have a gate-type parlor of 8 stalls, with 8 machines. No feeding is done in the parlor. Two men can milk 400 cows in six hours.

The feeding is all done in the feed sheds where silage, green chop and the grain is all fed by groups, according to production. We use four groups most of the time.

Enough silage and hay has been put up to take care of all of our roughage needs, except for 1000 to 1500 bales of hay, to feed heifers. The silage is made from Pangola grass. We use direct cut and have always used stecks for storage. However, this year, we have built two bunker-type silos. This will save some silage and make the storage much easier. I feel that the silage has been our bread and butter.

Now—for what I think are the ingredients of a high-income dairy operation (if ours is such)—

First— a wife who is a real good milk hand, a first-rate bookkeeper, record keeper of all cows (as we keep our own), one who will tolerate a seven-day work week and lots of meetings, a good mother, cook, housekeeper, and a multitude of other things. And one who will make you think you are a hero when you get that down-and-out feeling. This is the kind of wife, I have.

Second: Financing
As you all know, we dairymen use lots of this. The right kind, amount and also, the use of financing, are most important. The dairymen should try to anticipate his needs for money and then let his banker know his needs. Show the banker how you can pay him back and make sure you do so. We have been fortunate over the years to have this kind of relationship with our banker, the Production Credit Association which has meant everything to us because we would never have been able to have financed our needs without PCA.

Third: Employees:
We have been very fortunate in having the best help there is. People who are interested in our welfare, as well as their own. People who know I have to make money before they can expect to have anything extra. All of our people are important to us, but I would say there are three who are the key ones.
The fellow in charge of the milking and breeding of the cows. I know the
cows will be milked if he has to milk all of them himself.

Next, is the "Jack of all Trades", Mr. Fix-it, or Mr. Build-it. If it can
be fixed or built, he can do it. He is the electrician, plumber, mechanic,
welder, fence builder, you name it. He is most important in this day
of mechanization.

Last, but probably, not least in our operation, is the young fellow
raising the replacement cattle. This part of our program has meant very
much to us. When you have a few hours, I will tell you how good this
guy is.

Four: Extension Service and the University.
Over the years, I have called on these people for many things. I have always
received the very best cooperation and lots and lots of help. We, in Florida,
are really fortunate to have the kind of people that we have at all levels of
the extension service and in the University. They have and do mean a lot to
us in our operation.

Five: Growing Market
This probably has meant more to our success than we care to admit. Even though
per-capita consumption has decreased, we have had the tremendous population
growth, so that we have been able to grow each year. Let me add, I believe we
could turn the per-capita consumption to an increase, if we would just put our
efforts into it.

The price and supply of milk in Florida didn't just happen to be like it is.
This has been done by hard work and foresight of some strong leaders, and co-
operation among most of our dairy farmers, to bring about the strong marketing
coop" that we have in the state. These have been a big help to us, too.

With all these ingredients, it has been a challenge to make everything "work"
and fall in place. They have kept me busy those seven days per week, but
they have also been most satisfying and enjoyable. Thank you.
THE INGREDIENTS OF A HIGH INCOME DAIRY OPERATION

By W. W. Bassett, Jr.
Bassett's Dairy, Monticello, Florida

Plan, organize and analyze,—this is management,—and that's the name of the game!

We are in a business that requires a tremendous investment per dollar return and one which creates a vast annual cash flow. Dairying today is a big business whether we are milking 100 cows or 1000 cows. We must use the financial tools considered standard procedure in other high risk and big investment enterprises. We must have fingertip control over all phases of our operations which demand an outflow of dollars.

I believe that effective control of any business regardless of size requires adequate records. The larger the operation the more sophisticated our record keeping must be.

We are quite fortunate in having DHIA record keeping available to us. This computerized system of records provides management with both current and accumulative data on individual animals and the entire herd, but this alone is not enough.

We must have a cost analysis program that gives easy control over all segments of our businesses. We need to know the cost of producing a gallon of milk; the cost of raising our replacements; the cost of a ton of corn silage; our total feed costs and our labor costs. We may not have much influence on what we receive for a gallon of milk but with good records we can effect profitable changes in our costs.

A cash-flow statement will pave the road for future plans besides giving our lenders more confidence in our ability to repay our usual large mortgages. This could be an effective way to get a reduction in interest rates.

Our profit and loss statements, which we should prepare at least quarterly, will provide the good manager with a moving picture of his operation. This is essential to wise managerial decisions.

Most of us are milking cows because we like it. We started out in a small way and were involved with all the many details of the business. We worked long hours and used a hip-pocket system of records.

We succeed by the sweat of our brow and simplicity of the demands on management! Today there are stringent government regulations, labor is unsettled and scarce, machinery is more complex, credit requirements are high and money is expensive. We have depended on ever-rising land values for a financial base but this is a dead-end road.

The man who operates his business today with yesterday's methods is destined for failure. We must study the past, appraise the present and plan for the future,—because the future belongs to those who adequately plan for it.
The following talk was given after her introduction by L. E. Larson, President of the American Dairy Association of Florida.

MY EXPERIENCES AS FLORIDA DAIRY PRINCESS, 1969-70

by Cecilia Rowe, Winter Haven, Fla.

This year, as the 1969-70 Florida Dairy Princess, has been filled with exciting, memorable experiences for I have had numerous opportunities to represent the dairy industry and the hardest working, nicest people anywhere. It has been a pleasure to represent the ADA of Florida and all dairy farmers.

My chaperones and I have traveled "many a mile" from one end of the state to the other; sometimes traveling at early hours in the morning to make an appearance or late at night in order to attend classes the next day with that "sleepy-eyed" look.

I have proudly represented the dairy industry at National Sales Meetings, the 4-H State Congress awards banquet, and Dairy Cattle Club Meetings and sales. At the Florida State Fair, I presented awards during the Parade of Champions and competed in the Miss Sunflavor Pageant. While a contestant I had several opportunities to promote milk and dairy products, such as at the Doyle Connor's Banquet where I was chosen a finalist.

In March, the Florida Citrus Queen and I were taken to the Mets Stadium at St. Petersburg by helicopter. There we were to christen the Adirondack Bat Mobile. Now I suppose you are wondering what a bat mobile is. It is a machine which makes bats according to the specifications of an individual player. In order to christen the machine, Yogi Berra held a carton of milk next to it while Gil Hodges and I were to swing the bat at the carton with an oversized bat. The object was for the milk to splash out of the carton onto the machine upon being hit, while publicity pictures were made of this action. Not only did the milk splash on the machine but we were also drenched and smelled like spoiled milk for the rest of the day.

I am looking forward to participating in the National Dairy Princess contest to be held in Boston, June 28-July 1st.

It is with great pleasure that I speak up for the dairy industry, for I have traveled many places, met many interesting people, gained much knowledge in all areas, and had a great deal of fun. I will continue to speak up for milk and the dairy products long after my reign ends this June.
MOTIVATING EMPLOYEES TO HIGH PERFORMANCE

Actions of people result primarily from impulse and reason.

Goals of motivation are to get the desired behavior and profitability from endeavor, and to maintain a happy, healthy workforce. These often appear as negatively correlated functions. In such situations, managers must plan to give up some of one or more of the three variables to achieve an acceptable level of the total of all three. The ultimate goal becomes the optimum mixture of profit, happiness and health.

Nearly everything imaginable has been tried by someone somewhere in an effort to motivate people. Some have tried threats and punishment. Some have tried manipulation and bribery, rewards, praises, and promises. These often fail because would-be motivators were trying to do things to people when motivation is something that comes from within.

People are almost always motivated. The important questions are by whom and for what purposes. If your workers are to be highly motivated to do things you want, they must be working in a situation or with a set of conditions that cause them to develop motivation from within. Of course, there is no guarantee that a particular individual will be motivated -- even under the best of conditions. You may do everything possible to create the situation you think necessary to provide incentives of motives for the individual, and he still may fail to respond as you desire.

Oldsters tend to operate too much by imitation; newcomers, by instinct. In the future, managers and employees will be better educated. Masters of science and doctors of philosophy frequently will be prerequisites to managerial positions. These men and women will be much more professional in their management. They will manage much less by imitation much more from their own knowledge.

Farming has two substantial disadvantages to overcome as a work place. One is nepotism. The other is the distance from urban areas.

Skilled laborers will come to you from the industrial labor market rather than from farms for two primary reasons: There is precious little surplus labor left on farms as a reservoir of off-farm labor for any employer; and most people who migrate from farms do so on an escape-type basis. They are trying to accomplish the transition from farming to urbanity in one fell swoop, rather than by the one-generation transition with which most of us are familiar. Unskilled laborers, especially when organized, will be a first-class challenge to managerial skills -- unless our national boundaries are opened to immigrants to a degree unprecedented in this century.

There is a great deal of misguided faith that all is well with a farm or cooperative because it has a neat financial audit prepared by an accountant.

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1/ Prepared by Dr. Ralph A. Eastwood, Economist, Marketing, Institute of Food and Agricultural Sciences, University of Florida for delivery at 8:30 A.M., May 13, 1970 in the J. Wayne Reitz Union Auditorium at the Seventh Annual Dairy Production Conference.

2/ Copies of the publication from which this speech is an extract may be secured from the author.
Balance sheets and operating statements do not indicate how a farmer goes about building his cash flow. They do not reflect the hidden long-range costs of personnel disintegration when it occurs. That is to say they do not show when the farmer in effect builds cash position by depreciating or selling personnel assets which do not appear on a conventional balance sheet. Sooner or later such a farmer has a major personnel rebuilding job for a number of years if he is to stay in business. The costs of rebuilding assuredly will show on the operating statement. Motivation through pay adjustments and fringe benefits can be only a short run solution, because these tend to motivate people only to demand further increases. Motivation through job enrichment by job design is much more likely to be the lasting part of the rebuilding program in such circumstances.

Analysis of the management of your cooperative may pay you many fold. There are two basic types of audits. Financial audits analyze the financial changes that have occurred between two periods of time. Managerial audits analyze the capability of management to produce desired results in the future. Financial audits essentially are oriented on the specific backward looking financial history of a business. The managerial audits are oriented to the future. The managerial economist constantly assesses all tentative resource allocations relevant to the economic circumstances surrounding a firm or society. Both financial and managerial audits are desirable, if not essential.

You would be well advised to have a financial audit done annually by a certified public accountant. In addition, you would be equally well advised to have a managerial audit at less frequent intervals; perhaps every 3 to 5 years.

Your employees act in terms of their belief systems. Effective leadership must operate through these people. The basic needs of your employees will tend to be met through the operations of your local social systems within your framework of formal and informal organizations. Your local social systems provide your employees a sense of belonging or rejection and a reserve or drain of emotional support. These come about from your, and their, systems; through your beliefs and social interactions -- and through theirs.

People have individual needs that they must get from their jobs. Some of these come from being in groups. Their basic biological needs are one source. These include survival, safety, social and status needs. A second set involves mental growth, characterized by self-realization, fulfillment, self-development, autonomy, and growth in an intellectual sense.

Dissatisfying goals include pay, fringe benefits, working conditions, promotion opportunities, information gaps and barriers, and work associations. These can be either positive or negative dissatisfiers. Rarely do they actually satisfy an employee. The dissatisfiers are largely extrinsic to the work itself.

Satisfying goals appear to be largely intrinsic to the work itself -- its interest, its challenge, its sense of achievement, and its worth. The satisfiers
include interest, work, and feelings of completion, responsibility, and personal growth.

Supervision must be continually in the eye of the motivator. Too many bosses spoil the group. Supervisors are the top measurable impact group. They should increase the effectiveness of the production level. If not, they should be replaced or the position discontinued. Supervision is evolving away from certain yesterday concepts. One is that the supervisor is the one around whom the whole group evolves, through whom all papers flow, and by whom all decisions are made. Another is that of direction, facilitation, renewal and control. The evolving pattern is one that concentrates on building a group that can do the job, and will function well even if the supervisor is away for considerable periods.

The pattern of positive leadership in supervisory positions that will assure the greatest long-run effectiveness is based on cooperation, participation, consultation, consistent adherence to high standards of achievement, and satisfaction for the egos of the rank and file. This will require the strong leader to restrain his natural drive towards self assertion and will require all leaders to deal in a firm, authoritarian manner with a maladjusted minority if it attempts to disrupt the group.

The leader on your farm must know when and how to use both positive and negative motivation. Positive motivation is superior to negative when the necessary time, rapport, skill and group environment are present to make it possible.

Negative is indicated: (1) when time is short; (2) if you cannot establish rapport; (3) when an employee has a high security, low-self-esteem combination which leads him not to desire to take part in decision making and to desire a dependent relationship with his superior; and (4) with the trouble makers. Otherwise, negative motivation is better than no motivation at all or the laissez faire approach. Also you must apply negative motivation, in the interest of the group, to a minority when it has proved itself non-receptive to positive motivation. However your negative motivation will be most effective when it encourages types of behavior that are rewarded by relief from stresses and by satisfaction of personal needs.

Supervisors can serve better by defining mission needs and priorities. This could be a sound decision as to quality and timeliness that avoid super-speed or perfection. You could reverse any of the negative impacts to make a positive impact of importance. You could make a cost-benefit study of available alternatives. You could provide equipment, facilities, or methods that reduce costs. You may select capable people and carefully develop them. You can use the enabling style of supervision to see that the needs of your group are met, that they are well supplied and that they are protected from undue demands so that they can operate freely and effectively. You can do liaison work to seek a more level work load and more stable resources. You can help your group find solutions to operating problems that interest them and complete the work set out in goals. You can be developing those with potential to move into better opportunities.
AUTOMATION IN COW MILKING

Florida Dairy Production Conference
May 13, 1970

By Dennis Armstrong, Dairy Science Department, Michigan State University

Outline of presentation

I. History of milking machine
   A. Development of milking machine
   B. Development of milking systems
      1. stalls
      2. pipe-lines
   C. Milking rates

II. Cost of milking
   A. Labor 80-82%
   B. Building 20-18%
   C. Cost of milking in Michigan
      1. side-open parlor $132/year
      2. herringbone parlor $82/year

III. Increase milking efficiency by automation and new equipment
   A. Cow traffic
      1. better design of parlor
      2. use of crowd gates
   B. Milking machine equipment
      1. use of low lines
      2. cow washers
      3. warm water stimulation
      4. covering feed bowl as cows enter and exit parlor
      5. automatic opening and closing entrance and exit gates
   C. Automatic machine detachment
      1. sensing device for milk flow
      2. monitoring milk flow
      3. removal of claw
      4. companies presently working on automatic detachment
         a. Surge - Ill.
         b. DeLaval - New York
         c. Sta-Rite - Wisconsin
         e. Ray Umbaugh - Colo.
         f. Technical Industry - Florida
   D. New parlor configuration
      1. MPP Michigan Polygon Parlor
      2. Circle parlor
      3. conveyor type parlor
Research Report

GENETIC SELECTION FOR PROTEIN IN THE DAIRY COW

C. J. Wilcox

Major selection emphasis has been placed on milk yield in recent years, and rightfully so under present pricing systems. A few years ago geneticists from a number of U.S. experiment stations started gathering data on the protein content of milk so that a definitive genetic study of milk composition could be made. A large volume of data from many areas of the country was analyzed. The world is short of high quality protein such as that found in milk. The humanitarian question posed the geneticist was how could the dairy cow be changed genetically to increase the protein supply. We determined the necessary heritabilities, variabilities and other statistics to design and efficient selection program for each breed. These will, of course, give us a good idea of what has already happened, at least during the previous few years, and also tell us what could be done in the future.

Estimates of direct and correlated response from selection were made. Using a reasonable program of sire selection and culling of females, one considerably less than maximum, we could get an increase in the Holstein breed of 607 pounds of milk per lactation in one generation if we selected for milk yield and ignored other traits. With this we also would get an additional 23 pounds of fat and 14 pounds of protein as correlated responses. Fat percentage would decrease by a trivial amount as would protein percentage. It became obvious that maximum change in protein yield would result from direct selection for protein yield, or a highly correlated trait such as SNF or total solids yield. Selection to increase protein percentage would result in only a very slight gain in protein yield, and perhaps even a slight loss. Yet selection for milk yield, with protein being ignored completely, would result in about as much increase (95%) as would selection for protein yield. Our past selection for milk yield has doubtless appreciably increased protein yield, and a continued program should have the same results for several generations at least. Present economic and humanitarian objectives are, therefore, nearly perfectly compatible.

Dedication of New Milking Facility
Dairy Research Unit, Hague, Florida
Wed., May 13, 1970

Dr. E. L. Fouts - Acting Chairman, Dept. of Dairy Sci.
Dr. C. B. Browning - Dean for Resident Instruction - IFAS
Mr. Gerald Toms - Florida Dairyman
Dr. E. T. York, Jr. - Provost, IFAS

Dr. E. L. Fouts welcomed the group attending the dedication and reviewed briefly the development of the dairy research program at the University of Florida with its early beginning back in 1906 when Mr. John Scott moved several cows from Lake City, at the time the University of Florida was moved to Gainesville. Mr. Scott attended the dedication.

Dr. C. B. Browning discussed the dairy research program, the need for the new facility and the plans that were followed to provide a milking facility that would be especially well suited to research projects. He dedicated the department, its personnel, and all of its facilities to the betterment of the dairy industry in Florida and pledged full support of the activities of the department in the fulfillment of this pledge.

Mr. Gerald Toms accepted the new unit for the dairymen of the state. He complimented the members of the department on the constructive work that has come from the department and pledged support of the dairymen of the state.

Dr. E. T. York spoke of the important place of dairying in Agriculture and the relation of this industry to agriculture and IFAS. He complimented the department and dairymen on the spirit of cooperation and urged the dairymen to continue their support of the Department of Dairy Science.

The dedication ceremony was concluded and a lunch was served, after which many of the group went on tours of the DRU including the new air-conditioned milking parlor.
NAMES AND ADDRESSES OF THOSE ATTENDING
FLORIDA DAIRY PRODUCTION CONFERENCE, May 12 & 13, 1970

Acree, James A., DVM
Allison, Virgil L.
Alvarez, Ray
Anderson, Morris D.
Aprilie, Jimmie V.
Armstrong, Dennis
Aukema, Arthur
Bahr, Max
Bailey, John M.
Baker, Joe B.
Ballmann, Henry
Bass, Billy O.
Bass, Clint
Bassett, Wilmer W. Jr.,
Bateman, Howard S.
Baumeister, George A.
Bispham, Cyrus
Bispham, Cyrus G. Jr.,
Blackwell, James A., & family
Blocker, Mike
Bosinger, Jay
Bowen, Kent
Boyd, Mr. & Mrs. Wm. H.
Boyles, C. R.
Bowman, Bill
Braddock, Tom
Brown, Harvey B.
Burdsall, T. P.
Burton, Gene
Butler, R. K.
Butler, Robert L.
Cain, R. L.
Carey, Jerry
Casey, Mr. & Mrs. George M.
Christian, Tom
Clark, Ralph S.
Click, Taul E.
Click, R. W.
Cook, Herbert

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Riverview, Florida 33569
Rt. 6 Box 271, Jacksonville, Florida 32223
521 Plamosa Drive, Sanford, Florida 32771
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Box 398, Moore Haven, Florida 33471
Rt. 2, Box 438 A, Vero Beach, Florida 32960
P. O. Box 188, Monticello, Florida 32344
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4800 N. Orange Blossom Trail, Orlando
Florida 32804
Rt. #1, Box 85 A, Sarasota, Florida 33577
Rt. #1 Box 85 A, Sarasota, Florida 33577
1805 Swan Avenue, Orlando, Florida 32809
Rhodes Dairy, Star Route, Box 613
Eustis, Florida 32726
1340 Linda Ann Drive Tallahassee, Florida 32301
306 Clark Street, Okeechobee, Florida 33472
1300 N. W. 97 Avenue, Miami, Florida 33147
County Extension Director, Box 365,
Okeechobee, Florida 33472
Rt. 1, Box 295, Delray, Florida 33404
409 Courthouse, Jacksonville, Florida 32202
Rt. 2, Box 114, Hawthorne, Florida 32640
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Eagle Bay Drive, Okeechobee, Florida 33472
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5301 Fontaine Road, Knoxville, Tennessee 37920
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2517 W. Brandon Blvd., Brandon, Florida 33511
Clark Seed Co. 33rd East Street,
407 S. W. 13th Street, Gainesville, Florida 32601
Rt. 2, Box 28, Moore Haven, Florida 33471
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Copeland, Allan  
Cowles, F. H.  
Dale, Sermour S.  
Dawson, Albert D.  
Dawson, Franklin L.  
Denham, Frank T. Jr.,  
Dodd, Jack  
Dressel, Rick  
Dumford, Howard  
Enrico, Jim  
Evonosky A. E.  
Field, Mr. V. W. Jr.,  
Fledderjohn, Myron  
Freeland, Mr. & Mrs. Charles  
Gaiz, Bernard  
Galbraith, F. A.  
Gassaway, Horace  
Gillen, A. L.  
Glass, James T.  
Glasscock, Paul  
Godwin, Russell J.  
Goggins, Jack  
Goodrich, Leonard  
Goolsby, Robert  
Goolsby, Z. P.  
Gore, F. L.  
Graden, Arthur P.  
Green, Ed  
Guazdauskas, F. C.  
Gulledge, Ellis P.  
Hales, Norman  
Hall, Bob  
Hammond, Mr. & Mrs. A. S.  
Hanson, Donald G.  
Head, H. H.  
Hebert, Jay  
Hefner, Dick  
Heitfield, Mr. & Mrs. Vinton  
Higginbotham, Mr. & Mrs. Neal  
Hite, James E.  
Hobbs, John  

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Hudson, Bert R
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Jeter, J. McK.
Johnson, Doug
Johnson, Earl A.
Johnston, Emily
Jones, Chalmus H.
Jones, Owen H.

Killinger, Gordon B.
Kirton, D. O.
Kipp, Bill
Kondo, Francis N.
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Laney, Willaim A.
Larson, Louis E.

Larson, Louis Jr.,
Laughlin, Hugh

Lawhorne, Edward
Lee, T. G.
Lekander, Paul
Lovelace, Bill
Manter, George M.

Marshall, Dr. S. P.
Massey, Mr. & Mrs. Val
McCall, Ed

McColgan, Jerry
McCown, Ray
McLeod, Richard G.

Melear, Raymond C.
Meyerholz, Dr. George W.

Miller, John L.
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311 W. Hanlon Street, Tampa, Florida 33604
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Perry, Tom C.
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