# THE IOWA STATE UNIVERSITY ANIMAL SCIENCES PROGRAM

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Thank you, Dr. Allen. Members of the Reciprocal Meats group, I think the best way for me to start is the way I start with our students. And our own staff has heard this so many times I will have to ask your forgiveness. But you are in the most important business in the world. A person living today will have eaten 70 or 80,000 meals. Now you can miss one of these meals and it might actually be good for you. But if you miss two you may begin to get a little worried and you are particularly concerned to know that a meal is going to be available in case you do want to eat it. Now you compare this with almost any other activity in which people will engage. For example, you may buy three, four or five cars depending on the rate which you wear them out and how much you travel. You buy two or three houses. You perhaps buy two pairs of shoes a year; one or two suits; things of this kind and compare this to the 70 or 80,000 meals that people will eat.

Well, I think this has to be our approach to the Meats program here at Iowa State. Looking at our program and how it has grown over a number of years from one elective course in Farm Meats in 1918 when our present meats laboratory was built to the bulk of the program over the years to what we have now which includes six courses beginning with the Freshman course, Meats and Meat Processing; a Sophomore course, Meat Evaluation; both of which are required just to introduce our Animal Science students to this problem and to the philosophy that I have indicated; a course of Meat Merchandising and Handling at the Junior level; a course in Meat Science at the Senior level; the Molecular Biology of Muscle, a graduate student course; and a course in applied microbiology, another graduate student course. Our student body of about 600 students in Animal Science take these courses. In addition, many of the other 27 to 2800 students in agriculture take these specialized meats courses. The rest of our program is also very closely integrated with our meats program. For example, we like every animal, every market animal that our students are exposed to in any course to end up in the meat laboratory and have the final evaluation handled in such a way that the students are able to see the animals in the meat. I just can't talk about the Animal Science program when I talk about a meats program here at Iowa State. We have seven people who spend most of their time as meat specialists. In addition to that there are seven or eight people in other departments who are very closely integrated with their own meat work. For example, Dr. Zimmerman out at the Veterinary Research Institute has worked on the problem of trichina. As many of you fellows know, we have developed practical and effective methods of control to eliminate this very serious problem in our pork supply. Where does the meats program begin? I think it begins with the choice of selection of parentage of the animals that are going to produce the meat. Our next problem is that of reproduction; how are we going to get this animal reproduced? Next in line, the feeding and management, the drugs, the growth promotants and so on that we have found necessary to use more and more as time has gone on. Through the problems

concerned with slaughter weight and the condition of the animals as the producer decides to market them, through the packing plant, the killing, the chilling, the processing and so on and down to the final consumer with all the problems of sanitation and preservation that are inherent in the meat industry.

How do we tackle a problem of this magnitude? It seems to me the only way is to field a team of as many interested and capable research people as is possible and that is what we have tried to do here. When I look at our staff presently engaged in our meats program as compared to the past, I am impressed with the fact that it has shown considerable growth. However, when I look at our present staff as compared with the problems that we are really confronted with, like tissue residues, drugs, the composition of our muscle protein and all of the other problems, our efforts seem relatively puny. So I think as time goes on as we get more general recognition, of the importance of these problems, we can see additional growth in our research program. Now we don't think here at Iowa State that we are going to work on all these problems or that we are going to put anybody out of the business so to speak, but we would like to feel that we are one of the team members and are making a significant contribution to the program as a whole. One final thing that concerns some of our people at times that I think I should mention and that has to do with alternative sources of protein. I, frankly, am glad to see these coming because I think we are going to need some help. If peoples' appetite for protein increases as our population increases and so on, we are going to find it a greater and greater task to continue to provide all the protein that people need in the form of animals. Now I'm not really afraid that we are going to lose a lot of business, that is that the meat industry is going to lose a lot of business to alternative sources of protein. I think it is going to take all of our efforts and our combined efforts and, I hope, cooperative efforts to develop our protein sources to be just as palatable and just as nutritious as we possibly can make them. There's just no other way to look at it when you look at the ability of the world to produce food. The problem of refining proteins and getting them into a palatable, nutritious and safe form, is going to have to be a big overall cooperative program and I commend you people for approaching it in that manner. Thank you.

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C. E. ALLEN: Thank you, Dr. Hazel, for those well chosen remarks. Now to move into our first committee report. This committee has as its title "Meat Animal Growth and Development" and the chairman is Dr. John Romans. John, I believe that Iowa State is your alma mater. John received his Bachelor's degree here and his M.S. and Ph.D. degrees at South Dakota State University and is now at the University of Illinois. John, I will turn the program over to you and you can introduce your speakers.

CHAIRMAN, JOHN R. ROMANS: Thank you, Gene. I would ask this morning that you permit me just a brief word of introduction for our program before we proceed ahead with the two very distinguished speakers we have listed for this program.

Actually it's needless to reiterate before this group the importance of the knowledge about fat accumulation in a meat producing animal. Fat accumulation is not termed growth by many people, but nevertheless it does accumulate in an animal as the animal grows. This is logical and basic information. We in this meat business certainly don't need a fat-free meat animal. However, we do need to control the deposition of fat so that we can maintain the quality of our product and yet produce a meat product economically and efficiently. I think we would agree that all of us here are interested and involved in the economic and efficient production of meat. Some of us look at it from a little different approach, a somewhat different detail or angle than others, but nevertheless we all are involved in it. Therefore, this particular program this morning on Meat Animal Growth and Development will actually be extremely valuable to everyone of us here.

Just a word about how we are going to approach this problem. We have a two pronged attack. We are going to begin with a discussion of the cellular development of the adipose cell--a logical place to start--the basic unit--the adipose cell. Following that we will have a discussion of hormonal influences on fat deposition; which is, of course, a wide field and we will get the latest information on that. So we hope that this will give us a real current picture on the development and growth of adipose tissue or fat in the meat producing animal.

Our first speaker this morning hails from Minnesota originally. He was educated at South Dakota State--a Bachelor's degree there. He gave me a small sheet with some biographical information, but he neglected to put down some of his undergraduate activities. I do remember that he was student body president at that time and did an excellent job at that. But since then, of course, he's become a high level scientist, having received further education at the University of Wisconsin--his M.S. and Ph.D. Since leaving Wisconsin he has completed the U.S. Army Rotary Wing Aviation Flight School and now is assigned to the U.S. Army Aeromedical Research Laboratory where he is in the Biochemistry Branch of Aviation Medicine Research Division. I would like to point out that he is in the U.S. Army. If you will look at your program, we have offended Dr. Anderson by indicating that he is in the Air Force but that is not true, he is in the Army. He belongs to the American Society of Animal Science, The Institute of Food Technologists and the American Meat Science Association. He was honored by Phi Kappa Phi, Gamma Sigma Delta and Sigma Xi. Dave's research has been right in this area of the adipose cell development and he has very recently been working in this field. We are pleased to have such a highly qualified speaker for this subject and are really looking forward to Dave's presentation.

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