

## Directors Digest Listings

NO.	Title	Use	Product	Date
89	Animal By-Products in Feed for Catfish	Aquaculture	Protein	11-71
103	Catfish Diet Containing Meat and Bone Meal Give Excellent Performance	Aquaculture	Protein	1-73
207	Rendering Industry and Aquaculture	Aquaculture	Protein	1-91
208	U.S. Aquaculture Ready for Expansion, Says Specialist	Aquaculture	Protein	1-91
209	Aquaculture Feed Market Will Grow at 4.4% Annually to 1995	Aquaculture	Protein	1-91
210	New Species, Techniques Change Aquaculture Feed Demand	Aquaculture	Protein	1-91
211	Least-Cost Ingredients Work Well for Catfish Feeds	Aquaculture	Protein	1-91
212	A Comparison of Several Animal By-Product and Plant Proteins as Sources of Essential Amino Acids for Catfish	Aquaculture	Protein	1-91
213	Use of Animal Protein in Catfish Feeds	Aquaculture	Protein	1-91
214	Use of Meat and Bone Meal in Practical Catfish Feeds-Pond Study	Aquaculture	Protein	1-91
215	Nutritional Response of a Western Hemisphere Shrimp, <i>Penaeus Vannamei</i> , To Meat and Bone, Feather, and Poultry By-Product Meals	Aquaculture	Protein	1-91
263	Replacing Fish Meal Protein in Salmonid Fish Diets	Aquaculture	Protein	1-95
291	Executive Summary of FPRF Projects	Aquaculture	Protein	10-99
297	FPRF Executive Summary of Current Projects	Aquaculture	Protein	4-00
298	Use of Rendered Animal Protein Ingredients in Dish Feeds	Aquaculture	Protein	8-00
299	Poultry By-Product Meal in Aquaculture Diets	Aquaculture	Protein	8-00
301	Combinations of Rendered Animal Protein Ingredients as Protein Sources for Salmonid Diets (97B-3)	Aquaculture	Protein	8-00
305	Rendered Animal By-Products	Aquaculture	Protein	2-01
310	Rendered Non-Marine Animal By-Products as Shrimp Feed Components	Aquaculture	Protein	7-01
291	Executive Summary of FPRF Projects	Aquaculture	Fat	10-99
297	FPRF Executive Summary of Current Projects	Aquaculture	Fat	4-00
305	Rendered Animal By-Products	Aquaculture	Fat	2-01
276	Animal Fats: Properties, Supplies, Markets and Research	Bio-Fuel	Fat	1-96
282	Biodiesel: Present and Future	Bio-Fuel	Fat	7-96
291	Executive Summary of FPRF Projects	Bio-Fuel	Fat	10-99
295	Properties of Biodiesel/Diesel Blends	Bio-Fuel	Fat	12-99
297	FPRF Executive Summary of Current Projects	Bio-Fuel	Fat	10-99
306	Animal Fats and Recycled cooking Oils	Bio-Fuel	Fat	3-01
311	Biodiesel Cold Flow Characteristics	Bio-Fuel	Fat	9-01

291	Executive Summary of FPRF Projects	Bio-Fuel	Protein	10-99
297	FPRF Executive Summary of Current Projects	Bio-Fuel	Protein	4-00
184	Effect of Meat and Bone Meal Containing Salmonella on Gastrointestinal Microflora and Swine Performance	Biosecurity	Protein	2-90
197	Bovine Spongiform Encephalopathy; Considerations for the American Rendering Industry	Biosecurity	Protein	4-90
203	Stability of the Pseudorabies Virus (PRV) in Meat and Bone Meal (MBM) and intermediate Rendering Products	Biosecurity	Protein	9-90
204	Anti-Microbial Properties of Commercial Organic Acid Compounds in Meat and Bone Meal	Biosecurity	Protein	12-90
205	Position Paper on Bovine Spongiform Encephalopathy (BSE) For the Rendering Industry to Use for Reference and Media Material	Biosecurity	Protein	12-90
206	Update on Disease-Related Matters and Research Articles	Biosecurity	Protein	1-91
275	Bovine Spongiform Encephalopathy (BSE)	Biosecurity	Protein	1-96
290	Stability of Pseudorabies Virus (PRV) in Meat and Bone Meal and Intermediate Rendering Products	Biosecurity	Protein	7-98
291	Executive Summary of FPRF Projects	Biosecurity	Protein	10-99
297	FPRF Executive Summary of Current Projects	Biosecurity	Protein	4-00
307	Sterilization	Biosecurity	Protein	3-01
308	BSE/TSE Transmission Research	Biosecurity	Protein	4-01
291	Executive Summary of FPRF Projects	Biosecurity	Fat	10-99
297	FPRF Executive Summary of Current Projects	Biosecurity	Fat	4-00
307	Sterilization	Biosecurity	Fat	3-01
279	Current Findings In Equine Nutrition	Horses	Protein	7-96
250	Utilization of Fat-Supplemented Diets by Horses	Horses	Fat	5-92
251	Nutrition for the High Performance Horse	Horses	Fat	4-89
252	Athlete - Using Fats to Improve the Performance of Racehorses	Horses	Fat	-91
279	Current Findings In Equine Nutrition	Horses	Fat	7-96
243	High-Fat Pet Foods	Pet	Fat	8-89
244	Premium Pet Foods Take Increasing Share of Market	Pet	Fat	5-92
245	Added Lard and Palatability of Dog Food	Pet	Fat	6-92
246	Bleachable Fancy Tallow and Acceptability to Pointers	Pet	Fat	6-92
247	Added Yellow Grease and Palatability of Dog Food	Pet	Fat	6-92
248	Acceptability and Digestibility of Diets Made with Various Sources and Levels of Fat by Adult Cats	Pet	Fat	5-92
98	Processing Influences Available Lysine in Dried	Poultry	Protein	8-72

	Blood			
116	New Drying Techniques Preserve Lysine in Blood Meals	Poultry	Protein	2-72
171	The Value of Animal Protein Supplements in Poultry Rations	Poultry	Protein	1-90
172	Determination of the Value of Feather Meal in Broiler Diets	Poultry	Protein	1-90
173	New Nutritional Evaluation of Blood Meal and Feather Meal for Turkeys	Poultry	Protein	1-90
174	Consideration for the Use of Animal By-Products in Poultry Diets	Poultry	Protein	1-90
181	Animal Protein Experiments	Poultry	Protein	1-90
182	Formulating Swine and Poultry Rations Using Flash-Dried Blood Meal	Poultry	Protein	1-90
261	Evaluation of the Phosphorus Provided by Proteins in the Diet of Broiler Chickens	Poultry	Protein	1-95
278	Utilization of Rendered By-Products as Soybean Meal Replacement in Starter Turkey Rations	Poultry	Protein	7-96
280	Availability for Polts of Phosphorus from Meat and Bone Meals of Different Particle Sizes	Poultry	Protein	7-96
284	Calcium and Phosphorus Sources For Poultry Feeds	Poultry	Protein	6-97
287	Rendered By-Products as Soybean Meal Replacement in Turkey Rations	Poultry	Protein	7-97
288	Metabolizable Energy of Meat and Bone Meal	Poultry	Protein	7-97
291	Executive Summary of FPRF Projects	Poultry	Protein	10-99
292	Utilization of High Levels of Ruminant By-Products in Turkey Rations	Poultry	Protein	12-99
296	Effects of Biogenic Amines on Broiler Performance	Poultry	Protein	12-99
297	FPRF Executive Summary of Current Projects	Poultry	Protein	4-00
303	Assessment of Amino Acid, Calcium and Phosphorus Digestibility in Meat and Bone Meal for Growing Pigs and Broiler Chicks	Poultry	Protein	8-00
304	Utilization of High Levels of Meat and Bone Meal in Broiler Diets	Poultry	Protein	9-00
309	Effect of Ash Content on Protein Quality of Meat and Bone Meal	Poultry	Protein	7-01
221	High Oil Corn and the Rendering Industry	Poultry	Fat	4-92
223	The Value of Fat in Poultry Feeds	Poultry	Fat	6-92
224	Supplemental Dietary Fats for Growing Turkeys	Poultry	Fat	6-92
225	Is Kitchen Grease Safe for Poultry?	Poultry	Fat	6-92
226	Fat Utilization in Broiler Rations	Poultry	Fat	6-92
227	Fat in Laying Hen Rations	Poultry	Fat	6-92
228	Effects of Poultry Fat and Yellow Grease on Broiler Performance and Profitability	Poultry	Fat	6-92
260	Energy and Amino Acids for Layers	Poultry	Fat	10-93
267	Fats in Poultry Diets	Poultry	Fat	7-95
270	The Influence of Energy and Protein on Turkeys During the Finisher Period	Poultry	Fat	7-95
272	Comparison of Two Blended Animal Vegetable Fats	Poultry	Fat	7-95

	Having Low or High Free Fatty Acid Content			
273	Rendered Feeds in Swine Feeding	Poultry	Fat	1-96
291	Executive Summary of FPRF Projects	Poultry	Fat	10-99
297	FPRF Executive Summary of Current Projects	Poultry	Fat	4-00
216	The In Vitro Protein Digestion of Meat and Bone Meal to Determine Protein Quality	Quality	Protein	1-91
285	Prediction Equations for Amino Acid (AA) Digestibility in Meat and Bone Meals (MBM)	Quality	Protein	7-97
291	Executive Summary of FPRF Projects	Quality	Protein	10-99
296	Effects of Biogenic Amines on Broiler Performance	Quality	Protein	12-99
297	FPRF Executive Summary of Current Projects	Quality	Protein	4-00
222	Quality Standard for Animal and Plant Fats	Quality	Fat	6-92
249	Antioxidants - Which Ones are Best for Your Petfood Product?	Quality	Fat	6-92
269	Feeding Fats	Quality	Fat	7-95
271	Composition of Commercial Samples of Poultry Oil	Quality	Fat	7-95
272	Comparison of Two Blended Animal - Vegetable Fats Having Low or High Free Fatty Acid Content	Quality	Fat	7-95
276	Animal Fats: Properties, Supplies, Markets and Research	Quality	Fat	1-96
291	Executive Summary of FPRF Projects	Quality	Fat	10-99
297	FPRF Executive Summary of Current Projects	Quality	Fat	4-00
175	Value added Animal Proteins	Ruminant	Protein	1-90
176	Animal Protein Products as Bypass Proteins for Ruminants	Ruminant	Protein	1-90
177	Blood Meal and Feather Meal in Combinations	Ruminant	Protein	1-90
178	Blood Meal-Feather Meal Combinations for Growing Calves	Ruminant	Protein	1-90
179	Use of Meat and Bone Meal as Protein Sources for Beef Cattle	Ruminant	Protein	1-90
180	Feather Meal and Blood Meal as Protein Sources for Beef Cattle	Ruminant	Protein	1-90
181	Animal Protein Experiments	Ruminant	Protein	1-90
185	Role of Meat and Bone Meal, Hydrolyzed feather Meal and Blood Meal in the Diets of New Feedlot Cattle	Ruminant	Protein	3-90
186	The Influence of Increasing Ruminant Undegradable Protein on Growth Rate of Light Growing Steers	Ruminant	Protein	3-90
187	Achievement of Optimum Amino Acid Balance Possible	Ruminant	Protein	3-90
188	Excerpts from NRC's 1989 Edition of Nutrient Requirements of Dairy Cattle	Ruminant	Protein	3-90
189	BST Research is Teaching Us More About feeding cows	Ruminant	Protein	3-90
190	Utilization of Animal By-Product Protein by the Lactating Dairy Cow	Ruminant	Protein	3-90
191	Put Protein Needs of Cows into Perspective	Ruminant	Protein	3-90

192	Utilization of Meat and Bone Meal in Dairy Cattle Rations	Ruminant	Protein	3-90
193	This Digest Will Cover Blended Animal Protein Products that Renderers Have Formulated for Sale to Feed manufacturers and Direct to Milk Producers	Ruminant	Protein	3-90
194	Utilization of Protein in Animal By-Products for Milk Production	Ruminant	Protein	3-90
195	Formulas	Ruminant	Protein	3-90
198	Animal Proteins and Fats in Dairy Herds that Average 26,000 lbs. of Milk	Ruminant	Protein	6-90
199	The Effects of Ruminal Escape Protein or Fat on Nutritional Status of Pregnant Winter-Grazing Beef Cows	Ruminant	Protein	6-90
200	Energy and Protein Rations Important for Lactation	Ruminant	Protein	7-90
201	Fat and Animal Protein By-Products in Dairy Cattle Feeding Programs	Ruminant	Protein	7-90
202	Economics of By-Pass Protein for Ruminants: Re-Evaluation of a 20 Year Old Concept	Ruminant	Protein	8-90
217	Comparing Whole Raw Soybeans Plus Animal By-Product Protein vs Roasted Soybeans as Protein and Energy Supplements to Diets Fed to Dairy Cattle	Ruminant	Protein	4-92
219	Optimal Protein Level and Rumen By-Pass Protein Sources for New Feeder Cattle	Ruminant	Protein	4-92
239	Role of Animal Proteins and Fats in Rations for Dairy Cattle on Pasture	Ruminant	Protein	6-92
262	Development of a Ruminant Meat and Bone Meal and Evaluation of Hair Meal	Ruminant	Protein	1-95
264	Animal Protein By-Products and Liquid feed Supplements in Rations for High-Producing Dairy Cows	Ruminant	Protein	1-95
265	Strategies for Feeding Fat to Dairy Cattle	Ruminant	Protein	1-95
291	Executive Summary of FPRF Projects	Ruminant	Protein	10-99
293	Protein Evaluation of Porcine Meat and Bone Meal	Ruminant	Protein	12-99
297	FPRF Executive Summary of Current Projects	Ruminant	Protein	4-00
300	Protein Evaluation of Porcine Meat and Bone Meal Products	Ruminant	Protein	4-00
196	Fat in Dairy Cow Rations	Ruminant	Fat	3-90
198	Animal Proteins and Fats in Dairy Herds that Average 26,000 lbs. of Milk	Ruminant	Fat	6-90
199	The Effects of Ruminal Escape Protein or Fat on Nutritional Status of Pregnant Winter-Grazing Beef Cows	Ruminant	Fat	6-90
200	Energy and Protein Ratios Important for Lactation	Ruminant	Fat	7-90
201	Fat and Animal Protein By-Products in Dairy Cattle feeding Programs	Ruminant	Fat	7-90
221	High Oil Corn and the Rendering Industry	Ruminant	Fat	4-92
237	Fat in Dairy Cattle Rations	Ruminant	Fat	6-92
239	Role of Animal Proteins and Fats in Rations for Dairy Cattle on Pasture	Ruminant	Fat	6-92
240	Positioning Animal Fat in Dairy Cattle Rations	Ruminant	Fat	6-92

241	Feeding Value of Fat in Diets for Feedlot Cattle	Ruminant	Fat	6-92
242	Added Fat Diets Provide the Greatest Return Per Head	Ruminant	Fat	8-91
253	Hydrolysis of Fat in the Rumen	Ruminant	Fat	3-93
254	Feeding of Fat During Heat Stress Conditions and combinations of Fat Sources	Ruminant	Fat	3-93
258	Role of Tallow as a Rumen Inert Fat for Dairy Cows	Ruminant	Fat	8-93
264	Animal Protein By-Products and Liquid Feed supplements in Rations for High-Producing Dairy Cows	Ruminant	Fat	1-95
265	Strategies for feeding Fat to Dairy Cattle	Ruminant	Fat	1-95
266	The Role of Fat in Maximizing Milk Yield in High Producing Dairy Cows	Ruminant	Fat	7-95
274	University of Illinois 1996 Dairy Reports	Ruminant	Fat	1-96
283	Fat Quality and Feeding Value of Fat for Feedlot Cattle	Ruminant	Fat	7-96
291	Executive Summary of FPRF Projects	Ruminant	Fat	10-99
297	FPRF Executive Summary of Current Projects	Ruminant	Fat	4-00
238	Utilization of Fat in Dairy Cattle Rations	Ruminant	Fat	6-92
164	Why is Yellow Grease Soil Spray of Importance for us Today?	Soil	Fat	6-88
291	Executive Summary of FPRF Projects	Soil	Fat	10-99
297	FPRF Executive Summary of Current Projects	Soil	Fat	4-00
98	Processing Influences Available Lysine in Dried Blood	Swine	Protein	8-72
144	Value of Flash-Dried Blood Meals in Swine Diets	Swine	Protein	4-79
169	Meat and Bone Meal in Swine Diets	Swine	Protein	6-89
181	Animal Protein Experiments	Swine	Protein	1-90
182	Formulating Swine and Poultry Rations Using Flash-Dried Blood Meal	Swine	Protein	1-90
183	Feather Meal - A New Source of Protein for Swine	Swine	Protein	1-90
218	Animal Products in Swine Feeds	Swine	Protein	4-92
220	Blood Products are Not Created Equal	Swine	Protein	
233	Plasma Protein in High Fat Diets	Swine	Protein	6-92
255	Meat and Bone Meal: The Underutilized Raw Material	Swine	Protein	3-93
256	Recent Developments in Starter Pig Nutrition	Swine	Protein	7-93
257	A Study of the Replacement Value of Meat Meal in Corn Soybean Meal Rations for Growing Pigs	Swine	Protein	7-93
273	Rendered Feeds in Swine Feeding	Swine	Protein	1-96
289	Swine Nutrition Today and in the Next Century	Swine	Protein	7-97
291	Executive Summary of FPRF Projects	Swine	Protein	10-99
297	FPRF Executive Summary of Current Projects	Swine	Protein	4-00
302	Assessment of the Bioavailability of Phosphorus in Meat and Bone Meal for Growing Pigs and Broiler Chicks	Swine	Protein	8-00
303	Assessment of Amino Acid, Calcium and	Swine	Protein	8-00

	Phosphorus Digestibility in Meat and Bone Meal for Growing Pigs and Broiler Chicks			
221	High Oil Corn and the Rendering Industry	Swine	Fat	4-92
229	Fat in Swine Diets	Swine	Fat	6-92
230	The Role of Fat in Sow Diets	Swine	Fat	6-92
231	The Effect of Copper on the Fat Utilization of Nursery Pigs	Swine	Fat	6-92
232	Practical Starter Diets for Early Weaned Pigs	Swine	Fat	6-92
234	Tallow for Feeder Pigs	Swine	Fat	5-92
235	A Perspective on Use of Fat in Growing and Finishing Swine Diets	Swine	Fat	6-92
236	Use of Inedible Fats in Swine Diets for Dust Control	Swine	Fat	6-92
259	Influence of Dietary Fat on Swine Carcass Quality	Swine	Fat	8-93
268	Feeding Programs For Swine	Swine	Fat	7-95
273	Rendered Feeds in Swine Feeding	Swine	Fat	1-96
277	Space Allocation and Diets Response of Pigs to Space Allocation and Diets Varying in Nutrient Density	Swine	Fat	1-96
281	Impact of Level of Immune System Activation on Response of Pigs to Dietary Energy Source	Swine	Fat	7-96
286	Benefits of Supplemental Fat for Pigs	Swine	Fat	7-97
289	Swine Nutrition Today and in the Next Century	Swine	Fat	7-97
291	Executive Summary of FPRF Projects	Swine	Fat	10-99
294	Effects of Dietary Fat on Lactation and Reproductive Efficiency of Swine	Swine	Fat	12-99
297	FPRF Executive Summary of Current Projects	Swine	Fat	4-00