

MINUTES
VERTEBRATE PEST CONTROL RESEARCH ADVISORY COMMITTEE MEETING
UCCE Meeting Room, 1710 Soscol Avenue
Napa, California
April 22, 2009

Members Present

Dan Spangler, Chairperson
Ellen Des Jardin-Hirth
Dale Huss
Mark Novak
Dennis Bray
Art Foster
Edward Meyer
Victoria Hornbaker

Members Absent

Robert Timm

Visitors

Charmaine Canlas
Tomm Forgacs
Tom Schmit
Roger Baldwin
Fred Rinder
Al Hom
Sara Krause
Katherine Horak
Stephanie Shwiff

Ron Eng
M.A. Bari
Scott McCalley
Vince Guise
Robert Blumenthal
Cathy Roache

INTRODUCTIONS

Chairman, Mr. Dan Spangler, called the meeting to order at 8:00 a.m. followed by introductions of Committee members and guests.

BAGLEY-KEENE OPEN MEETING ACT AND VERTEBRATE PEST CONTROL RESEARCH ADVISORY COMMITTEE COMPLIANCE

Mr. Dan Spangler and the Committee acknowledged the Bagley-Keene Open Meeting Act and the Vertebrate Pest Control Research Advisory Committee (VPCRAC) compliance.

APPROVAL OF MINUTES

Motion: Dale Huss moved that the Committee approve the minutes of the October 29, 2008 meeting with corrections. The motion was seconded by Art Foster and passed unanimously.

FINANCIAL REPORT UPDATE

Ms. Victoria Hornbaker provided the Committee with information on the program budget, revenue, expenditures, and projections. Last year's program budget for 2008/09 was authorized at \$1,000,000 with an administrative budget authorization of \$244,000. The 2008/09 administrative program expenditures were \$162,752 and encumbrances are \$340,016.

Ms. Hornbaker mentioned that the Committee has the flexibility to increase the assessment rate up to \$1.00 per pound in order to build more revenue. Mr. Dale Huss stated that as a grower, it would be appreciated not to have another increase in the assessment rate, so it is recommended to maintain the \$1,000,000 budget for the next fiscal year. Ms. Hornbaker stated that the Committee has never spent the entire \$1,000,000 amount budgeted in the past. Discussion followed, and the Committee agreed that increasing the assessment rate is not feasible and would prefer to protect the revenue source from growers.

Ms. Hornbaker then asked the Committee to approve a budget for the 2009/10 fiscal year.

Motion: Dale Huss moved that the Committee approve a \$1,000,000 program budget with an administrative budget in the amount of \$244,000 for the 2009/10 fiscal year. The motion was seconded by Arthur Foster and passed unanimously.

COMMITTEE MEMBERSHIP: CONSIDERATION AND RECOMMENDATION FOR NEW MEMBERS

Mr. Dan Spangler welcomed Edward Meyer, newly appointed public member, to the Board.

Ms. Hornbaker stated that at the last meeting, three potential candidates for the CSU vacancy position were brought up to the Committee for review. Ms. Hornbaker spoke to the candidates in order to assess their level of interest and commitment to serving on the Board. Dr. Alan Muchilinski from California State University, Los Angeles declined due to recently taking on a new position as a dean and could not commit his time to the Committee. Dr. Benjamin Sacks from California State University, Sacramento could not be contacted. However, Dr. Paul Stapp from California State University, Fullerton seemed excited and showed high interest in joining the Board. Ms. Hornbaker then recommended that the Committee extend an invitation to Dr. Stapp for the vacant CSU position.

Motion: Dale Huss moved that the Committee recommend, to the Secretary, that nominee Dr. Paul Stapp be appointed as a member to the Vertebrate Pest Control Research Advisory Committee to fill the California State University member vacancy. The motion was seconded by Ellen Des Jardin Hirth and passed unanimously.

Ms. Hornbaker mentioned that retired Committee member Edward Tully's position is still vacant. She has been in contact with Matt Burns, president from the California Cattlemen's Association, and has asked for names of possible interested members and is pending information from him. An invitation for the vacant position could be placed on the CDFA website, if necessary.

COMMITTEE MEMBER RECOGNITION

Ms. Hornbaker asked the Committee to recommend the purchasing of recognition plaques for Committee retirees, Mr. Edward Tully and Mr. Duane Schnabel, not to exceed \$90 per plaque.

Motion: Dennis Bray moved that the Committee approve the purchase of two recognition plaques for retired Committee members Edward Tully and Duane Schnabel. The motion was seconded by Dale Huss and passed unanimously.

STATUS OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S RISK MITIGATION DECISION FOR TEN RODENTICIDES

Ms. Hornbaker updated the Committee on the USEPA risk mitigation for rodenticides. CDFA received approval for re-registration for chlorophacinone products with the stipulation that the products be made restricted-use only and with extensive label changes, directing to remove all commensal rodents on the labels. EPA looks at house mice and roof rats as commensal rodents and not as agricultural pests, even though there is notable crop damage from these pests. CDFA is having challenges proving to EPA that the chlorophacinone bait is efficacious in a field situation. This opens up opportunities for studies that would focus on amendments to current labels or separate labels to address the issue. Ms. Hornbaker suggested to the Committee that she can inquire with legal staff from CDFA and is willing to do an administrative hearing. There is an 18-month window from September 28, 2008 to amend the labels and to call a hearing. Ms. Hornbaker will prepare a letter for the chairperson's signature.

So far, it is unknown of any impacts to the CDFA program at this time. There could be a possible reduction in revenues. San Bernardino County asked to be taken off as a mixer and will not manufacture bait any longer. San Diego County is in the process of moving their agricultural offices and is unsure if they will have space to manufacture once they have moved. In addition, San Luis Obispo and Madera counties will no longer be selling bait due to lack of manpower.

OUTCOME OF MARCH 25, 2009 DPR MEETING

Ms. Hornbaker had the opportunity to meet and discuss with DPR the ability to use restricted-use products in small non-commercial agricultural ranchettes. Once the products are deemed restricted-use, users will have to be either private applicators or PCO, which means that an exam must be taken and the user must be certified in order to purchase and use the baits. There is the potential that a large amount of people currently using the baits are not licensed, but will need to be once the products are restricted-use. The exams, which are administered by the counties, are very broad and neglect rodenticide use and safety. A meeting with DPR was arranged to discuss ideas to maintain the use of rodenticides once they become restricted, keeping them legally available to the people that need to use them. Terry Salmon has worked on a kiosk project that provides education and an exam that focuses on rodenticides. He demonstrated the kiosk at the meeting with DPR. Concerns with issues over staffing and the challenges ranchettes may face if rodenticides can no longer be available were discussed. Developing a curriculum and extending the number of kiosks to be available for rodenticide users to be licensed were also mentioned. After the meeting, DPR denied the idea of an exam just for rodenticides. The private applicator exams are mandated federally and that it is something that DPR cannot do. Ms. Hornbaker then stated that she will be willing to take the issue to EPA.

CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION'S REEVALUATION OF SECOND GENERATION ANTICOAGULANT BAITS

In Ms. Denise Webster's absence from the meeting due to illness, Ms. Hornbaker briefed the Committee on the Status of the Department of Pesticide Regulation's (DPR) re-evaluation of second-generation anticoagulants. Re-evaluation is the tool DPR utilizes to request registrants to submit information to determine the nature or the extent of a potential pesticide hazard and then create strategies to mitigate the hazard. The initiation of a re-evaluation occurs when DPR has determined that a pesticide has caused or is likely to cause a significant adverse effect. Possible outcomes of a re-evaluation are: 1) no further mitigation measures are needed, 2) mitigation measures needed include regulation, permit conditions, and label amendments, and 3) adverse effects cannot be mitigated and pesticide product(s) must be canceled. A brodifacoum re-evaluation was initiated on December 30, 1999 on the basis that there was concern for California wildlife being exposed and adversely affected by current registered users. Since 1999, the Department of Fish and Game has identified several more incidents of non-target wildlife exposures. U.S. EPA's risk mitigation decision to reduce wildlife exposures and ecological risks required sale and distribution limits intended to minimize availability of second generation anticoagulant products to residential consumers and require use of bait stations for all outdoor, above-ground uses. U.S. EPA's risk mitigation decision is consistent with DPR's proposed mitigation measures. DPR will finalize the re-evaluation pending the outcome of U.S. EPA's efforts.

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE REGISTRATION ISSUES

Ms. Hornbaker provided an update on the California Department of Food and Agriculture's (CDFA) chlorophacinone bract bait phase-out. Last year, CDFA worked with USDA to bring in zinc phosphide treated bracts for vole control in artichokes due to resistance issues with chlorophacinone. Unfortunately, efficacy has not been evident at this time with the zinc phosphide bracts. In order to obtain the zinc registration, CDFA had to give up SLN for the bracts, so the SLN for the bracts have an expiration of April 30, 2009. However, CDFA will be meeting via conference call with DPR to see if an extension can be made or, if possible, to maintain the chlorophacinone bract label so that the bracts can continue to be used to offset the lack of efficacy of the zinc phosphide bracts. Ms. Hornbaker put in a request for a grant in the amount of \$83,000 to study field efficacy of zinc phosphide.

Ms. Hornbaker provided a brief update on the submission of final printed labels for chlorophacinone products. CDFA is currently working on amending the products. There are inconsistencies with the language that EPA is asking to add to the labels. The information about the inconsistencies and problems with the labels will be gathered and shared with the Committee at the October 2009 meeting. Final labels will not be submitted to EPA before that time.

LEGISLATIVE/REGULATORY UPDATE

Ms. Hornbaker briefed the Committee on Senate Bill 481 (Cox). This bill would amend the California State Fish and Game Code to address management of wildlife hazards at public use airports. The bill gives Federal authority to the USDA Wildlife Services and provides the USDA more leeway on dealing with wildlife issues at airports and takes away State authority. This is a Department of Fish and Game issue and not a CDFA related issue.

Ms. Hornbaker briefed the Committee on Senate Bill 709 (Hollingsworth). This bill would make technical, nonsubstantive changes to the existing violation of taking or possessing birds, mammals, fish, amphibians, and reptiles. This is a spot bill that will be monitored by CDFA.

QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

Ms. Hornbaker provided the Committee with information regarding the Quality Assurance/Quality Control Program (QA/QCP). The last QA/QCP sampling on baits occurred in 2005. Ms. Hornbaker recommended to the Committee that a proposal for a sampling project be approved in order to provide assistance and resources to the formulating county agricultural commissioners to ensure that the formulating county agricultural commissioners can consistently produce material that is in compliance with the CSF and certified limits.

Motion: Ellen des Jardin Hirth moved that the Committee fund a proposal by Victoria Hornbaker entitled, “Quality Assurance/Quality Control Sampling Protocol for CDFA Rodenticide Baits” in the amount of \$18,513 for the 2009/10 fiscal year. This project permits the sampling of all CDFA-registered rodenticides formulated by county agricultural commissioners to ensure rodenticides are produced in compliance with the certified limits of the Confidential Statement of Formula. Annual random sampling will then occur in subsequent years. The motion was seconded by Mark Novak and passed unanimously.

RESEARCH UPDATE

National Wildlife Research Center

Ms. Stephanie Shwiff provided an update to the Committee on the research project entitled, “Economic Impacts of Rodent and Bird Damage to Vulnerable Crop/Commodity-Producing Counties.” The first objective of this project is to determine the empirically reported nature and magnitude of damage caused by rodents and birds to major crops and commodities. Then provide a critical review and analysis of this literature. The second objective is to develop scenario-based projections of the magnitude of these economic losses within the state. And the final objective is to conduct an IMPLAN analysis of the job and revenue impacts attributed to the projected rodent and bird-caused losses of the impacted crops and commodities for the 10 leading agricultural counties of California. For the first objective, which has been completed, estimates of damage were calculated by doing extensive literature reviews of various journals, reports, and return studies. Field interviews with growers, county agricultural commissioners, county officials, and University of California faculty were also held from October 7-17, 2008. With completion of Objective 2, input-output modeling techniques were used to determine the total economic impacts (the direct, indirect, and induced costs) to ten important agriculture counties in California. Two economic impacts of bird and rodent damage are: pest damage decreases the producer’s yield per acre which, in effect, increases the cost of production for a particular yield per acre; and because pest damage exists, the producer has incentive to spend money on pest control. While pest control decreases the amount of pest damage that would have existed without control, pest control does have a monetary cost per acre. For the third objective, ten counties have already been identified for this project based on total agricultural production, cash receipts from targeted crops, and highest percentage or concentration of targeted crops. The input-output analysis modeled the economy and showed multiplier effects of

bird and rodent damage as well as a loss to the economy, effecting county revenue and jobs. Plans for the next phase of the study include the finalization of the report due by September 2009, determining price effects by examining the potential impact of crop loss on prices, and determining the impact of pesticides by incorporating pesticide costs by adding the costs to the input-output model. Ms. Shwiff requested that the Committee add an additional segment and cost extension to the current proposal, to include the economic impacts of the sale of pesticides.

Motion: Dennis Bray moved to amend the current contract with the National Wildlife Research Center (CDFA Contract #07-0377) to increase the amount by \$26,000 from \$98,728 to \$124,728. The motion was seconded by Dan Spangler and passed unanimously.

Dr. Katherine Horak provided an update to the Committee on the research projects entitled, "Development of a Pharmacokinetic Computer Model to Assure the Continued/Expanded Use of Anticoagulant Rodenticides" and "Pharmacokinetic Studies of Kestrels and Owls for Validating the CDFa/USDA Rodenticide PBPK Model." The major hurdle for the continued use of anticoagulant rodenticides is the non-target secondary hazard. The current risk analysis approach used by the USEPA overestimates anticoagulant rodenticide risks to non-target species. This research project proposes that the CDFa and USDA take the lead in rodenticide risk assessment development and incorporate physiologically based pharmacokinetic (PBPK) modeling into the risk assessment process. This approach uses currently known anticoagulant tissue residue data to estimate residues of anticoagulants in any animal tissues using computer-modeling techniques and then extrapolates these tissue residues to other species. The Food and Drug Administration has been using this approach to determine risks from drugs to humans using laboratory animals as surrogate species. Currently, the research project has focused on the development of the PBPK model for anticoagulant rodenticides that uses calculus to estimate the residues of anticoagulants in various animal tissues. Dr. Horak then discussed the research goals of this project, which is to develop a PBPK model for two anticoagulant rodenticides and two species, using rats and quails (mammal and avian models). Phase I, which has been completed, involved conducting dose versus mortality studies for warfarin and diphacinone in rodents and birds. For Phase II, this consisted of administering sub-lethal doses at multiple time intervals to determine and establish a relationship between blood clotting time and rodenticide tissue concentrations. Liver, muscle, and blood diphacinone residue analysis are currently in progress, which is a timely process. Phase III has been completed, which was the development of a physiologically based pharmacokinetic-pharmacodynamic model to predict the probability of mortality and tissue residues of warfarin and diphacinone in rodents and birds. Lastly, Phase IV proposes to validate the model by developing a small-scale study with wildlife avian species of interest. A study protocol by the United States Geological Survey Patuxent Wildlife Research Center has been completed and approved. Funding was approved in September 2008, and kestrel dosing will begin in early summer of 2009.

Dr. Katherine Horak provided a progress report to the Committee on the research project entitled, "Using Liver Microsomes to Assess Resistance of Chlorphacinone and Diphacinone in Meadow Voles." Rodenticide chlorophacinone was evaluated and found to be much less effective than when introduced about 20 years ago to control meadow voles (*Microtus californicus*) in artichoke fields within Central California. University of California researchers found that the baiting strategies used were likely to increase the chances of developing genetic resistance in the target population. Anticoagulant resistance in other locations has been linked to enzyme activity, which is carried out in the liver microsomes. A brief overview was presented on a two-week experiment on a rat treated with 50 ppm diphacinone bait with no tetracycline hydrochloride and a male Wistar rat treated with chlorophacinone. According to the study, chlorophacinone did not metabolize as well as diphacinone. Liver microsomes from voles were

collected, in which the liver was cleaned with a saline solution to remove the blood contents, frozen, and then brought back to the lab to extract the microsomes using a centrifuge procedure. The in-vitro liver microsome experiments were used to assess resistance to the anticoagulant chlorophacinone and to see if resistance can be assessed based on metabolism. This resistance can be evaluated and the synergism between anticoagulants and agents such as antibiotics can be evaluated to assess their impact on resistance and evaluate synergism. The in-vitro experiments can generate data much more efficiently and multiple interactions can be studied much more effectively than with live animal studies. Meadow voles from chlorophacinone resistant and non-resistant populations were trapped last spring In Davis, where the non-resistant population existed, 35 voles were trapped and 36 voles were trapped in Castroville (resistant population) over a week-long period. Blood samples and liver microsomes from both sets of meadow voles were collected afterwards, and those microsomes were used to evaluate the metabolism of both chlorophacinone and diphacinone. A significant difference between the susceptible and resistant voles was noted. The voles from Castroville metabolized chlorophacinone and diphacinone and were much more resistant than the voles from Davis. This resistance can be evaluated and the synergism between anticoagulants and agents such as antibiotics can be evaluated to assess their impact on resistance. In summary, use of the antibiotic tetracycline hydrochloride reduces the dose of diphacinone required. Therefore, lower residues of diphacinone are present by up to four times. Lower proportions of metabolites are present on average due to the drug interaction between the antibiotic and the anticoagulant. Dr. Horak then spent time looking at what enzymes metabolized different drugs and ran numerous inhibitor studies with the leftover samples to discover which enzyme was responsible for most of the metabolism in the Castroville voles. Microsomes from the Castroville voles were incubated and inhibited with pomegranate juice which reduced chlorophacinone metabolism by 29 percent. It is possible to add juice to the chlorophacinone formulation for better effectiveness, which is a starting point for another research study proposal.

Dr. Katherine Horak provided a brief update to the Committee on the research project entitled, "Using Liver Microsomes to Screen Anticoagulant/Antibiotic Formulations for Ground Squirrels and Pocket Gophers." This study is still in progress. Pocket gophers and California ground squirrels will be collected and tested using the same liver-testing methods and extraction method of microsomes used in the previous study on meadow voles, focusing on the interactions of antibiotics and anticoagulants. Trapping locations and times have been scheduled.

Dr. Katherine Horak provided a brief update to the Committee on the research project entitled, "An Investigation of the Effects of Vitamin K-Rich Plant Food on the Efficacy of Diphacinone on Voles." This project is pending a cooperative agreement and is waiting for funding to be available.

University of California

Dr. Robert Coates provided an update on the research project entitled, "Evaluation and Control of Wild Turkey Damage in California Vineyards." Three main objectives of this project are to assess the actual extent and significance of damage caused by wild turkeys in vineyards, to identify alarm calls and distress calls that could be used to deter turkeys away from the vineyards as an alternative to trapping or shooting. In addition the study hopes develop control strategies that will be useful for keeping the turkeys away from the vineyards and to measure any changes of damage from using the alarm or distress calls. Research activities included the creation of an on-line survey to growers, the testing of various calls (wild turkeys, domesticated turkeys, crow chicks, etc.) for effectiveness, the identification of 12 test sites, the measurement of turkey damage, and the recording of videos showing turkeys in the process of damaging

crops. Unfortunately, wild turkey distress calls could not be obtained. There were 100 respondents of the on-line survey from 19 counties, and approximately 43 percent of them believed to have turkey damage. Of the 12 study sites identified for damage assessments, six sites were located in the Napa Valley area and the other six sites were in the foothills. During the first year of the project, 20 vines were evaluated for turkey damage, ranging from less than one percent damage to over 12 percent damage at one site. From the damage assessment in Year 1, peck damage was more evident in the foothills than in the Napa Valley. For the second year of the project, broadcast units were installed at half of the vineyards, which were set on a timer to play calls at various times throughout the day. The broadcast units used to test a variety of calls did not work to deter turkeys and reduce damage, and there were no significant test results from the data and video monitoring collected to make a valid conclusion.

Dr. Terry Salmon provided an update to the Committee on the VPCRAC web site project. The new website is located at www.vpcrac.org. There are 111 VPCRAC completed funded projects, and 104 are currently posted online. Of the 104 projects, 89 are available for viewing on the website. Of the current projects, 15 are available for viewing. The database of projects now includes a search engine, which can be explored by principal author, title, or phrase search. The Vertebrate Pest Control Handbook has also been posted online and is accessible on the website.

Dr. Terry Salmon provided an update to the Committee on the research project entitled, "Efficacy of Oat and Pellet Anticoagulant Baits Combined with Pretreatment of Oat and Pellet Zinc Phosphide Baits and Implications for Secondary Hazard Management." The goal of this project is to treat with zinc phosphide pellets or oats, and then follow treatments with anticoagulants pellets or oats. This should result in less anticoagulant secondary hazard risk, although there is a possibility that the study could be impacted by bait shyness. Dr. Salmon proposed to change his original field protocol from using a standard EPA evaluation to a new protocol that uses the same broadcast treatments but treats relatively large squirrel sites that have been identified with zinc phosphide. Squirrels on the sites will then be identified after 48 hours, and the plots will be treated on day one and day five. Fieldwork for this project with the new field protocol started in May 2008 in the Paso Robles vicinity. So far, tests have done reasonably well with plots treated with zinc phosphide oats and pellets. With the oat treatments of anticoagulant, there was significantly better control and fewer squirrels, and no apparent bait shyness problem was found. With the pellet treatments, the trend was the same but for some season, the six control plots lost all of their squirrels. One explanation may be that the pellets may have a longer field life and may have killed the squirrels after 48 hours of the treatment. In theory, with data from preliminary results, zinc phosphide can be followed with anticoagulants.

Dr. Terry Salmon provided an update to the Committee on the research projects entitled, "Development of Gopher Control Demonstration Videos for Online and Kiosk-Based Training and "Vertebrate Pest Control Continuing Education and Outreach for Licensed Trappers and Others Dealing with California Wildlife." Videotaping of pocket gopher control practices has taken place and small video clips have been made and have been integrated into the University of California pest notes system. A web-based training program incorporating quizzes and a final exam has been implemented and is available to the public, which is downloadable for free. This is a correspondence course for those who do not have access to the Internet. A DVD version including the test will be available with a fee. The test will be based on Department of Pesticide Regulation (DPR) requirements for certification, and hourly courses will be provided for credit. Videos, brochures, flyers, pamphlets, and a link to the VPCRAC website will also be available on the web broadcast. Data is based on the Vertebrate Pest Control Handbook, and photos taken from the field will be integrated into the training system. The presentation for the ground squirrel has been completed and is ready to be implemented onto the website. The pocket

gopher demonstration video is complete but narrations are still being recorded. No video tapings have been done for meadow voles, but data has been compiled. The website will be available on May 1, 2009 and approval from DPR has been established.

Dr. Terry Salmon provided an update to the Committee on the research project entitled, "Assessing Some Potential Environmental Impacts from Agricultural Anticoagulant Uses." This project focuses on the potential residues of anticoagulants in the livers of raptors, primarily hawks. In San Diego County, where carcasses of hawks are being tested for the West Nile virus, an agreement has been made to partner up with the veterinarian in order to obtain liver samples from those hawks. Of those carcasses, 41 livers have been submitted to a laboratory in University of California, Davis for anticoagulant counts. Each location where the raptor carcasses were picked up has been mapped using GPS coordinates. The raptors have been classified as either rural or urban to recognize potential exposure. In the cases of the birds that have been tested so far, 39 of the 41 had brodifacoum. No birds so far have tested positive for any of the 1st generation anticoagulant materials. Dr. Salmon is working with the Department of Fish and Game to do a comparable study with birds from the Central Valley, which are more likely to have 1st generation material in their system due to a more agriculturally based area for exposure. Another basis of the project will focus on working with the Environmental Health Department to capture and test the exposure of rodent livers to anticoagulants.

Dr. Terry Salmon provided an update to the Committee on the research project entitled, "Developing a Vertebrate Pest Control Digital Library." Funding is not yet available for this project and there is nothing to report at this time.

Ms. Victoria Hornbaker provided an update to the Committee on the research project entitled, "Vertebrate Pest Research 'NEEDS ASSESSMENT' for California." Funding is not yet available for this project and there is nothing to report at this time.

NEW RESEARCH PROPOSALS

Dr. Paul Gorenzel, University of California, Davis, presented to the Committee a research proposal entitled, "Vertebrate Pest Control Certification, Education, and Outreach." The proposed budget amount is \$306,735.

Dr. Paul Gorenzel, University of California, Davis, presented to the Committee a research proposal entitled, "Food Safety and Rodent Control in Leafy Green Crops- Amended Per VPCRA Request." The proposed budget amount is \$87,986.

Dr. Stephanie Shwiff, United States Department of Agriculture, National Wildlife Research Center, presented to the Committee a research proposal entitled, "Estimating the Direct Economic Damage Caused by Coyotes to Drip Irrigation in California." The proposed budget amount is \$24,057.

Dr. Katherine Horak, United States Department of Agriculture, National Wildlife Research Center, presented to the Committee a research proposal entitled, "Using Liver Microsomes to Screen Anticoagulant/Inhibitor Formulations for Meadow Vole Control." The proposed budget amount is \$72,050.

Dr. Katherine Horak, United States Department of Agriculture, National Wildlife Research Center, presented to the Committee a research proposal entitled, "Vole Population Limitations: Genetics and Metabolism." The proposed budget amount is \$93,500.

Ms. Sara Krause, University of California, Davis, presented to the Committee a research proposal entitled, "Efficacy and Behavioral Effects of Gonacon, a New Wildlife Birth Control Method, on Eastern Fox Squirrels." The proposed budget amount is \$73,802.

RESEARCH PROPOSAL DISCUSSION AND DECISION SESSION

Motion: Dale Huss moved that the Committee fund the research proposal from Paul Gorenzel, University of California, Cooperative Extension, San Diego County, entitled, "Food Safety and Rodent Control in Leafy Crops," in the amount of \$87,986. The motion was seconded by Arthur Foster and passed unanimously.

The Committee made no action to fund the research proposal presented by Dr. Stephanie Shwiff, United States Department of Agriculture, National Wildlife Research Center, entitled, "Estimating the Direct Economic Damage Caused by Coyotes to Drip Irrigation in California."

Motion: Dale Huss moved that the Committee fund the research proposal from Katherine Horak, National Wildlife Research Center, entitled, "Using Liver Microsomes to Screen Anticoagulant/Inhibitor Formulations for Meadow Vole Control," in the amount of \$72,050. The motion was seconded by Ellen Des Jardin Hirth and passed unanimously.

Motion: Victoria Hornbaker moved that the Committee table the research concept from University of California, Cooperative Extension, San Diego County entitled, "Vertebrate Pest Control Certification, Education and Outreach." The motion was seconded by Dale Huss and passed unanimously.

Motion: Victoria Hornbaker moved that the Committee table the research concept from National Wildlife Research Center entitled, "Vole Population Limitations: Genetics and Metabolism." The motion was seconded by Dale Huss and passed unanimously.

The Committee made no action to fund the research proposal presented by Ms. Sara Krause, University of California, Davis, entitled, "Efficacy and Behavioral Effects of Gonacon, a New Wildlife Birth Control Method, on Eastern Fox Squirrels."

NEXT MEETING

The meeting was adjourned at 5:00 p.m. The next Committee meeting will be held in Ventura, CA. The specific date for the meeting is October 7, 2009 from 8:00 a.m. until 5:00 p.m.

SUBMITTED,

Victoria Hornbaker
Secretary

Date