ANSC 330

Animal Nutrition
Course Requirements and Outline
Fall 2016

Instructor Information:

Lead Instructor: Dr. Celina Phillips
Lab Instructor: Ms. Kate Moore
Contact Info: Plumas Hall 210
530-898-4147
Use BB Learn email for all course communications (send to “all instructors” or look up individual instructor names)

Dr. Phillip’s Office Hours: Tuesday: 8:30 am to 11:00 am
                                Wednesday: 8:00 am to 9:30 am
                                Facebook: Wednesday Afternoons
                                By appointment

Ms. Moore’s Office Hours: TBD

*NOTE: The instructors will make all efforts to respond to class correspondence between 8 am and 5 pm, Monday through Friday. Due to outside obligations, instructors may not be able to respond in the evenings or over the weekend.

Course Objectives:

1. Given a species of animal, students will be able to identify and describe the function of the digestive system for that animal.
2. Given a class of nutrient, students will be able to describe and outline the metabolism of that nutrient, both catabolic and anabolic processes.
3. Given a data set, students will be able to analyze and interpret statistical differences.

Course Meeting Times:

Lecture – Section 01: Monday/Wednesday; 11:00 am – 11:50 am; GLNN 112
Activity – Section 02: Monday; 2:00 pm – 4:50 pm; PLMS 333
Activity – Section 03: Tuesday; 2:00 pm – 4:50 pm; PLMS 333
Activity – Section 04: Wednesday; 2:00 pm – 4:50 pm; PLMS 333
**Required Material:**

- Calculator (have at all times – it is faster to have one that is not on the computer you use).
- Lab Book – durable composition book that is 7” x 9” in size (approximately).
- *Flash drive or personal laptop* (something to save work on during activities). University computers will be provided for use during activity if needed.
  - *NOTE:* Students will be required to have activities printed and any required computer software/spreadsheets downloaded PRIOR TO ACTIVITY. Failure to do so will result in student falling behind during activity. If student persistently does not have activities ready to go at the beginning of class, student may be excused from activity and lose all points associated with the activity.

**Computer Use:**

- *All communication for this course will be conducted via Blackboard Learn.* This includes email communications and course announcements. It is the student’s responsibility to check Blackboard Learn regularly for any announcements regarding the course. Students are REQUIRED to email instructors from BB Learn (to ensure the instructor receives the email).

- There will be weekly information available on Blackboard Learn – it is YOUR RESPONSIBILITY to complete this component of the course!

- *Computer use is required for this class.* Numerous spreadsheets will be used, therefore students must have access to Microsoft Excel. All students have free access to MICROSOFT OFFICE 365 by being a Chico State student! Simply log in with your portal ID and password.

**Grading:**

This course is designed to have a variety of assignments, exams, and quizzes to allow a variety of opportunities for you to make points. There is no curve, but grades will be rounded up to the nearest whole number (ex. 89.5 would round up to 90). The following is the grading scale for this class:

<table>
<thead>
<tr>
<th>Percentage earned</th>
<th>Letter Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 93%</td>
<td>A</td>
<td>Superior Work</td>
</tr>
<tr>
<td>90 – 92%</td>
<td>A-</td>
<td>Outstanding Achievement</td>
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<tr>
<td></td>
<td></td>
<td>Excellence</td>
</tr>
<tr>
<td>87 – 90%</td>
<td>B+</td>
<td>Very Good Work</td>
</tr>
<tr>
<td>83 – 87%</td>
<td>B</td>
<td>Better Than Adequate</td>
</tr>
<tr>
<td>80 – 83%</td>
<td>B-</td>
<td>Not Superior</td>
</tr>
<tr>
<td>77 – 80%</td>
<td>C+</td>
<td>Adequate Work</td>
</tr>
<tr>
<td>73 – 77%</td>
<td>C</td>
<td>Basic Competence</td>
</tr>
<tr>
<td>70 – 73%</td>
<td>C-</td>
<td>Average</td>
</tr>
<tr>
<td>67 – 70%</td>
<td>D+</td>
<td>Minimally Acceptable Work</td>
</tr>
<tr>
<td>60 – 67%</td>
<td>D</td>
<td>Barely Competent</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
<td>Unacceptable Work</td>
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<tr>
<td></td>
<td></td>
<td>Achievement Fails To Meet</td>
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<tr>
<td></td>
<td></td>
<td>Minimum Requirements</td>
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</tbody>
</table>
## Assignments and Activities:

### SYLLABUS QUIZ

You are required to complete an online quiz on the syllabus for this course. *This quiz is due by 11:59 pm on Wednesday of Week 2.* Students will be allowed one attempt (30 minutes allowed).

### FACEBOOK OFFICE HOURS

We will be hosting “Facebook” office hours. If you are having trouble finding the time to come to regular office hours, post a question on our Facebook page. The page is a “closed group” and you will need to “ask to join” the group. The group name is **ANSC 330** – search for it on Facebook or click the link. This is not required, this is just an alternative way to ask questions and seek assistance/clarity on course content (and it is faster response time than BB Learn)!

### LAB NOTEBOOK

Part of the research process is learning to keep detailed notes. Students are required to complete a lab notebook for this course.

**Basics of a lab notebook:**

- Lab book must be 7” x 9” in dimensions (or really close to that).
- You may choose how you record information in your personal notebook.
- ALWAYS WRITE IN PEN!
- If a mistake is made, simply use a single line out. **Example**
- Outside cover – label with your name, course number, and section (lab day).
- Table of contents – use the first couple of pages for a table of contents. Include date, title, and page number for each lab.
- For each lab, include the following:
  - Descriptive title of the lab
  - Date of the lab
  - Sample description
  - Background notes – any material discussed during lab that provides background for the procedure, history, relevance of the lab. It is the expectation that students WILL COMPLETE readings requested PRIOR TO LAB, take notes during discussion of the procedure and be engaged in the process.
  - Materials and methods – this sections lists the basic supplies and procedure for the process. Diagrams and images of any equipment can be attached neatly. Students may neatly staple the procedure into this section.
Data – ORGANIZATION IS KEY! Each lab will describe all measurements needed and formulas that need to be calculated. Use tables to assist in organization.

- For many of the procedures, you will have to calculate means, standard deviations, and correlations of variations. These are the values that need to be reported.
- All final values must be reported on a DM basis.

Summary – Describe how the lab went, report final values and include any thoughts/comments regarding the procedure.

- See the rubric at the end of the syllabus for grading guide.

RESEARCH PROJECT
Each semester, the ANSC 330 course conducts a feeding trial. This semester, the class will be evaluating the effect of a commercially available essential oil based product on lamb growth and performance. Students will be required to participate in the feeding project by feeding 4 times during the 60-day project. Each feed shift is worth 25 points for a total of 100 points. In response to the time required to complete this obligation, there is an “open lab” scheduled for the students, for which attendance is not required.

In addition to feeding, students are required to write an abstract summarizing the research project. The style of abstract that will be written is an “informative” abstract (UNC-Chapel Hill Writing Center). An abstract is a brief, self-contained statement that describes a larger work. Abstracts are written as an original document and do not contain excerpts. The target audience should be able to replicate a project, based upon the abstract. An abstract includes the objective, scope of the project, methodology, results and implications. Abstracts must be between 350-450 words (excluding title and author name and affiliation). There is a sample abstract included in this syllabus (see end of document). The abstract is due the Friday of “dead week” via an online submission tool (see BlackBoard Learn).

METABOLISM VIDEO
Metabolism is a challenging topic, therefore students are required to develop a brief video that describes some phase of metabolism (glycolysis, TCA cycle or oxidative phosphorylation/electron transport chain). The purpose of this assignment is to reinforce in your own way, one of these concepts. Students can work individually or in pairs (this means 2) to develop an “interpretive” skit of the chosen topic. Videos are to be uploaded into YouTube or Vimeo and the link posted on BB Learn in the appropriate area. See the schedule for due date.

EXTRA CREDIT
In case you miss an assignment or a quiz, there is an option for extra credit available during the semester. Students can sign up for extra credit feed shifts (5 pts each, up to 20 points). When signing up for extra credit feed shifts, students must indicate “EC” behind their name. All guidelines must be followed for feed shifts. WARNING: If there is a student that has not met the required feed shifts, an EC shift may get bumped.

Course Policies:

- RESPECT: Students in this class are encouraged to speak up and participate during class meetings. Because the class will represent a diversity of individual beliefs, backgrounds, and
experiences, every member of this class must show respect for every other member of this class. (Reference: http://www.csuchico.edu/diversity/)

- **NO LATE ASSIGNMENTS WILL BE ACCEPTED!** If you are not going to be attending class where an assignment is due, drop it off early or send it with a classmate. Online assignments will allow a minimum of 48 hours to be completed to be able to fit everyone’s schedule!
- No make-up exams/quizzes will be allowed, **EXCEPT FOR ABSENCES THAT HAVE BEEN CLEARED BY THE INSTRUCTOR PRIOR TO THE ABSENCE!**
- For school related activities, a letter from the supporting faculty/instructor is required prior to the absence.
- **Remember – you earn grades, professors merely assign them!**
- “Pet Peeves”:
  - Asking how long something will take. You are obligated for a certain amount of time by signing up for this course – we will meet for the full time (especially if students keep asking “how long will this take”!)
  - Asking to be excused from rules that all classmates are following.
  - Inappropriate or disruptive behavior will not be tolerated, nor will lewd or foul behavior
  - **Missing names on assignments – receive a score of 0.**
- It is YOUR responsibility to obtain any information announced in class.
- You will have a one-week period following the return of any exams, quizzes, or assignments to resolve any questions regarding the grading. After that time period, all grades are final.
- You should retain all graded items until a final course grade is assigned.
- If there is evidence that you have been involved in any form of academic dishonesty, you will receive an “F” grade for the course, be locked from BB Learn, and a report will be provided to the Student Judicial Affairs for further action.

**Accessibility**

Americans with Disabilities Act: If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with the instructor (Dr. Phillips) as soon as possible, or come in to office hours! Please also contact Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you to understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations.

**Academic Integrity**

Students are expected to be familiar with the University’s Academic Integrity Policy. Your own commitment to learning, as evidenced by your enrollment at California State University, Chico, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Judicial Affairs. The policy on academic integrity and other resources related to student conduct can be found at Student Judicial Affairs.

**Philosophical Statement – Academic Rigor**

Academic rigor consists of dedication on the part of students and faculty to the pursuit of academic excellence, including discipline of mind and disciplined behavior, intellectual honesty, decorum and civility. It is exemplified by the attainment of the highest standards as defined by and in each discipline. It also includes transmitting, sustaining, evaluating, and enhancing the continuity of recognized intellectual achievements in each discipline. A passion for learning and high expectations should pervade the atmosphere of the University.
The quality of education and the degrees and certificates offered by the University will only have value insofar as the administration, faculty, and students view themselves as custodians of the University’s reputation.

**Expectations of Faculty**
- Demonstrate high expectations of the course through a demanding syllabus, well-prepared classes, staying current through research and professional activities.
- Offer conscientious advising and predictable availability.
- Fully involve students in the learning experience by providing prompt, frequent feedback and developing rigorous testing methods.
- Develop approaches and strategies geared to diverse talents and ways of learning, while maintaining high standards of accountability.
- Seek to eliminate opportunities to engage in academic dishonesty.
- Actively contribute to their disciplines.

**Expectations of Students**
- Set high personal standards, develop a strong sense of purpose, come to class well-prepared, and complete assignments on time.
- Make the most of faculty advising and mentoring.
- Treat fellow students and the classroom environment with complete respect; give each class full attention and participation; do not miss class, arrive late, or leave early.
- Accept responsibility for learning and grades earned.
- Approach each class in a professional manner.
- Recognize that a full-course load is equivalent to full-time work and spend no less time on it.
- Demonstrate complete honesty and integrity.

**Required Technology Expectations**
In this course, whether you attend live in-person, online synchronously, or online asynchronously, you will be expected to demonstrate technical competency in several areas. These are 21st Century Skills. You often have to learn something new, on-the-fly. So, it is best that you learn these skills sooner than later.

If at any time you are experiencing technical difficulties, you should contact the professor or ITSS. **NOTE:** Your professor is **NOT** responsible for solving any technical problems that you experience, but they may be able to help.

During this course you may be expected to:
- Use the text editor in Blackboard (or elsewhere; e.g., discussion board, blog, short-answer essay question)
- Attach, open, or create pdf documents
- Use email professionally (i.e., use proper tone, respond promptly, etc.)
- Watch an online video using a variety of video players (e.g., Quickime, YouTube, etc.)
- Create and post your own web video
- Use your mobile phone to send text messages and/or send a text vote
- Take an online, traditional assessment (i.e., quiz, test)
- Submit assignments via Blackboard
- Take a screen shot
- Embed an image in a text document
- Edit an image using software such as Paint
- Use chat applications—both text and video
- Use Meriam Library’s ReSearch Station to find primary and secondary sources electronically
- Use database software (e.g., Microsoft Excel, SPSS)
- Use Google Apps (i.e., Google Maps, Drive, Google Docs, Spreadsheets, Slides)

HINT: If you are experiencing issues with software used (e.g., video players, Adobe, Java), you are encouraged to update the software, try another Internet browser (e.g., Firefox, Google Chrome, Internet Explore, Safari), and/or restart your computer.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
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| 1 – August 22 | Lecture: Introduction/Nutrients  
Lab (PLMS 333): Intro to lab work, safety and lab rules, using equipment |
| 2 – August 29 | Lecture: Nutrients/Enzymes  
Lab (SHEEP): Initiate nutrition research |
| 3 – September 5 | Lecture: Digestive Physiology  
Lab (ONLINE): Reading scientific papers, references, abstracts |
| 4 – September 12 | Lecture: Digestive Physiology  
Lab (BEEF): Current Nutrition Research |
| 5 – September 19 | Lecture: Water  
Lab (PLMS 333): Sample preparation, DM, ASH |
| 6 – September 26 | Lecture: Energy  
Lab (PLMS 333): ADF (Lab Book Check – due Thursday to PLMS 210 by 5 pm)  
EXAM 1 Monday (Intro, nutrients, enzymes, phys, water) |
| 7 – October 3 | Lecture: Carbohydrates  
Lab (PLMS 333): NDF |
| 8 – October 10 | Lecture: Carbohydrates  
Lab (PLMS 333): IVDMD |
| 9 – October 17 | Lecture: Carbohydrates  
Lab (PLMS 333): Bomb calorimetry  
Metabolism video due Friday by noon |
| 10 – October 24 | Lecture: Lipids  
Lab (SHEEP): Conclude research project |
| 11 – October 31 | Lecture: Lipids  
Lab (PLMS 333): Protein |
| 12 – November 7 | Lecture: Proteins  
Lab (PLMS 333): Stats  
EXAM 2 Monday (energy, carbohydrates, lipids) |
| 13 – November 14 | Lecture: Proteins  
Lab (PLMS 333): Peer review of abstracts (each student must get 2 reviews of their abstract and must review 2 abstracts) |
| 14 – November 21 | Thanksgiving Break 😊 |
| 15 – November 28 | Lecture: Minerals  
Lab (PLMS 333): Open lab to work on data/abstract |
| 16 – December 5 | Lecture: Vitamins  
Lab (PLMS 333): Open lab to work on data/abstract  
Abstract due Friday (online) by 5:00 pm |
| 17 – Finals (December 12-16) | Final Exam – Monday, noon-1:50 pm  
60% previous exam material  
40% proteins, minerals, vitamins |
Netiquette:

Regular “attendance” and class participation are required. They are essential in creating a positive classroom culture—even online. All students are expected to engage in online discussions, participate in group activities, and complete assignments on time. For an absence to be considered excused a student must appropriately document the absence. Acceptable documentation includes (but is not limited to) a signed doctor’s note, a funeral/memorial pamphlet, or pre-arranged University sponsored event (e.g., sporting meet, music tour). Any course work and announcements missed by an absence is the responsibility of the student. Any course work missed by an absence will not be accepted unless accompanied by acceptable documentation of absence.

“Netiquette” means “Internet Etiquette” and is required for success in this course and beyond. To ensure appropriate netiquette in this online course several ground rules must be established.

- First, in this online course it is possible to be “absent” and “tardy” as described in the previous paragraph. This course requires participation and interaction. If you do not participate in group discussions, activities, and papers, you are affecting the whole class, your group, and yourself. So, if you are “absent” or “tardy” from a discussion, etc., it is unfair to your classmates for their grades to be affected negatively. As a result, you individually will be held accountable for such an absence or tardy.

- Second, it is important to understand that online discussions are asynchronous- meaning that rarely do discussions occur in a ‘chat’ format and people are depending on you to post responses in a timely manner. This means two things: be prompt and be patient. Try to answer all questions and respond to all posting as soon as it is feasible. However, also be patient in that not all students in the class can immediately respond to your postings and emails.

- Third, it is also important to understand that it is difficult to convey tone with online communication including emails and discussion postings. Please take time to review and edit anything you post or send in this course to make sure that it conveys the content you want to convey in the manner you wish to convey it. Be careful with the use of emoticons. I encourage their use to convey meaning, but such symbols can also be interpreted the wrong way. For example, a “winking” emoticon ; ) can convey different meanings to different people (i.e., happiness, cuteness, or sarcasm).

- Fourth, because it is difficult to understand the tone of another student’s posting, do not assume that you always understand what another person posted- especially if it could be construed in a negative way. When in doubt please ask for clarification.

- Fifth, to promote a positive learning environment, personal attacks (i.e., flames/flaming, bashing, hate speech, etc.) against any person or groups of people will NOT be tolerated and may result in suspension from the class or from the University. Legal action could be taken against hate speech. Everyone in this course is a unique person and must be respected as such. Personal attacks tend to occur when communication is incognito. For this reason, students are required to post an appropriate face picture (see Intro Module for details). If you do disagree with something that someone posts, it is best to state your argument as disagreeing with the point of view and state the point of view, do not attack the person who stated the point of view (e.g., write “I disagree with the idea that [state idea]….” instead of saying “I disagree with [name of person]).

- Sixth, many of the projects in this class require cooperative learning, group collaboration, and group work. It may be difficult to come to consensus on how to complete a project. For this reason we will employ democratic principles for such projects. There are handouts and
guidelines specific to these assignments. This profession requires collaboration. If collaboration is not your “cup of tea,” I suggest that you consider professions other than education.

- Seventh, as with all Blackboard courses, I can view all your online work including how much time you spend on a project or view a lesson. This is not meant to be intimidating from a “Big Brother” perspective, but rather an open and honest declaration that I can monitor your progress. Also, I can use the data to corroborate any claim that you as a student are or are not participating in course work online.

Practice professional conduct. Promptness, personal dress, general demeanor, and your ability to interact positively with colleagues, instructors, school personnel, as well as with your pupils and their families will be valued throughout this program. Also as a teacher, it is expected that you can communicate clearly and accurately. As you adopt this emerging professional role, keep in mind that you are also becoming an ambassador to our profession.

In all credential course work, it is expected that for every one hour of contact time, you will complete approximately one to two hours of work outside of class. Please plan accordingly. If you find yourself falling behind, see me immediately for assistance.

“How to Succeed in College 101”
By Carrie Whitcher Monlux and Friends
Modified by Celina Phillips

Sometimes students fall into that false sense of security that the relationship between themselves and their university instructors/professors falls into the same line as those with their close friends. Remember, your professors are not your friends (not yet), they are your instructors, coaches, and people who will (or not) write letters of recommendation for you in the future based on your class performance, professionalism, attitude, and attendance.

An email, phone message, or other means of communication to a university staff or faculty member should be treated as an official message that should be taken seriously. Spelling, grammar, punctuation, and style are all observed by the reader and poorly written or spoken messages are not acceptable. Act professional and proud when working with other professionals if you want to be taken seriously.

Your actions in class and lab also leave a lasting impression. Are you constantly late to class with no good reason? Do you always seem to have an excuse for everything? Do you procrastinate and then run out of time for your homework? Do you wish you could perform better on tests and major assignments?

Here are a few items myself and my colleagues have noticed over the past several years of teaching at the college level.

1. Unless the instructor tells you to call her/him by a first name, use a professional salutation or greeting:

   Dear Dr. Snottinoz, (or Professor Snottinoz, if you don’t know if he/she has earned a PhD). Please check to see if you spelled the instructor’s name correctly. If you take the time to capitalize your name, do the same to the instructor’s name. Use of Ms. or Mr. is appropriate if the instructor doesn’t have a PhD.

2. Tell the instructor who you are (full name) and your section number in every communication (email subject heading, phone message, note on office door/faculty mailbox, etc.). We can’t tell who you are from an AOL or hotmail email account name or your initials.
3. Speaking of non-CSUC email accounts, does your email account sound professional? wildcathottie21@domaindotcom or bigstrongboy23@domaindotnet probably won’t be taken very seriously by most instructors and eventually, human resource professionals.

4. Do not use text messaging abbreviations in your communications and use of “get back to me ASAP” is considered rude. We try our best to read emails but aren’t sitting at the computer 24/7 waiting for your messages.

5. Spell check and proofread your email. You are a student at a state university and your actions, attitude, and performance will decide whether you receive letters of recommendation from your professors. Not the best writer? Get help from the University Writing Center!

6. Only compose an email after you have thoroughly read the syllabus and know the class rules and due dates. Don’t try to negotiate the due dates; in my class, they are set in stone. Have you tried posting your question with the online discussion tool? Usually one of your classmates can help you before the instructor can get back to you.

7. Remember the syllabus is a contract between you and the instructor. This is what she/he will provide to you during the semester and what she/he expects from you and your performance in return. If you can’t or aren’t willing to abide by the class policies and assignments, you should seriously consider finding another class.

8. Don’t send instructors jokes, funnies, or chain emails. Most of the time these are sent directly to our junk email file but if not, they end up there anyway. I won’t answer an email unless I know who it’s from and if that person is a student or colleague.

9. Some instructors don’t return emails over the weekend. Keep this in mind prior to an upcoming exam or large assignment. Many have families and lives outside of teaching, respect that.

10. Keep your feet on the floor and off the furniture. Respect the facilities at the farm. Don’t sit on fences or gates as that wears them down faster. If you must go over a gate, go on the hinged side.

11. Make it a point to come to class on time and don’t leave early.

12. Turn your technology off (unless the instructor tells you otherwise). Bring your class materials and a regular calculator to all class meetings. Be prepared so you don’t have to borrow from a classmate.

13. Do the assigned reading and homework as soon as you have free time. Expect 5-6 hours of study time for each class each week. Don’t procrastinate!

14. Clean up after yourself, put things back where they came from, and report broken tools and materials to your instructor immediately. They will put it aside so no one uses it and will either get it fixed or replaced.

15. Share tools and materials with classmates.

16. Say “please” and “thank you” to everyone who helps you. What goes around comes around and no one likes a slacker. Don’t be afraid to ask for help and be ready to give it in return.

17. Don’t even consider cheating in any class. Most instructors have been teaching a while and know most of the tricks from hidden notes on ball caps and pens to writing on body parts to electronic cheating. Don’t risk an F grade or removal from the university because you didn’t study!

18. Take 10-15 minutes after each lecture and lab to go through the notes. Did you miss anything? Are you unsure of a concept? Can’t read your notes? Write down any stories or examples that you know belong in
your notebook. This simple weekly study technique has helped thousands of students increase their grades without last minute cramming, late-night study sessions, and random memorization.

19. Go to the instructor’s office hours to clarify notes or parts of the lecture you did not understand. That’s what the instructor is there for and they want you to succeed. Maybe you just need to hear a concept in another way or need to know how it relates to your major or real life. That’s their job, just ask!

20. Remember that advice is free; you don’t have to take it. Be smart and safe, remember the Golden Rule and do your best. Hindsight is always 20-20, so keep your head up now before it’s too late to change your performance.

SAMPLE ABSTRACT (WORD COUNT = 426)


The objective of this study was to determine the effects of feeding different levels of almond hulls on finishing lamb growth performance and carcass characteristics. This trial was replicated over two years, with 14 lambs (nine ewes, five wethers) fed in year one, and 18 lambs (six ewes, 12 wethers) fed in year two to evaluate the effect of feeding varying levels of almond hulls (AH) in finishing diets. Lambs were fed a base ration that was 35% roughage and 65% concentrate. Almond hulls (AH) replaced a portion of the roughage (alfalfa pellets or cubes) at 0%, 5%, and 10% of the total diet. Lambs were penned by treatment group (n=10 for 0% AH; n=11 for 5% AH; n=11 for 10% AH across years); however, lambs were placed in individual feeding stalls at 0600 and 1730 for 45-60 minutes to eat. As a result, individual intake and feed efficiency was measured. At the end of each feeding, refusal was weighed and discarded. Bunk scores were recorded and used to adjust feed to optimize intake. Animals with fecal scores of 1-2 were considered normal; scores of 3-4 received treatment for digestive upsets. Beginning and ending weights, average daily gain (ADG), average daily feed intake (ADFI), cost of gain (COG), feed efficiency (FE), yield grade (YG), quality grade (QG), hot carcass weight (HCW), and dressing percentage (DP) measurements were collected. Data were analyzed as a randomized block design using PROC MIXED (SAS); data were blocked by year. Beginning weights (39 kg) did not differ by treatment (P=0.90). Addition of almond hulls to the ration did not affect ending weight (58 kg; P=0.83). Furthermore, average daily gain (0.29 kg/d), average daily feed intake (1.6 kg) and feed efficiency (0.18 kg gain: kg fed) were not affected by the addition of almond hulls (P>0.40). Cost of gain tended to decrease with increasing almond hull level (P=0.09). Cost of gain for the 0% AH, 5% AH, and 10% AH diets were $2.50/kg, $2.23/kg and $2.15/kg, respectively. Addition of almond hulls did not impact (P>0.19) hot carcass weight (35.4 kg), yield grade (2.8) or quality grade (2.5; mid to high choice). Dressing percent tended to differ (P=0.08) among treatments, with the 0% AH diet dressing at 63.7%, 5% AH diet dressing at 59.8% and 10% AH diet dressing at 60.2%. Replacing alfalfa pellets or cubes with up to 10% almond hulls in lamb finishing diets did not appear to adversely affect growth or carcass performance. Almond hulls can be a suitable replacement for higher priced roughage sources in lamb finishing rations.
# Laboratory Notebook Grading Rubric

All or none grading (number of check marks is the number of points you receive)

<table>
<thead>
<tr>
<th>Required</th>
<th>Intro</th>
<th>Research Project</th>
<th>Papers</th>
<th>Current Research</th>
<th>DM</th>
<th>ASH</th>
<th>ADF</th>
<th>NDF</th>
<th>IVDMD</th>
<th>Bomb</th>
<th>Protein</th>
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<td>Personal relevance: does each lab demonstrate the “why” for the process? Does it reflect thinking, curiosity, and being engaged?</td>
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**Total Checks**