NATIONAL
FFA ORGANIZATION

Agricultural Proficiency Awards

Example Application

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Agriscience Animal Systems

National Research Proficiency

Animal Systems

AA

AA0001

550000000

Applicant Information

Applicant Name
Lori Smith

Chapter Name
Anywhere High School

Statement of Candidate and Parent/Guardian

We have prepared this application and certify that the records are true, complete and accurate and we hereby permit for publicity purposes the use of any information included in the application with the exception of the following:

Date	Parent/Guardian Signature
Date	Candidate's Signature

Certification

We have verified the application and find that the statements contained herein are such that we are able to recommend him/her for the Degree/Award. Furthermore, we verify that he/she has conducted themselves in a manner to be a credit to the organization, chapter, school and community.

Date	Chapter Advisor Signature
Date	Superintendent or Principal Signature
Date	Employer Signature (Placement applicants only)
Date	State Advisor or State Executive Committee Signature

National Research Proficiency
Basic Award Setup Information

I. Application Dates

Began Agricultural Education
8/5/2011

Application Ending Date
12/31/2014

II. Proficiency Type

Proficiency Type
Animal Systems

Primary Pathway of SAE
Animal Systems

1. Briefly explain your SAE and how it related to this award area.

I was raised on a commercial based cattle farm and in middle school, I enrolled in my first agriculture class. From these influences, I became interested in improving my cattle herd by finding the best breeding system from efficiency and financial standpoint. In high school my Ag teacher, explained to me that I could take my beef cattle SAE to another level with an agriscience project. I became aware of methods to synchronize estrus in cattle, researched the topic to determine what was best for my herd and conducted experiments. My agriscience project, phase one and two, dealt with testing estrus rate in two groups of beef cattle with one on a natural estrus cycle and the other group having a synchronized estrus cycle. During phase two, I repeated phase one but with a larger number of cattle. I used six groups total, with 50 in each group, and three groups having a natural estrus cycle and the other three groups on a synchronized estrus cycle with 300 head total. After conducting phase one and two of my experiment I expanded my agriscience experiment into phase three, which was determining which estrus cycle had a higher conception rate using the heat percentages from phase two. After conducting these experiments I found that the natural estrus cycle was the most beneficial from a financial point for my herd because I will not have to purchase the CIDRs and lutalyse. I now implement this breeding protocol to receive the highest estrus and conception rate.

2. Briefly explain how your roles, responsibilities, and/or management decisions related to this award area changed.

Before performing this experiment, I had only conducted experiments with plants as part of our classroom activities. In the beginning, my Ag teacher helped me with designing the experiment to make sure that I was setting up groups correctly and that I was only changing one variable. Once I decided to complete this experiment, I had many of responsibilities to manage. I researched synchronized and natural estrus cycle for breeding beef cattle. I learned how to read drug labels and how to administer the lutalyse in the synchronized group. The herdsman demonstrated how to place heat patches and how to observe for heat. I developed a system for recording data in the logbook and transposing these numbers into computers programs. After training with the steps involved in synchronizing estrus, I had the skills to attach estrus patches, use CIDR guns, and administer injections in the neck muscles with little supervision. In addition to increasing cattle working skills, my skills experiments from writing the hypothesis to drawing conclusions. I demonstrated record keeping suggestions and prepared material for my Agriscience display boards.

3. Briefly explain what is the single greatest challenge you faced in this award area and how did you overcome that challenge?

Phase one and two experiments had many challenges to overcome but the main one was time management. This experiment was all based on time with inserting the CIDR, administering the lutalyse, and observing for heat. To manage this challenge, I developed different resolutions such as preparing a written and electronic calendar with the dates of inserting CIDRs in the vulva, pulling the CIDRs, and administering the lutalyse. Also, I had dates for placing heat patches on the tail head for both groups, synchronized and natural. I marked dates for the 72 hour time period to observe heat for the synchronized group and the 21 day time period to observe heat for the natural group. By utilizing written and electronic calendars, I was able to stay on track with experiment activities which increased the reliability of the study.

Briefly explain your three greatest accomplishments or findings in this award area.

Accomplishment/Finding #1

The finding from phase one of my estrus experiment revealed that the natural group, Group A, had a higher estrus rate of 92% when compared to the synchronized group, Group B, of 84%. The statistical significance of Group A, the natural group, when tested against Group B, the synchronized group, was .252 which was not statistically significant. After completing phase two, my findings revealed that the natural estrus cycle, Groups A, D, and E had a higher estrus rate average with 94%. Groups B, C, and F had a lower estrus rate of 83%. The statistical significance for Groups A, D, and E when tested against Groups B, C, and F was .004 which was statistically significant.

Accomplishment/Finding #2

During phase three, I compared the conception rate between natural estrus cycle and synchronized. I used heifers and data collected during phase one and two. The conception rate was measured using blood tests. During phase one and two, 141 out of 150 cows on the natural cycle were recorded positive for estrus. Of these cows, the conception rate was 73%. The synchronized groups contained 150 and out of those, 129 were recorded with a positive estrus cycle. Of these cows, the conception rate was 62%. My findings were that the natural cycle heifers had a higher conception rate of 73% and the synchronized estrus group had a 67% conception rate.

Accomplishment/Finding #3

I reached my goal by preparing a 48"x48" trifold board with information such as: abstract, procedures, and recommendations. I explained my results to cattle farmers at the Cattlemen's meetings and Junior Cattlemen's meeting by recommending natural estrus for beef cattle. I taught high school Basic Agriculture students about natural and synchronized estrus cycles and the process of utilizing the synchronized estrus cycle. Also, I taught elementary students about conducting experiments during two agriscience camps held in 2012 and 2013. I discussed methods of conducting experiments and how these skills would benefit me at college and my future career as an Agriculture Educator, with State Administrators and academic teachers.

What are three ways your experiences or opportunities in this award area will impact your future.

Impact #1

My career choice is to become and Agricultural Education secondary education school teacher. As an agriculture teacher, I will need to know the steps of the scientific method and information about the animal science world. Through my agriscience experiment I have deigned, conducted, and analyzed a scientific experiment using the empirical method. With my results with cattle estrus, I have increased my knowledge in cattle breeding and will be able to excel in these areas when teaching high school students.

Impact #2

I currently have a cattle herd consisting of 30 commercial based cattle and the results of this experiment have helped me make the decision on which estrus cycle to use in my herd. Based of the results, I concluded that the natural cycle had a higher estrus rate with 92% compared to synchronized estrus cycle at a rate of 84%. Using natural estrus will be a better investment because there will be less money spent on CIDRs and lutlyse. In addition, I will not waste time or resources handling the cows to insert the CIDRs and injecting lutlyse.

Impact #3

After high school, I plan to attend Texas Tech or Texas A&M and double major in Animal Science and Agricultural Education. Before beginning my experiment, I researched cattle estrus. Next, I compared and contrasted the advantages and disadvantages of natural and synchronized estrus cycle by reading valid sources. I used this information to write my research paper. This will benefit me in the future at college with writing research papers in an organized manner.

Testing Natural Estrus Cycle versus Synchronized Estrus Cycle in Commercial Cattle: Phase One

Animal Systems

Years: 2011 - 2011
Hours: 137

Research Expenses

Year	Expense Item	Memo/Description	Cost
2011	1.5 Inch Long Needles	Needles were used to administer lutalyse	$36
2011	6cc Syringe	Used when adminstering the lutalyse	$16
2011	Eazi- Breed CIDR	Used for snychronization	$500
2011	Estrotec Heat Patches	Heat Patches used to measure estrus	$120
2011	Gallon of Obstrectic Lubricant	Applied on the CIDR gun when placing CIDR in vulva	$8
2011	Heating Pad	Heat Patches were placed on the heating pad during cold weather for better application	$15
2011	Lutalyse	Used for synchronization	$171
2011	Paper Towels	Used to clean up work area	$6
2011	Richie Ear Tags	Used for identification purposes	$120
2011	Sterile Gloves	Used while administering the CIDR and lutalyse	$8
			$1,000

Research Income

Year	Income Source	Memo/Description	Cost
2011	Anywhere Valley Farms (AVF)	AVF funded my experiment to implement my results in their breeding protocol	$1,000
			$1,000

Please give a detailed explanation of how you obtained your project materials.

Abstract

The purpose of this experiment is to determine which group of crossbred beef cattle, Bos primigenius, will have a higher estrus rate, if one group is synchronized and the other group comes into a natural estrus cycle of 21 days. My hypothesis was that the group of synchronized crossbred beef cattle, Bos primigenuis, would have the higher estrus rate than the group of natural cattle. During this experiment there were two groups of cattle tested against one another to see which one came into estrus the most of the two groups. I found that the natural group of cattle, Group A, had a higher estrus rate of 92%. Group B had lower estrus rate of 84% after being tested. At the completion of this experiment, I calculated the statistical significance of the two groups for coming into estrus. The statistical significance of Group A when tested amongst Group B was .252 which is not statistically significance. According to my findings the following recommendations can be offered. For the highest estrus rate for crossbred beef cattle, I recommended allowing crossbred beef cattle go though their natural estrus cycle, rather than synchronizing their estrus cycle. After analyzing the Group B results, I had the following explanations. One, the CIDR could have a defect from the factory with the amount of progesterone which was the hormone use for the cattle to come into estrus. Two, the lutalyse which was another type of hormone, could have no affect on the cattle's reproductive system. Three, human error could have occurred when inserting the CIDR gun and placing the CIDR in the vulva.

Procedure

Natural Groups:
1. Order one pack of Estrotect heat patches.
2. Place heat patches on heating pad to have a better adhesion to the animal in cold weather.

3. Place heat patches on Group A cows for natural estrus cycle. Place right on top of the tail head which is located between the two hip bones on the top line. At the time of application, the patch is gray.
4. Observe Group A cows for 21 days after placing the heat patch. Look for the change of color in patch from gray to neon orange due to being ridden from other cattle. Spend 20 to 30 minutes checking for estrus morning and late afternoon.

Synchronized Groups:
1. Order one pack of Estrotect heat patches and nine bottles of Pfizer Lutalyse, 50 CIDRS (Controlled Internal Drug Release), and a CIDR gun. Also, get two rolls of paper towels.
2. Before placing CIDR gun in vulva put lubricant on the end of the gun to have better insertion. Use a paper towel to wipe any manure or soil from the vulva area. Insert the CIDR in the vulva with the CIDR gun for cows with synchronized estrus cycles.
3. Seven days later, pull CIDR out of Group B cows using the blue string located at the end of the CIDR.
4. After CIDR is removed, and while cow is still in the chute, give five cc of Lutalyse per cow in neck muscle.
5. Place heat patches on heating pad to have a better adhesion to the animal in cold weather.
6. Place a heat patch on Group B cows after shot is given.
7. Observe Group B cows for a 72 hour window after Lutalyse is given and look for change in patch color from gray to orange due to being ridden from other cattle. Spend 20 to 30 minutes checking for estrus every morning and late afternoon.

Conclusion

During this experiment there were two groups of cattle tested against one another to see which one came into estrus the most of the two groups. I found that the natural group of cattle, Group A, had a higher estrus rate of 92%. Group B has a lower estrus rate of 83% after being tested. At the Completion of this experiment, I calculated the statistical significance of the two groups for coming into estrus. The statistical significance of Group A when tested against Group B was .252 which was not statistically significant.

Testing Natural Estrus Cycle versus Synchronized Estrus Cycle in Commercial Cattle: Phase Two

Animal Systems

Years
2012 - 2012

Hours
294

Research Expenses

Year	Expense Item	Memo/Description	Cost
2012	1.5 inch long needles	Used for adminstering lutalyse	$81
2012	6cc syringes	Used when adminstering the lutalyse	$32
2012	Eazi- Breed CIDR	Used for synchronization	$1,000
2012	Estrotec Heat Patches	Used to measure estrus	$240
2012	Gallon of Obstretic Lubricant	Applied to the CIDR gun when placing CIDR in the vulva	$8
2012	Lutalyse	Used for synchronization	$323
2012	Paper Towels	Used to keep work area clean	$4
2012	Richie Ear Tags	Used for identification purposes	$48
2012	Sterile Gloves	Worn when adminstering lutalyse and CIDR	$8
			$1,744

Research Income

Year	Income Source	Memo/Description	Cost
2012	Anywhere Valley Farms	AVF funded my experiment to implement my results in their breeding protocol	$1,744
			$1,744

Please give a detailed explanation of how you obtained your project materials.

Abstract

The purpose of this experiment is to determine which group of crossbred beef cattle, Bos primigenius, will have a higher estrus rate, if one group is synchronized and the other group came into a natural estrus cycle of 21 days. My hypothesis was that the groups of synchronized crossbred beef cattle, Bos primigenuis, would have the higher estrus rate than the groups of natural cattle. During this experiment there were six groups of cattle tested against one another to see which one came into estrus the most of the six groups. I found that the natural groups of cattle, Groups A, D, and E, had a higher estrus rate of 94%. Groups B, C, and F had lower estrus rate of84% after being tested. At the completion of this experiment, I calculated the statistical significance of the two groups for coming into estrus. The statistical significance of Groups A, D, and E when tested amongst Groups B, C, and F was .004. According to my findings the following recommendations can be offered. For the highest estrus rate for crossbred beef cattle, I recommended allowing crossbred beef cattle go though their natural estrus cycle, rather than synchronizing their estrus cycle. After analyzing the Group B, C, and F results, I had the following explanations. One, the CIDR could have a defect from the factory with the amount of progesterone which was the hormone use for the cattle to come into estrus. Two, the lutalyse which was another type of hormone, could have no affect on the cattle's reproductive system. Three, human error could have occurred when inserting the CIDR gun and placing the CIDR in the vulva.

Procedure

Natural Groups:
5. Order three packs of Estrotect heat patches.
6. Place heat patches on heating pad to have a better adhesion to the animal in cold weather.
7. Place heat patches on Groups A, D, and E cows for natural estrus cycle. Place right on top of the tail head which is located between the two hip bones on the top line. At the time of application, the patch is gray.

8. Observe Groups A, D, and E cows for 21 days after placing the heat patch. Look for the change of color in patch from gray to neon orange due to being ridden from other cattle. Spend 20 to 30 minutes checking for estrus morning and late afternoon.

Synchronized Groups:
8. Order three packs of Estrotect heat patches and 25 bottles of Pfizer Lutalyse, 150 CIDRS (Controlled Internal Drug Release), and a CIDR gun. Also, get two rolls of paper towels.
9. Before placing CIDR gun in vulva put lubricant on the end of the gun to have better insertion. Use a paper towel to wipe any manure or soil from the vulva area. Insert the CIDR in the vulva with the CIDR gun for cows with synchronized estrus cycles.
10. Seven days later, pull CIDR out of Groups B, C, and F cows using the blue string located at the end of the CIDR.
11. After CIDR is removed, and while cow is still in the chute, give five cc of Lutalyse per cow in neck muscle.
12. Place heat patches on heating pad to have a better adhesion to the animal in cold weather.
13. Place a heat patch on Groups B, C, and F cows after shot is given.
14. Observe Groups B, C, and F cows for a 72 hour window after Lutalyse is given and look for change in patch color from gray to orange due to being ridden from other cattle. Spend 20 to 30 minutes checking for estrus every morning and late afternoon.

Conclusion

During this experiment there were six groups of cattle tested against one another to see which one came into estrus the most of the six groups. I found that the natural group of cattle, Groups A, D, and E, had a higher estrus average with a 94% rate. Groups B, C, and F had a lower estrus average of 83% after being tested. At the Completion of this experiment, I calculated the statistical significance of the two groups for coming into estrus. The statistical significance of Groups A, D, and E when tested against Groups B, C, and F was .004 which was statistically significant.

Testing Natural Estrus Cycle versus Synchronized Estrus Cycle in Commercial Cattle: Phase Three

Animal Systems

Years
2013 - 2013

Hours
355

Research Expenses

Year	Expense Item	Memo/Description	Cost
2013	1.5 inch long needles	Used to draw blood for the blood test	$45
2013	6cc Syringe	Used to draw blood for the blood test	$32
2013	Blood Test	Used to measure for conception	$540
			$617

Research Income

Year	Income Source	Memo/Description	Cost
2013	Anywhere Valley Farms	VF funded my experiment to implement my results in their breeding protocol	$617
			$617

Please give a detailed explanation of how you obtained your project materials.

Abstract

The purpose of this experiment was to determine which group of crossbred beef cattle, Bos primigenius, would have a higher conception rate, when tested using a blood test, if one group was synchronized and the other group came into a natural estrus cycle of 21 days. My hypothesis was that the groups of synchronized crossbred beef cattle, Bos primigenuis, would have the higher conception rate than the groups of natural cattle. During this experiment there were six groups of cattle tested against one another to see which one came into estrus the most of the six groups. I found that the natural groups of cattle, Group A, D, and E, had a higher conception rate average of 73%. Groups B, C, and F had lower conception rate average of 67% after being tested. According to my findings after a 13 month long experiment, the following recommendations were offered. For the highest conception rate for crossbred beef cattle, I recommended allowing crossbred beef cattle go though their natural estrus cycle, rather than synchronizing their estrus cycle. After analyzing the Group B results, I had the following explanations for lower conception rates. One, the cow may have not been bred long enough to show positive in the blood test. Two, the lutalyse or CIDR which are types of hormones, could have no affect on the cattle's reproductive system. Three, human error could have occurred when administering the blood test.

Procedure

1. Order 270 vials, 270 one and half inch long needles, and 50 6cc syringes for blood testing.
2. Secure the cow into the chute and clean the tail with a paper towel.
3. Raise the tail and draw blood from underneath the tail.
4. Using a 1.5 inch needle fill the syringe with six cc of blood.
5. Place the blood into a vial and store in a cool area.
6. Deliver vials to Southeast Animal Labs for testing.
7. The Conception rate results were emailed two weeks later.

Conclusion

During phase three, I compared the conception rate between natural estrus cycle and synchronized. I used heifers and date collected during phase one and two. The conception rate was measured using blood tests. During phase one and two, 141 out of 150 cows on the natural cycle were recorded positive for estrus. Of these cows, the conception rate was 73%. The synchronized groups contained 150 and out of those, 129 were recorded with a positive estrus cycle. Of these cows, the conception rate was 62%. My findings were that the natural estrus cycle heifers had a higher conception rate of 73% and the synchronized estrus group had a 67% conception rate.

National Research Proficiency
Learning Outcomes & Efficiency Factors

	Learning Outcome or Efficiency Factor	Beginning Level	Level Attained	Description
1	Administering CIDR and Lutalyse	Year: **2011** Level: **10%**	Year: **2014** Level: **95%**	In year one (2011), I had 10% knowledge in administering the CIDR and lutalyse. After conducting experiments and adminstering the CIDR and lutalyse to the all 150 synchronzized cows. I increased my knowledge to 95% in year four (2014). This will allow me to synchronize more estrus cycles.
2	Designing Experiments	Year: **2011** Level: **0%**	Year: **2014** Level: **90%**	In year one (2011), I had 0% knowledge in designing experiments. By conducting multiple experiments, keeping a logbook, and ensuring my results were valid, I increased my knowledge to 90% in year four (2014). This allowed me to design and conduct my further studies.
3	Evaluating Animals for Breeding Readiness and Soundness	Year: **2011** Level: **10%**	Year: **2014** Level: **95%**	In year one (2011), I had 10% knowledge in how to check for estrus. I used the Estrotect Heat patches to measure estrus which were dark gray when applied and turned neon orange due to ridding. I increased my knowledge in year four (2014) to 95%.
4	Record Keeping	Year: **2011** Level: **0%**	Year: **2014** Level: **95%**	In year one (2011), I had 0% knowledge in keeping records. After keeping records fro my experiements and writing down my observations in a logbook, I increased my knowledge to 90% in year four (2014). This allowed me to keep accurate records of further experiements.
5	Written and Oral Communication	Year: **2011** Level: **10%**	Year: **2014** Level: **90%**	In year one (2011), I had 10% knowledge in how to communicate my results. After conducting my experiments and sharing my results with local farmers and members of numerous breed associations, I increased my knowledge in year four (2014) to 90%.

National Research Proficiency
Skills, Competencies, and Knowledge

A. Five Primary Skills, Competencies, and Knowledge within your Pathway

	AFNR Performance Indicator	Contributions to Success
1	AS.05.03 Apply scientific principles in the selection and breeding of animals.	The first step was to ensure all the heifers were the same age and, I evaluated them on performance, physical appearance, breed base, and weight so they would be as uniform as possible. For example, to ensure valdity, I selected a total of 300 heifers and divided these into six equal groups of 50. Next, two different colored ear tags were used for the groups to make sure each heifer was properly identified into the correct groups.
2	AS.05.02 Evaluate animals for breeding readiness and soundness.	Estrotect heat patches were used to measure estrus which were dark gray when applied to the tail head. The patches changed to neon orange when cattle came into estrus due to friction from riding by other cows. I observed heat for 21 days on the natural estrus cycle group and for 72 hours on the synchronized group. Cows with orange heat patches were recorded by ear tag number as a one, which stood for heat. Cows with grey heat patches were recorded by ear tag as a zero, which stood for no heat.
3	AS.06.01 Demonstrate safe animal handling and management techniques.	When dealing with cattle, safety for the cows, myself, and others was the number one issue. I had closed toe shoes and proper clothing while administering lutalyse, inserting CIDR, and applying the heat patch. When administering the lutalyse and CIDR, gloves were worn and each cow had its own needle when given of lutalyse. Also, I avoided making no loud noises or fast movement that would frighten the animals. I made sure an adult was present at all times and was knowledgeable about cattle.
4	CS.08.01 Evaluate and select the appropriate tool to perform a given task.	A CIDR releases a drug called progesterone and signals the cow's brain that it is bred and does not need to come into estrus. First, step for inserting the CIDR was to carefully catch the cow's head in the chute. Next, the CIDR was inserted into the CIDR gun, lubricant was applied on the end of the CIDR gun, gun was inserted into the vulva, the injector was pressed, and the gun was removed leaving the CIDR in the vulva, the injector was pressed, and the gun was removed leaving the CIDR in the vu
5	AS.06.02 Implement procedures to ensure that animal products are safe.	For safety purposes, I read the label before using the CIDR gun and administering lutalyse. I read how insert the CIDR into the vulva leaving the blue string visible. When administering lutaylse, five cc was recommended to be given into the neck muscle after pulling the CIDR. I took precaution that if lutalyse got on my hands or eyes that I should wash immediately and flush with water for ten minutes. During both of these procedures sterile gloves were worn and adult supervision was present.

B. Five Supporting Skills, Competencies, and Knowledge outside your Pathway

	AFNR Performance Indicator	Contributions to Success
6	CS.11.02 Design and conduct a scientific investigation.	I conducted scientific experiments for three years to discover which group of beef cattle would have the highest estrus rate and conception rate. I used the scientific method and formed the hypothesis. My hypothesis for phase one and two was the synchronized would have a higher estrus rate when compared to the natural groups. For phase three my, hypothesis was that the natural groups would have a higher conception rate when compared to the synchronized estrus cycle groups.

7	CS.01.01 Action: Exhibit the skills and competencies needed to achieve a desired result.	After conducting research, I developed a hypothesis and determined the methods for conducting an experiment that would yield valid results. I decided to use 100 crossbred commercial heifers, with 50 used as the control group/natural estrus and 50 used as the treatment group/synchronized in phase one. I used ear tags to identify each heifer, and heat patches to identify estrus.
8	CS.01.01 Action: Exhibit the skills and competencies needed to achieve a desired result.	After conducting experiments, I communicated results with the public. First, I informed the General Manager at AVF and other local farmers. I published my results in the Junior Cattlemen's Association magazine and with the Brangus Association. I also presented my results with state legislators, local school board members, fellow classmates, teachers, and other beef producers. I prepared a 48"x 48" trifold board to help me communicate my results.
9	BS.02.01 Maintain and interpret biotechnology laboratory records.	In phase two, I tested 300 heifers for estrus rate with 150 on natural cycle and 150 on synchronized cycle. I found that my results validated my findings from phase one with the natural cycle having a higher estrus rate average of 94% compared to an estrus average of 83% for synchronized cycle. During phase three, testing conception rate, my findings were that the natural cycle had a higher conception rate average of 73% when compared to the synchronized cycle conception rate average of 67%.
10	ABS.03.01 Prepare and maintain all files needed to accomplish effective record keeping.	For record keeping, I kept a notebook of observations while observing for heat. I created tables and recorded ear tag numbers, dates of estrus, and estrus symptoms by hand in my logbook. I transferred this information into Excel to be used in SPSS to determine statistical significance of my data. Cows that had orange heat patches were recorded by ear tag number as a one, which stood for heat. Cows that had a grey heat patch were recorded by ear tag number as a zero, which stood for no heat.

National Research Proficiency
Resume

1. Career Objectives
I plan to graduate from Anywhere High School in 2015. My Short term goal is to attend Anywhere College and receive an associates degree in Animal Science then attend Any State University to major in Agriculture Education. My long-term goal is to pursue a career as a Post-Secondary Agriculture Educator.

2. Agricultural Science Courses
Plant Science- 2014
Wildlife- 2014
Nursery Landscape- 2013
Agriculture Leadership- 2013
Animal Science Technology- 2013
Basic Agriculture- 2012
Agricultural Marketing- 2012
General Horticulture- 2011

3. Supervised Agricultural Experiences
2014: Beef (100% Ownership) 25 Projects
2014: Swine (100% Ownership) 4 Projects
2013: Beef (100 % Ownership) 21 Projects
2013: Swine (100 % Ownership) 5 Projects
2013: Animal Systems (Research) 3 Projects
2012: Beef (100% Ownership) 18 Projects
2012: Swine (100 % Ownership) 1 Project
2012: Animal Systems (Research) 2 Projects
2011: Beef (100% Ownership) 14 Projects
2011: Swine (100% Ownership) 2 Projects
2011: Animal Systems (Research) 1 Project
2010: Beef (100 % Ownership) 10 Projects
2009: Beef (100 % Ownership) 8 Projects
2008: Beef (100% Ownership) 4 Projects
2007: Beef (100% Ownership) 2 Projects

4. FFA Involvement and Leadership
2013-2014: Chapter President
2013-2014: Region Rally
2013-2014: Area Competitions- 2 Events
2013-2014: State FFA Competitions- 2 Events
2013-2014: National FFA Competitions- 1 Event
2012-2013: Chapter Vice President
2012-2013: State FFA Competitions- 3 Events
2012-2013: National FFA Competitions- 1 Event
2012-2013: Area FFA Competitions- 3 Events
2011-2012: Chapter Vice President
2011-2012: State FFA Competitions- 1 Event
2011-2012: National FFA Competitions- 1 Event
2010-2011: Chapter President
2010-2011: State FFA Competitions- 1 Event
2009-2010: Chapter Vice President

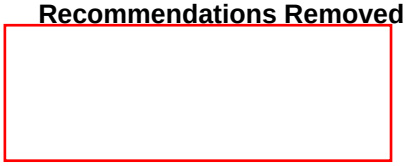
5. Community Service
2014: Volunteered at Any Valley Farm
2014: Volunteered with Young Farmers Association
2014: Volunteered with Farm/City Week
2013: Volunteered at Any Valley Farm
2013: Volunteered with Young Farmers Association
2013: Volunteered with Farm/City Week
2013: Involved in Community Tornado Relief and Clean Up
2013: Instructor at Agriscience camp for Elementary Kids
2012: Volunteered at Any Valley Farm
2012: Volunteered with Young Farmers Association
2012: Volunteered with Farm/City Week
2012: Instructor at Agriscience camp for Elementary Kids
2011: Volunteered at Any Valley Farm
2011: Volunteered with Young Farmers Association
2010: Volunteered at Any Valley Farm

6. Accomplishments
2014: 1st Place: State Livestock Judging Team
2014: National Champion: National Barrow Show Judging Contest
2014: 2nd place individual: Livestock Judging Contest
2014: National Champion High Individual Livestock Evaluation CDE
2014: Reserve National FFA Livestock Judging Team
2013: 1st Place: 11th Grade Showman- Any State National Fair
2013: 2nd Place: State Agriscience Animal Systems Proficiency
2012: National Champion- Agriscience Team in Animal Systems Division1
2012: 2nd Place in State- Ag Marketing
2012: 1st Place in State Agriscience Fair- Animal Systems Division 1
2012: 1st Place: Opening Ceremonies-Some State Conference

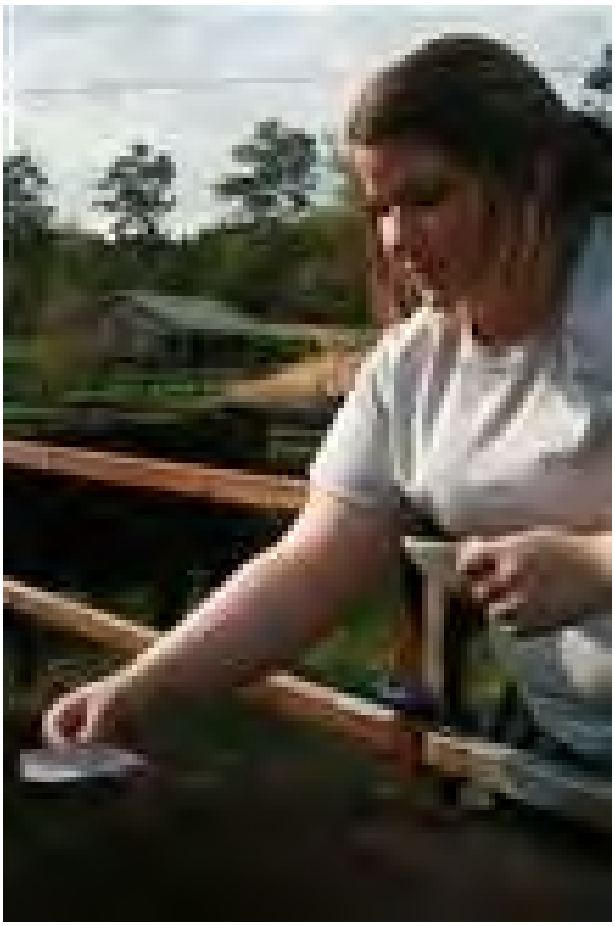
7. Certifications, Skills, and Memberships
2014: National Beta Club
2014: Any State Junior Cattlemen's Association
2014: Any State Junior Simmental Association
2014: Honor Roll
2013: National Beta Club
2013: Any StateJunior Cattlemen's Association
2013: Any State Junior Simmental Association
2013: Honor Roll
2012: National Beta Club
2012: Any stateJunior Cattlemen's Association
2012: Any state Junior Simmental Association
2012: Honor Roll
2011: National Beta Club
2011: Any StateJunior Cattlemen's Association
2011: Any State Junior Simmental Association
2011: Honor Roll

8. Recommendations

Recommendations Removed for Example Purposes



One way to enusre validity is that two different colored ear tags were used for the groups to make sure each heifer was properly identified into the correct group. The synchronized Groups A, D, and E had orange ear tags and the synchronized groups B, C , and F had yellow ear tags. The picture shown above protrayed me reading the ear tag and recording the idenfication number.



To measure for estrus, I used only heat patches to ensure validity. When the heat patch was placed on the cows tail heads the patch was gray then after friction of cattle riding each other, the patch turned bright orange and showed the cow was in estrus. This was represented by a one in my logbook and if the patch was gray it meant no estrus and was represented by a zero in my logbook.

I checked for conception rate during phase three of my experiment by drawing blood from the same heifers and estrus cycle used in phase one and two to determine whether the heifer was bred or open. Each heifer was bred by artificial insemination for at least 30 days before they were tested to ensure validly. I used an 18 gauge needle to draw blood from underneath the tail and placed the blood in a vial.

For writing records, I kept a logbook with the heifers ear tag, date of estrus, and any other estrus symptoms seen. I transferred all of my written records into Excel to be used to calculate the statistical significance.

A CIDR is a controlled intervaginal drug releaser that releases a drug called progesterone telling the cow that they do not need to ovulate an egg. I inserted the CIDR into the CIDR gun and placed the CIDR in the vulva leaving the blue string visible. After administering the CIDR in the vulva, I pulled the CIDR seven days later by pulling the blue string down, as shown above.

In the future, I would like to become a High School agricultural education teacher and my experiments gave me the opportunities to start teaching and mentoring students. The picture above shows me mentoring students at the agriscience camp held over two summers at our high school for elementary and middle school children.

National Research Proficiency
Checklist of Minimum Qualifications

- All items must be "MET" to qualify.
- Only computer-generated checks are shown here.

Item	Value
Each research project includes an abstract, procedure, and conclusion.	MET
Candidate has fully described and selected one to five Learning Outcomes or Efficiency Factors.	MET
Candidate has fully described all ten Skills, Competencies, and Knowledge.	MET
All pictures include captions.	MET
All pictures include a digital upload.	MET
Application includes at least one full calendar year of records.	MET
If graduated, applicant must have completed at least three full years of agriculture, or all of the agriculture offered at the school last attended.	MET
If graduated, applicant must have been out of high school for no more than one year	MET
Ending Date is Dec 31 of the year prior to the National Convention which you are applying to receive an award.	MET
Employer or Instructor's Statement must be printed and submitted with the application.	MUST ATTACH
Personal Page must be printed and submitted with the application.	MUST ATTACH

National Research Proficiency

Manual Review Sheet & List of Attachments

Reviewed By: _____

To improve the quality of applications submitted, and to eliminate the need to disqualify an application at the national finalist level of competition each agricultural proficiency award the state advisor should certify application submitted.

Note: The following are manual reviews of the application and a listing of attachments and page limitations for the complete application. Please review each item and exactly follow the instructions for each attachment.

Manual Review of Application:

Approve (Check if Yes):

- ☐ 1. Applicant has in operation, and has maintained at least one calendar year of SAE records to substantiate an outstanding SAE program, which exhibits comprehensive planning, managerial and financial expertise, SAE Details page(s)
- ☐ 2. Applicant, parent or guardian, chapter advisor, school superintendent or principal and State FFA Advisor properly sign the application.
- ☐ 3. I hereby confirm there are no exaggerated, misleading, deceptive or false statements or claims about the applicant's experience, or performance in this application. Additionally, I confirm this supervised agricultural program has been conducted with the highest possible regard for the quality and human production practices as the products and/or services impact public safety and consumer confidence.

Attachments & Manual Review (Instructions Below)

Approve (Check if Yes):

- ☐ 1. Applicant has included a written evaluation limited to one page by the most recent employer or agriculture instructor describing the progress that the applicant has made in developing the skills and competencies necessary for success within the award area in which they are applying. (Limit to ONE Page 8 ½ x 11)
- ☐ 2. Applicant has included a maximum of one page (maximum size 8 1/2" X 11") of additional information. This may **NOT** include the following: videos; CDs, DVDs, flash drive; etc.
- ☐ 3. In the application, the applicant has included for EACH research SAE project: (1) Abstract, (2) Procedure (Materials & Methods), and (3) Conclusion.

ANYWHERE High School

Instructor Statement:

Lori is a very talented and committed young woman who has made the most of her Agriscience SAE experience. She is an intelligent and organized person who is always ready for a challenge. She has committed herself to learning as much as she can, experimenting with new jobs and skills, and using what she has learned to benefit others. For three years, she has completed estrus and conception experiments with beef cattle and has shared her enthusiasm about Agriscience with students, teachers and school leaders. She teachers/mentors students about designing experiments, public speaking and judging livestock.

Lori has been a member of Anywhere High School FFA chapter for four years. Since beginning her membership, she has become very involved in planning and leading FFA meetings and events. She placed first at state Agriscience Fairs for two years and placed first and fourth at the National Agriscience Fairs. This year, she combined her analytical skills and communication skills to excel at Livestock Judging. She was the high individual at the National FFA Livestock Judging CDE. She has recruited members to not only join FFA, but to compete in CDEs. Lori is dependable, hardworking, and always full of innovative ideas. As a chapter advisor, I depend on her to keep FFA members motivated, aware of upcoming events, and moving toward our chapter goals. Through her efforts, she received a two year scholarship to Somewhere College and will judge livestock for their collegiate team. Lori plans to become an Agricultural Education teacher and she will utilize the skills she has learned from her Agriscience experiments and FFA involvement to become an asset to the community.

Respectfully submitted,

Name/Signature here

Agricultural Education Teacher
Anywhere High School

PERSONAL PAGE UNAVAILABLE

ABSTRACT/RESULTS UNAVAILABLE