

Wyoming FFA State Mechanics Contest 2015
Agricultural Technology and Mechanical Systems
Team Activity: Integrated Pest Management

Event Format:

A. Equipment Provided:

1. Calculator – participants will be allowed to provide their own.
2. Scratch paper for problem solving.

B. Objective:

The team activity evaluates the ability of team members to work together while using decision-making and problem analysis skills by applying concepts taught in horticulture and plant sciences.

1. Members of a team work together cooperatively to complete this section.
2. Sixty (60) minutes are allowed for completion of the team activity. At the end of the activity, each team submits the completed documents to be scored.
3. The team activity involves the use of construction skills and the resource information.
4. The team activity has a maximum value of 400 points per team and is only included in the team score
5. All team members must be involved in the team activity to receive credit. If a team has two or less participants no credit will be allowed in the team portion of the event.

Directions:

Work as a group to complete parts A, B, and C. While you are working you will be evaluated by an observer on your ability to work as a team. Your team will have 60 minutes to create a computer generated report while utilizing materials and equipment provided to solve the problems below. Your document must include a cover page with title, state name, a description of the activity, a description of each team member's role, calculations/ diagrams identified by instructions and correlated with the activity theme. You must also include any and all justification(s) about how you reached your answer, as well as proper formatting throughout the typed document, including: typed Times New Roman 12pt font, 1" margins, and double spacing. Recall you will be graded on process and team cooperation and sharing of roles and tasks, as well. PLEASE be respectful of materials and equipment provided, do not mark on anything except for scratch paper provided, thank you.

Scenario:

Pesty-Pest Control is a pest-service which has just opened a new branch in Wyoming. The company has recently hired you to find pest solutions. You will be helping three corn producers with their pest concerns. For more information please flip the paper over for the Memo from your new boss.

Memo

To: New Employee Team
From: Joe Farmer
Date: April 6, 2015
Re: The Task

Greetings,

We are very pleased to open a new branch of Pesty-Pest Control in Wyoming. With word of our opening we have already received complaints about a few pests in that area. It will be your duty to identify the pests, estimate the damage-cost caused by the pests, and recommend a management practice to be used. These three parts need to be presented in a formal document using Word or Excel. Please ensure that there is a cover page with the required fields as listed on the previous page. Your document needs to include all three sections, as listed below. I (your boss) would recommend using graphs, figures, or tables to help present your information. I would also recommend dividing the report into three different sections.

- A. **(Identification 30 pts./ Justification 20 pts.)** For the first section of this task, you will utilize the three letters that our customers have sent you, to identify the three unknown pest species. The pests are labeled as: Pest A, Pest B, and Pest C. In your resources you will find a few dichotomous keys to help you with identification. You will use two keys to identify each individual pest; one to identify the classification of the pest and one for the insect name. Make sure to explain how you came to these conclusions. This includes special characteristics that helped you classify each insect.
- B. **(Calculations 25 pts./ Justification 25 pts.)** The second thing objective that your team will need to accomplish is to provide an estimated damage cost. You will need to have the cost for each pest, as well as the grand total damage-cost caused by all three insects. In the reports that I (your boss) have received, there is a combined total of 1,256 acres of corn field being affected. In this region, each acre produces an estimated 3.5 bushels of corn and each bushel costs \$4.32. For specific data regarding individual pest damage, please review the chart below:

	Acres Affected	% of crop damaged
Pest A	628	18%
Pest B	385	34%
Pest C	243	47%
It is predicted that crop prices will fall by 2.3%, please use this to estimate your new cost		

- C. **(Calculations 20 pts./ Justification 20 pts.)** Here, at Pesty-Pest Control, we base our practice on Integrated Pest Management standards. We offer advice on mechanical and cultural practices and help with chemical and biological controls. Now, is the opportune time to introduce natural predators at the customer’s request. You will be required to determine the most cost effective predator for each pest species. Determine costs based on the acres used in Part B. Please provide pros and cons for using biological control.