

# Tips on Visual Aids for Meat Science Courses

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The use of visual aids in the classroom has become very popular in recent years; flip charts, chalkboards, easel cards, movies, filmstrips, slides and transparencies. "A good picture is worth a thousand words." However, a poor visual is worse than not at all.

Why are visuals important:

1. Today we are visual minded; movies, T.V., signs, all kinds of visuals are before us today.
2. Retention is greatly increased with the aid of good visuals; speeches and lectures may motivate but we retain only about 10% of what we hear. When good visuals are included, verbalization and visualization increases retention to about 50%.
3. Visual aids encourage organization. The lecturer is forced to organize his thoughts. His message will be improved and condensed into a more meaningful story.
4. Misunderstanding is less likely to occur. Misinformation can be avoided.

How do you present your visuals?

How well do you scrutinize the visuals you present?

When do you use visuals?

Everyone using visual equipment should become familiar with that equipment and make sure it is functional and in proper repair before class. Care should be taken that the equipment is safe to use and clean. Be sure you know how to change the lamp and have a spare lamp available. What happens when a slide jams or films break.

I would like to discuss briefly the 2 × 2 slide projector and the overhead projector or view graph.

The overhead is the most popular piece of visual equipment in many classrooms. This equipment is also the most misused piece of all our visual equipment.

The overhead was designed to use in a fully lighted room. It also allows the operator to face the audience as the overhead is used. By using the on-off switch attention can be directed toward the lecturer or toward the screen. Material can be revealed point by point and your class will not be reading ahead of you. This equipment is relatively simple and is quiet and causes little distraction to the class. The lecturer can readily review a previous transparency or the order may be changed or some plates may be omitted during the presentation.

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The transparency or visual should be relatively simple and everything presented should be instantly recognizable. Remember seven words are better than seven sentences. Keep the visual uncluttered.

Remember:

1. The visual images must be large enough for the audience to see easily.
2. Material must be easy to understand.
3. The visual is used to reinforce and add to the lecturer's commentary.
4. Transparencies are easy to make and relatively inexpensive.

The use of 2 × 2 slides has proven to most people to be very beneficial in the classroom. If a slide is to be effective it must make its one point by impact. If one is presenting data in tabular form consider the following suggestions:

1. Do not use table numbers.
2. Eliminate title or reduce it to keywords.
3. Simplify column headings.
4. Consider data. Can you use line graph or bar graph.
5. Choose suitable scale so that height/width ratio is 0.7:1.0.
6. Identify curve or bars simply and legibly.

A slide should not be projected for a long period of time. Generally speaking, a slide should not be on the screen for more than 30 seconds. If your presentation is such that one slide will not follow immediately (30 sec) the presenter will find it advantageous to use a blank slide (colored foil) so that he may maintain the attention of the audience.

There are many kinds of slides to use; black on white, white on black, blue, red, green, violet foils, etc.

Before your presentation, check your slides to make sure they are in the proper order and placed properly in the slide tray. A slide may be placed in the projector 8 ways but only one is correct. Talk to your audience, do not talk to the screen. Use a microphone if it is available.

Black and white positives.—Copy is photographed to produce a negative which in turn is used to print a positive transparency, usually on the same kind of film. Alternatively, the black and white positive can be made in a single step through the use of black and white direct positive film.

Slides of this type have the following characteristics:

1. Visibility is easily obtained even with a projector of low power if the room is darkened, and is maintained even in a room with considerable light if a high wattage projector is used.
2. In a completely darkened room, the brilliance of the back-

tion of these slides, it exceeds what necessary for either of the two types yet to be discussed.

Direct positives with color film.—Color film, which has become the standard slide type, has an advantage from the point of view of working time required of the speaker, although the minimum elapsed time from film exposure to a useable slide may be greater. These slides may be characterized thus:

1. Colored copy gives a colored slide directly.
2. If the film is slightly overexposed (by usual standards), the slide will have all of the advantages of visibility usually associated with black and white positives, while retaining a neutral background that will produce no glare on a beaded screen.

Negatives.—This is the slide type which is most often prepared by the amateur who discovers at the last minute that there will not be time to have his slides made professionally. The results range from very good to atrocious. A common mistake is to use a high contrast film. Although this would be appropriate if the negative were to be used for printing a positive, it is questionable if the negative is to be used directly as a slide. If the negative is of high contrast, the image produced by a projector of low wattage will be barely visible; that resulting from the use of the powerful projector will be visible, but it will appear to vibrate if one looks at the screen for more than a few seconds. A more generally useful negative slide is one of low contrast, and one which (by usual printing standards) has been underexposed.

Low contrast negative slides may be characterized thus:

1. If the projector is of low power, visibility is good in a completely darkened room and fair in one with low to moderate illumination.
2. If the projector has a lamp of high wattage, visibility is excellent under any reasonable level of room lighting.
3. Slide density can be made about the same as that of properly exposed colored slides, so that the two types can be shown satisfactorily in combination.
4. A moderate amount of time and photographic skill is required. It is less than that needed for the preparation of printed black and white positives.
5. The negatives virtually always have sufficient curl that they cannot be used in cardboard mounts. They must be placed in a paper mask between snugly-fitting plates of glass.

Photographing the copy.—Copy must be illuminated uniformly. This is achieved simply (if the copy is on translucent paper) by taping the copy on a clean window glass with a north exposure. The transmitted light will be uniform. If artificial light is used, as is necessary with opaque copy, four photo flood or reflector flood bulbs mounted at the corners of a rectangle above the copy are desirable. Take particular care to orient the camera so that the full field is used. A single lens

considered acceptable. Determine exposure time by assuming a film speed about one-half the printed rating, since these are direct positives. It is wise to make additional exposures of either film until you are sure of your technique.

When judging slide quality do not rely upon conclusions reached after merely viewing a slide held between the fingers. If you wish to know how a slide will appear to an audience, reproduce the physical conditions as nearly as possible. The quality of a slide will be determined in part by the age as well as the wattage of the projection lamp, the quality of the projection lens, the size of the screen in relation to the size of the room and the amount of light in the room.

### Discussion

*Jim Kemp, University of Kentucky:*—What about turning the overhead projector on and off? Are there any repercussions to this?

*E. A. Kline:*—To answer this, Jim, I use the switch and I turn it on and off. I like to do this because if I leave the overhead on, pretty soon, my students start fidgeting; they get a little uneasy and they want to know when I am going to put something on the screen; maybe your students are different than mine. If you don't want to turn the switch off, I would suggest you put a blank sheet of paper over it. Then you can slide another transparency in and this will save a little wear and tear on the switch if that is of concern. I don't know what the extra use of the switch does to the life time of bulbs.

*Auttis Mullins, Louisiana State University:*—How long is the average expectancy of the visual aid?

*E. A. Kline:*—Auttis, I have some visuals I have been using a lot longer than I am willing to admit. You need to keep them up-to-date, but once you have something down I wouldn't throw it away because you used it last year. I have some visuals I have been using for 10 or 11 years.

*William Moody, University of Kentucky:*—What about writing on the overhead as you develop the overhead?

*E. A. Kline:*—Now my penmanship and artwork is not that good, Bill, so I have not really done that. Now, some people do and John Forrest tells me he writes on the overhead and this overhead is equipped with film right on it that you can write on and advance it. I have never done this. We have an agronomy professor at home that used the same classroom I used and he practically had his whole agronomy course on there; he would just roll it up and never erase it. I don't know whether the students would come in there at night before the exam or not. Well, I think this is right and I know we have one professor that carries more overheads than I do in class, and he just goes too fast. He puts one on and then the next one and then the next one and they just don't have time to breathe. They can't even catch their breath, and I think the lecturer needs to be cognizant of this and allow some time. Now, a lot of my overheads are just outlines of points that I

want to cover. So I do a lot of this and just develop the outline as I go along.

*Robert Kauffman, University of Wisconsin:*—He is questioning the balance of visuals in the classroom so that we don't perhaps get an overbalance of visuals and kill our class this way.

*E. A. Kline:*—I don't know, Bob, if I have any exact philosophy on this or not. I hope that I have not killed any of my classes by presenting too many visuals. I don't know what an optimum amount might be. Some people could get by by showing more visuals than others, depending on how they

use them. Other people might want to show a few more visuals than they do. Now I know some people go to class with just a notebook and strictly lecture. I can't do that. I have to have some visuals, at the beginning and maybe half way through, or at the end just to reiterate some points I tried to make. I am working on a presentation right now where I have three screens, three projectors and a tape recorder. The only thing I don't have is somebody to turn the lights on and off. If I can get this accomplished, I wouldn't have to go to class. I have one lecture that I give where it is 50 minutes of slides.