Photography of Maize

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This is a guide to help the neophyte successfully photograph maize. The scope of this guide is limited to the use of the 35 mm camera, macro lenses, extension tubes, and dissecting microscopes. Microphotography is discussed in Ruzin and Sylvester (this volume). For successful photography, the film, camera (including optics), subject, and lighting must all be matched for the particular image you wish to capture. The film, camera and subject will be dealt with separately below. Lighting will be discussed in each section as it relates to that subject.

The most important advice is to experiment and to bracket exposures. This will teach you more than anything you read and in the long run will save film and time. Take a shot with several camera settings; alter the lighting; photograph the subject from several angles and distances. Bracketing is especially important with perishable and irreplaceable...
subjects. Record the conditions and settings for each photograph. As you photograph, be alert to idiosyncrasies of your camera. For example, the field of view on your photographs may be slightly larger or smaller than that through your viewfinder. Pay attention to details such as centering the subject in the frame and keeping feet, fingers or unnecessary shadows out of the field of view. Always be conscious of light, and use it to your advantage. The human eye interprets the lightest part of a photograph as the top, so try to arrange the photograph so that the lightest part will coincide with the top of the subject.

CAMERA

Camera Parts

The camera consists of the camera back and the optics. The camera back holds the film and advances it, controls the shutter, and usually contains a built-in light meter. If you are buying a camera back, get one with an automatic exposure setting. The optics (lens) focuses the image on the film and controls the magnification and depth of field. A 50–100-mm zoom macro lens is a versatile lens for general use. For close-up photography a lens with an image ratio of at least 1:4 is recommended. This produces an image on the film one-fourth the size of the actual image. For more magnification, extension tubes can create an image ratio of 1:1 or greater. These fit between the lens and the camera back and are much less expensive than a higher-power lens. The longer the extension tube, the greater the degree of magnification. For yet-greater magnification, use a dissecting microscope with a photo tube for mounting a camera.

Camera Settings

Important settings and features on the camera are listed below along with a brief description of their purpose.

ASA or ISO refers to the film speed. The camera setting must match the ASA or ISO rating of the film. The exposure times given by the light meter are adjusted to match the film speed setting. Some cameras automatically read the ASA from the film.

The light meter measures the amount of light coming through the lens. A needled scale inside the viewfinder indicates exposure time in relation to the set ASA and the available light.

Exposure is the length of time the shutter stays open, exposing the film to light. The automatic setting exposes for the time indicated by the light meter. The numbered settings give the respective length exposure regardless of the light meter reading.

f-stop controls the lens aperture size. This controls the depth of field and the amount of light coming through the lens. High f-stop settings (e.g., 22) have small apertures, large depth of field, and require high light or a long exposure. Low f-stops (e.g., 4) have wide apertures, narrow depth of field, and require a short exposure.

The choice of settings depends on the circumstances, but keep the following in mind: