



The Dark Side of the Sun: Sun Exposure and Agriculture¹

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Human beings everywhere share a special relationship with the sun. We are warmed by the sun and our earth sustains and enriches itself with the help of its glimmering rays. However, as we crave the sun's heat and light, this golden star can have a dangerous and deadly effect upon us. We must be aware that there is a dark side to the sun and learn how to protect ourselves from it. Our health, well being, and livelihoods depend on it.

AGRICULTURAL WORKERS ARE AT RISK

The sun sheds invisible ultraviolet rays which can be extremely dangerous to the skin and are responsible for sunburn, premature aging and other types of skin damage including cancer. Agricultural workers top the list of candidates for skin cancer because they are outdoors and are exposed to the sun on a daily basis. They also, probably more than any other group of workers, share a legacy of respect for the forces of nature and the knowledge to best co-exist with these elements.

Like any other part of our bodies, skin is a place where cancer can develop. Fortunately, most skin cancer can be cured when discovered early and treated promptly. If you know the facts about skin cancer, you know that it can be prevented.

Skin cancer is linked to excessive sun exposure. According to the American Cancer Society, 600,000 cases of skin cancer occur every year in the United

States. Out of the 600,000 cases, an estimated 8,200 end in death.

When exposed to the sun, our skin can go through a series of changes:

Short Term Effects

Suntan: A suntan is not a sign of good health. As a defense mechanism, the body produces a pigment called melanin, which turns the skin brown. Suntanning causes skin to age prematurely.

Sunburn: Sunburns occur when the body receives excessive amounts of radiation (the full effect of the sun is not realized until 14 to 24 hours later). Along with a sunburn, the skin may blister, which indicates a second degree burn.

Delayed Effects

Skin changes: Skin can change in several ways. The sun can cause skin to age, wrinkle, thicken, dry out, freckle, and blemish, and develop a rough texture.

Skin Cancers: Skin cancers are caused by excessive exposure to the sun's ultra-violet rays. It is important to remember that sunburns are not the only condition that lead to the development of skin cancer.

1. This document is part of the Agricultural Safety and Health Series. For more information about agricultural safety & health, contact: Project Director, Oklahoma Agricultural Health, Promotion System, Department of Biosystems and Agricultural Engineering, Oklahoma State University; or The National Institute for Occupational Safety & Health, 4676 Columbia Parkway, Cincinnati, Ohio 45226, 1-800-35-NIOSH.
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TYPES OF SKIN CANCER

There are three basic types of skin cancer: Basal-cell carcinoma, Squamous-cell carcinoma and Melanoma. The first two types are very common and easily curable, while the third type, if not detected early, can be very dangerous and even deadly.

- The most common and seldom life threatening:
 - Basal-cell carcinoma
 - Squamous-cell carcinoma
- Every year approximately 32,000 new cases develop causing about 6,700 deaths:
 - Melanoma

WHAT DO YOU NEED TO KNOW ABOUT MELANOMA?

Melanoma is different from other skin cancers because it has a tendency to spread to other parts of the body. Once it reaches vital organs melanoma is very difficult to treat, and can be lethal.

Melanoma cells produce melanin, the skin coloring agent, causing this type of cancer to be tan, brown and black. It may appear suddenly, but most often it occurs near a mole or a dark spot on the skin. It is essential that you know the location of moles on your body so that you can recognize any change in their size, shape, and color.

Warning Signs of Melanoma:

People who work outdoors, such as agricultural workers, are exposed to the sun on a daily basis. It is critically important that these people be keenly aware of skin cancer's warning signals and get into the habit of doing regular monthly self examinations.

Finding changes in skin growths or the appearance of new growths is the best way to find early skin cancer. Each skin cancer can be readily detected.

- Any unusual skin condition, especially change in size or color of a mole, pigmented growth, or spot.
- Oozing, bleeding, or change in the appearance of a bump or nodule.
- The spread of pigmentation beyond it's border.
- A change in sensation such as itchiness, tenderness, or pain.

If any of these warning signs exist, consult your physician--Early detection is critical!

EARLY DETECTION CAN LEAD TO A CURE!

While most skin cancer can be prevented, many can be cured. Nearly 100 percent of those patients diagnosed with basal and squamous cell cancers will survive five years or more if treated promptly. Melanoma patients, if treated promptly, have a 90 percent chance of a five year survival rate.

However, it is important to remember that cancers can recur. Skin cancer patients should conduct monthly skin exams, follow their physicians advice, and avoid excessive sun exposure.

Risk Factors Leading to Skin Cancer:

- **Excessive sun exposure:** What is excessive? The amount of sun varies from person to person, but it is important to remember that no one is immune to the harmful rays of the sun.
- **Fair complexion (skin type):** The fairer your skin, the greater your risk. Fair skin burns and freckles easy. However, dark brown and black skin are vulnerable as well. The greatest risk areas for this skin type are the palms of the hands, the soles of the feet, and under the nails.
- **Geographic location:** The risk of skin cancer is higher in places with intense year-round sunshine. In the United States, Arizona has the highest incidence of skin cancer. It is important to remember that anyone, regardless of geographic location, can develop skin cancer.

PREVENTION

The strongest weapon we have against skin cancer is **prevention**. By keeping exposure to the sun at a minimum, risks are automatically reduced. There are a number of preventative factors to consider:

1. Try and avoid the sun between 10:00 a.m. and 3:00 p.m. Since farmers are outside most of the day, it is important they realize that the sun's ultraviolet rays are the strongest between 10:00 a.m. and 3:00 p.m..
2. Wear protective clothing--cover up with a wide-brimmed hat, long-sleeved shirts and pants to ensure the sun won't penetrate.
3. Use sun screens--Finding the right sun screen may, at first, seem like an exercise in frustration because

of the number of products on the market. However, The American Cancer Society recommends that you use a sun screen with a sun protective factor (SPF) of 15 or higher. Apply the sun screen to any part of the body that is not protected by clothing. It is important to remember that the sun screen must be reapplied throughout the day in order to be effective.

4. Know the ways of the rays--You can get burned just as easily on a cloudy day as you can on a sunny day. Also, it is important to know that the sun's rays can penetrate three feet of water.
5. Don't use sunlamps, tanning parlors, or tanning pills--These things can be just as harmful as the sun.

CHILDREN AND THE SUN

Children can also develop skin cancer which may not show up until later in life. A blistering sunburn before the age of ten will double the probability of children developing malignant melanoma sometime during their lifetime.

Being exposed to the sun throughout a lifetime can be deadly. Sun exposure is cumulative; the more sun you are exposed to and the longer you live, the greater your chances of having skin cancer.

Protecting skin from damaging ultra-violet rays is more crucial during childhood than throughout the adult years.

The American Cancer Society suggests the following guidelines to protect children from the sun:

S --- Shadow test- if the shadow is shorter than the child, the sun is at its strongest and most dangerous point.

U --- Ultraviolet sunblock with an SPF of 15 or greater should always be used if the child is exposed to the sun.

N --- Now! Protect children from the harmful effects of the sun now. Start today!

While the prevention and detection of skin cancer may involve changing some attitudes and behaviors, there's no doubt that the benefits of good health will be just as renewing as each sunrise and sunset.

REFERENCES

The American Cancer Society--Texas Division, Inc.