Changing Crops During Drought Meeting Kit

WHAT IS DROUGHT?

Within an agricultural context, drought is a prolonged period of deficient precipitation which results in negative impacts on crop growth or yield. An increasingly warming climate is expected to intensify the frequency and severity of drought in the near future. Identifying key physiological limitations to productivity under drought and mechanisms of crop tolerance to water deficit stress will be important for improving yield stability.

THE EFFECTS OF DROUGHT

Many farmers are changing their crops to less water intensive plants, drought resistant crops, or leaving their lands fallow. With this shift, causing needed changes in cultivation and harvesting, farmers must conduct hazard analysis to update safety procedures for equipment, tools, and chemicals related to new crops and processes.

CROP CHANGE FACTORS

New crops may require changing implements on your farming equipment. Make sure to:

- Get training on the operation of any new blades, discs, or other implements.
- Use lockout/tagout procedures when you remove and add implements.
- Keep blades sharpened.
- Inspect equipment before each use for correct operation.

Changes to hand cultivating, treatment, and crop harvest techniques requires that you:

- Evaluate that your hand tools are appropriate for the new crop and train employees to use them.
- Examine handle sizes, shapes, angles, and lengths to ensure that work can be done with good ergonomics and safe body postures.
- Train employees on proper ergonomics, body positioning, and good lifting techniques to reduce the risk of strains and sprains.

Changing water conditions can also require changes to irrigation systems.

- Use good trenching techniques when you dig to add or remove equipment.
- Formulate and apply lockout/tagout procedures when you work on power sources and automatic equipment.
- Watch for and avoid power lines when you add or remove lengths of piping.
- Watch for changing movement and activation patterns of automatic equipment.

Address chemical safety if you change pesticides, fertilizer, or other additives with your new crop.

- Update safety data sheets for every new chemical.
- Review chemicals for personal protection equipment requirements.
- Train employees on potential hazards and proper handling procedures for all chemicals used in your operation.

Consider other field safety issues that might change with your crop. Update procedures and train employees on:

- Anticipated new pests that may be attracted to new crops.
- Crop activities that may occur at different times of the day or season.
- Updates to heat illness and cold stress prevention procedures.
- Lighting needs for safe movements and activities.
- Changes in field vehicle needs and safety procedures.
- Terrain changes and uneven or unstable walking surfaces.

ALTERNATIVE FORAGES

Before giving up on existing crops, examine your current crops for silage potential. For example, corn may be the best forage alternative available.

Existing crops as alternative forages

- Alfalfa, red clover, trefoil
- Corn and soybeans
- Peas or canning crops
- Small grains
- Grasses.

Summer-seeded crops. These generally should be seeded by July 15, but only if moisture is available for germination and emergence. Crops include:

- Sudan, sorghum-sudan, and forage sorghum
- Hybrid pearl millet
- Soybeans (alone or mixed with sorghum-Sudan)
- 70-day corn
- Brassicas – forage rape, turnips
- Millets – common, German, foxtail or Japanese
- Buckwheat
- Winter grain with field peas. These should be planted from mid- to late-August.

Alternative cash crops. If you planted cash crops, such as wheat or corn, but drought is causing problems, you may decide to replant. Some good alternatives are buckwheat and millet, which can be planted in July. These are very short season crops and both are high in fiber. Consider whether you have a market to sell these two crops or whether you can feed them to livestock.

REDUCE THE RISK OF DROUGHT STRESS: The only sure method to avoid drought-stressed crops is to use irrigation. However, other management practices can help reduce the risk of drought stress.

Early planting. By planting early, you increase the chance of having pollination completed before the driest part of the season.

Optimum fertilization. Proper fertilization will promote healthy plant growth and efficient moisture utilization, essential for high yields in normal and dry years.

Adequate weed control. Weeds compete with crop plants for water, so controlling weeds will provide more soil moisture for the crop.

Residue management. By maintaining a cover of residue through conservation tillage or no-till, you can reduce the amount of evaporation from the soil surface and conserve water for the crop’s use.

FINAL WORD

In these days of worldwide climatic changes, farmers are forced to make dramatic changes in farming operations. Due to drought conditions, farmers are reduced to change their crops to fewer intensive plants, drought resistant crops, or leave their lands fallow.