"CULL PILES: A SOURCE OF POTATO DISEASES"

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Potato cull piles are a necessary evil. In the United States with around 400 million cwt. of potatoes produced annually, even if a small percentage of 4-5 percent is graded out that could end up in a cull pile, it would mean many millions of cwt. that are potential sources for diseases. Potato cull piles are common practice and in years of overproduction even more cull piles can be seen in fields in potato producing areas. In general potato cull piles serve as a tremendous source for disease-bacterial, viral and fungal diseases. While cull piles can cause problems for the potato industry there are proper ways of managing these piles.

Culls begin with the farmer. Potatoes are picked out during grading for one reason or another and are not sold or utilized. Sometime these potatoes are diseased or damaged, are not the right size or shape, growth defects, sunburn, etc., or there was simply an overproduction. In certain areas where opportunities exist, farmers can transport their culls to feedlots where the cull potatoes are fed to livestock. However, it is not real common because livestock production is generally not a large enterprise in many of the potato producing areas.

Potato culls can also be utilized at starch plants, however, there are a limited number of starch plants in the United States and several areas do not have starch plant facilities at all.

Whether or not cull piles pose a problem depends largely on how they are managed. Potatoes should be spread out very thin and evenly in an open field and allowed to freeze. If not, they should be cut up with a disc several times and even plowed under or buried. Repeated tillage operation should follow to grind up the potatoes and kill any tubers that may start to sprout, especially seed potatoes.

Cull piles are a very big issue relative to seed production. Seed growers are very concerned about cull piles because they can be devastating to the seed crop with bacterial, fungal and viral infections that can be transmitted by insects, rain and wind.

In summary, overproduction is always a potential problem in the potato industry whether seed, processing, chips, flakes, fresh. Factories and storage sheds must use proper husbandry practices also.

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Destroy all cull piles either by freezing, discing, burning, burying, feeding, making starch, flakes, or composting to destroy all tubers. Growers must spread piles evenly so that they will freeze uniformly or be disced or plowed down sufficiently. Heat can be generated by potatoes if they are stored too deep in the piles and they could survive.

One important fact to remember is that diseases have to have living tissue to be a source of disease and when the potatoes are dead or destroyed the fungus and other diseases are dead also. Management begins with the farmer and ends up with the processor and any step between production and consumption there is potential for discarded potatoes to be a source of disease. The industry must work together to minimize the threat of disease that can be devastating to all entities involved in agriculture production.

The other alternative is to dump the excess and unwanted potatoes into a field or area where they must be destroyed. Cull piles are a source of all types of disease for the growing crop. In many cases, they are diseased, undesirable tubers that have been graded out over the course of the winter and are dumped out in the spring of the year. In times of overproduction seed is dumped in the spring of the year where temperatures do not allow for freezing to destroy the tuber and volunteers can be a severe problem and an excellent source of innoculum for diseases such as blackleg, ring rot, late blight, PVY, etc. A combination of strong winds and rain can create aerosols that move bacteria and fungal organisms from cull piles to adjacent potato fields.

In many situations if cull piles are not properly managed with insecticides, Colorado potato beetles, aphids, leafhoppers, flies, etc., they can be a haven for insects to breed in. Many of these insects such as flies and aphids can carry bacteria and viruses to nearby potato fields.

Probably the biggest threat from cull piles is an innoculum source for late blight. Late blight can overwinter in the tubers in volunteer potato piles and can grow up through the plant, sporulate and cause infestation the following year. In many areas of the country where late blight is a problem, most people contribute the main source of infection is from volunteer potatoes growing in cull piles.