

CULL POTATO DISPOSAL BEST MANAGEMENT PRACTICES

May 22, 1997

These Best Management Practices (BMP's) were developed in response to L.D. 1540, "An Act Concerning Potato Blight Eradication and the Disposal of Cull Potatoes" which prohibits uncontrolled cull potato piles between June 10 and October 1 of any year. These BMP's are designed to provide guidance for acceptable cull potato disposal methods that address both pathogen and water quality concerns.

1. CULL POTATO WINTER SPREADING BMP: This BMP provides acceptable procedures for disposal of cull potatoes by spreading them in fields when temperatures will be low enough to freeze the potatoes and effectively kill pathogens. In addition, frozen potatoes should desiccate so that nutrient-laden runoff from fields where cull potatoes are spread is minimized.

Cold Weather Temporary Cull Potato Storage Criteria (prior to being spread): Any temporary storage of cull potatoes between the dates of October 1 and the following March 1, must be in accordance with the Cold Weather Temporary Cull Potato Storage BMP.

Warm Weather Temporary Cull Potato Storage Criteria (prior to being spread): Any temporary storage of cull potatoes, between the dates of March 1 and October 1 of the same year, must be in accordance with the Warm Weather Temporary Cull Potato Storage BMP.

Field Spreading Rate For Cull Potatoes:

Soil Criteria	Spreading Rate
Well drained and deep to bedrock (> 40" to seasonal high water table and bedrock)	Up to 400 Barrels/ Acre
Moderately well drained (16" to 40" to Seasonal high Water Table) and moderately deep (20 to 40" to bedrock) or somewhat excessively drained	Up to 300 Barrels/ Acre
Very poorly drained, poorly drained, somewhat poorly drained, excessively drained or very shallow to bedrock.	Not allowed.

Appropriate Dates for Field Spreading Cull Potatoes:

South of the Southerly Boundary of the
Southern Aroostook SWCD:
October 1 to March 15

North of the Southerly Boundary of the
Southern Aroostook SWCD:
October 1 to March 30

Setbacks for Field Spreading of Cull Potatoes: Field spread cull potatoes shall be set back a minimum of 100 feet from wells, springs, ponds, streams, and lakes. No spreading shall occur in depressions and swales.

Slopes for Field Spreading Cull Potatoes: Cull potatoes shall not be field spread on sustained slopes of greater than 15 percent.

2. CULL POTATO BURIAL BMP: Cull Potatoes may be disposed of by burial only if the criteria for the site, setbacks, slope, cover, stabilization, inspection and maintenance as set forth in the Maine Department of Environmental Protection Permit-By-Rule for Cull Potato Disposal by Burial are followed.

Cold Weather Temporary Cull Potato Storage Criteria (prior to being buried): Any temporary storage of cull potatoes, between the dates of October 1 and the following March 1, must be in accordance with the Cold Weather Temporary Cull Potato Storage BMP.

Warm Weather Temporary Cull Potato Storage Criteria (prior to being buried): Any temporary storage of cull potatoes, between the dates of March 1 and October 1 of the same year, must be in accordance with the Warm Weather Temporary Cull Potato Storage BMP.

3. COLD WEATHER TEMPORARY CULL POTATO STORAGE BMP: This BMP provides acceptable procedures for temporary storage of cull potatoes between the dates of October 1 and the following March 1, when tuber breakdown and leachate generation will not occur due to cold temperatures. Cull potatoes placed in Cold Weather Temporary Cull Potato Storages must be removed by March 1 and either utilized (such as a feed source), disposed of in accordance with another Cull Potato Disposal BMP, or placed in Warm Weather Temporary Cull Potato Storage.

Cold Weather Temporary Cull Potato Storage Site Criteria: Cold Weather Temporary Cull Potato storages cannot be located on wetlands or within the 100-year floodplain.

Cold Weather Temporary Cull Potato Storage Cover Criteria: No cover material is required for Cold Weather Temporary Cull Potato Storages as there is no threat of disease transfer to a growing potato crop.

Cold Weather Temporary Cull Potato Storage Site Setback Criteria: Cold Weather Temporary Cull Potato Storages must be setback a minimum of 50 feet from wells, springs, ponds, streams and lakes and they must not be placed within drainage swales or depressions. It is also recommended for public relation and perception purposes that Cold Weather Temporary Cull Potato Storages be located some distance from neighboring dwellings.

4. WARM WEATHER TEMPORARY CULL POTATO STORAGE BMP: This BMP provides acceptable procedures for the storage of cull potatoes between the dates of March 1 and October 1 of the same year, when tuber breakdown will or is likely to occur. Cull potatoes placed in Warm Weather Temporary Cull Potato Storages should be disposed of each fall, in accordance with another cull potato disposal BMP (such as field spreading). Warm Weather

Temporary Cull Potato Storages must however, be emptied by March 1 of any year following a year in which it was used between the dates of March 1 and October 1, with the cull potatoes being utilized (feed, starch source, etc.) or disposed of in accordance with another cull potato disposal BMP. Cull potatoes can be transferred from Cold Weather Temporary Cull Potato Storage to Warm Weather Temporary Cull Potato Storage, but not vice versa.

Warm Weather Temporary Cull Potato Storage *Site Criteria*:

a. Warm Weather Temporary Cull Potato Storages that are not completely self-contained (constructed in such a way that if any leachate is generated it will be captured and will not be discharged to the soil) must be sited upon well-drained, deep (40 inches or more to the seasonal water table and bedrock), non-sandy soils. These criteria can be met by natural conditions or by site modification such as lowering the water table or adding fill.

b. Warm Weather Temporary Cull Potato Storages that are self-contained (where leachate will be generated but will not be discharged to the soil) have no minimum soil conditions for siting.

Warm Weather Temporary Cull Potato Storage *Covering Criteria*: No cover material for Warm Weather Temporary Cull Potato Storage is required from March 1 to June 10 (or from October 1 to March 1, if used between those dates). From June 10 to October 1, all Warm Weather Temporary Cull Storage piles shall immediately be covered (including the unbermed side) in a manner so as to prevent potatoes from sprouting and potentially spreading disease. Acceptable covering methods include, but are not limited to a minimum of 6 inches of sawdust, 12 inches of soil, or 6 mill black plastic polyethylene, all of which must completely cover the pile and, be secured and remain in place.

Warm Weather Temporary Cull Potato Storage *Setback Criteria*: Warm Weather Cull Potato Storages must be set back a minimum of 100 feet from neighboring dwellings, property lines, wells, springs, water bodies, streams, gullies, swales, ravines and down slope diversions (those not associated with construction of the storage site).

Warm Weather Temporary Cull Potato Storage *Site Construction Criteria*:

a. Warm Weather Temporary Cull Potato Storages that are not self-contained (discharge to the soil) must be constructed in accordance with "Tuber Stockpile Compound", Maine Agricultural Experiment Station Miscellaneous Report 318. In addition, the stockpile must be surrounded on three sides by an earthen, sawdust, hay bale or similar berm at least two feet in thickness and the down slope leachate trap (ditch) must be constructed with a level lip spreader which outlets to a vegetated buffer. When it is desirable to utilize nutrients in the leachate as a soil amendment, or the storage site has soil and/or site limitations, culls should be placed on a sawdust, or similar absorptive pad, 12 to 18 inches thick. Sawdust can also be mixed with the culls as they are placed on the storage site to further act as a leachate absorbent. When the culls are to be used as a soil amendment they, along with the leachate saturated bulking agent, shall be applied on the land in accordance with the Cull Potato Winter Spreading BMP. This is because there may be tubers that have not broken down and therefore pose a disease threat.

(NOTE: To maximize the soil amendment benefits of the culls and bulking agent, they

should be land applied in the fall and incorporated into the soil).

b. Warm Weather Temporary Cull Potato Storages that are self-contained (non discharge) have no minimum Site Construction criteria.

5. FRESH CULL POTATO USAGE AS A FARM ANIMAL FEED BMP: This BMP provides acceptable procedures for farmers to use when fresh cull potatoes are part of their animal feed program.

(NOTE: Free range feeding of fresh cull potatoes is considered a cull spreading practice and must be conducted in accordance with the Cull Potato Winter Spreading BMP.)

Cold Weather Temporary Fresh Cull Potato Storage Criteria : Any temporary storage of fresh cull potatoes, between the dates of October 1 and the following March 1, must be in accordance with the Cold weather Temporary Cull Potato Storage BMP.

Warm Weather Temporary Fresh Cull Potato Storage Criteria : Any temporary storage of fresh cull potatoes, between the dates of March 1 and October 1 of the same year, must be in accordance with the Warm Weather Temporary Cull Potato Storage BMP.

Fresh Cull Potato Farm Animal Feed Quantity Criteria: Animals should be fed, on a daily basis, only the volume of culls which can reasonably be expected to be consumed as animal feed. As a general rule, reasonable maximum daily feed volumes are considered to be 100 lbs. of potatoes per 1000 lbs. of animal weight, for animals being fed culls as their primary feed source.

Fresh Cull Potato Farm Animal Feed Area Criteria: In order to prevent cull potatoes from being pushed into the soil, where they can then sprout and grow, posing a potential threat for disease spread, a prepared feed area is necessary. A prepared feed area can be achieved by a number of methods including, but not limited to a feed bunk or a concrete, paved or gravel pad.

6. CULL POTATO COMPOSTING BMP: This BMP provides acceptable procedures for utilizing cull potatoes for composting purposes.

Cold Weather Temporary Cull Potato Storage Criteria (prior to being composted): Any temporary storage of cull potatoes, between the dates of October 1 and the following March 1, must be in accordance with the Cold Weather Temporary Cull Potato Storage BMP.

Warm Weather Temporary Cull Potato Storage Criteria (prior to being composted): Any temporary storage of cull potatoes, between the dates of March 1 and October 1 of the same year, must be in accordance with the Warm Weather Temporary Cull Potato Storage BMP.

Cull Potato Composting Site, Setback and Slope Criteria: Follow the Maine Department of Environmental Protection, Rules for composting of Type I Residuals found in Rules for Land Application of Sludges and Residuals.

Cull Potato Composting Mix and Procedure Criteria: Use the process and mix recipe outlined in "Composting Cull Potatoes", University of Maine Cooperative Extension Bulletin #2415, 1997.

7. CULL POTATO ENSILING BMP: This BMP provides acceptable procedures for utilizing cull potatoes as part of an ensiling mix, for animal feed.

Cold Weather Temporary Cull Potato Storage Criteria (prior to being ensiled): Any temporary storage of cull potatoes, between the dates of October 1 and the following March 1, must be in accordance with the Cold Weather Temporary Cull Potato Storage BMP.

Warm Weather Temporary Cull Potato Storage Criteria (prior to being ensiled): Any temporary storage of cull potatoes, between the dates of March 1 and October 1 of the same year, must be in accordance with the Warm Weather Temporary Cull Potato Storage BMP.

Cull Potato Ensiling Site Criteria:

a. Cull Potato Ensiling Operations that are not self-contained (where leachate will be generated and discharged to the soil) must be sited upon well-drained, deep (40 inches or more to the seasonal water table and bedrock), non-sandy soils. These criteria can be met by the natural soil conditions or by modifying the site such as lowering the water table or adding fill.

b. Cull Potato Ensiling Operations that are self-contained (where leachate will be generated but will not be discharged to the soil) have no minimum soil conditions for siting.

Cull Potato Ensiling Site Setback Criteria: Cull potato ensiling sites must be set back a minimum of 100 feet from neighboring dwellings, property lines, wells, springs, water bodies, streams, gullies, swales, ravines and down slope diversions (those not associated with construction of the ensiling site).

Cull Potato Ensiling Site Slope Criteria: Cull potato ensiling sites shall be constructed on finished slopes that do not exceed 6 percent.

Cull Potato Ensiling Site Covering Criteria: All cull potatoes that are in the process of being ensiled must immediately be covered in a manner so as to prevent potato sprouting and the potential for spreading of disease, as well as to facilitate the ensiling process. Acceptable covering methods include, but are not limited to; a minimum of 6 inches of sawdust, 12 inches of soil, or 6 mill black plastic polyethylene, all of which must completely cover the potatoes being ensiled and must be secured and remain in place.

Cull Potato Ensiling Mix and Procedure Criteria: In order to create ensilage to be used as an animal feed, a bulking agent must be mixed with the cull potatoes. Refer to the University of Maine Cooperative Extension, fact sheet "Feeding Potatoes to Livestock" for bulking agents.

Cull Potato Ensiling Site Construction Criteria:

a. Cull Potato Ensiling sites that are not self-contained shall be constructed in accordance with the Site Construction Criteria of the Warm Weather Temporary Cull Potato Storage BMP.

b. Cull Potato Ensiling Sites that are self-contained (non discharge) have no minimum site construction criteria.

8. CULL POTATO TRANSPORT BMP: This BMP provides acceptable procedures for the transport of cull potatoes.

Cull Potato Transport Covering Criteria: Cull Potatoes which are transported by truck from one site to another shall be covered by a tarp, plastic sheet or similar method so that cull potatoes will not inadvertently fall off and become a potential spore source and so that the spread of spores from the cull potatoes will not occur while they are in transport.

Cull Potato Leachate Control Criteria While in Transport: If cull potatoes are to be transported while breakdown is or has occurred, provisions shall be made to prevent escape of the leachate while the culls are in transport. Acceptable measures include, but are not limited to, using a secure trucking body, a watertight container, or mixing the culls with soil or a bulking agent.

VARIANCES:

Due to site and/or soil conditions, a potato farmer may find that he/she can not comply with certain provisions of one of these BMP's and that it is not practical or possible to use any of the other BMP's to dispose of cull potatoes. In such instances, the Commissioner of the Department of Agriculture, Food and Rural Resources may approve a variance to these BMP's, provided that no reasonable alternative exists and that proper engineering techniques are utilized to offset reduced setbacks and/or soil limitations. All variances to these BMP's must be submitted in writing to the Commissioner for his/her approval along with provisions for overcoming limitations. Variances will be reviewed and acted upon on a site-specific basis. Activities authorized by variance must comply with all of the conditions of the variance.

FOR QUESTIONS REGARDING THESE CULL POTATO DISPOSAL BEST MANAGEMENT PRACTICES, CONTACT THE MAINE DEPARTMENT OF AGRICULTURE, FOOD AND RURAL RESOURCES AT:

**Statehouse Station # 28
Augusta, Maine 04333
Phone: (207) 287-1132**

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Developed by The Cull Potato Disposal BMP Committee – April 1, 1996
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