CHECK-LIST FOR IN PREPARATION FOR THE HEAT TREATMENT

1. Remove the entire product from the area to be heat treated for effective penetration of heat into storage structures like bins and silos and conveying equipments. This also ensures that product quality or the end-use characteristics of product are not negatively affected. For example, baking properties of flour may alter if treated with heat. Remove perishables. Empty in-house by-product bins. Wherever possible, equipment should be opened to allow for maximum heat penetration. For example: Open covers and slide gates on empty storage bins.
2. Ensure removal of:
    a. flammable material like aerosol cans and pressurized or compressed cylinders
    b. packaging material
    c. active or sensitive ingredients likely to be affected by heat
    d. fire extinguishers
3. The facility sprinkler system must not be overlooked during preparation for heat treatment. Check sprinkler system and head sensitivity for > 200 degrees F. If not, replace each. High temperature sprinkler heads should be used in all heated areas (212/260° F). Also, be prepared for an activated head: know shut-off valve locations and operations and prepare a salvage plan to limit damage to equipment, ingredients, and packaging material.
4. Close all doors, windows, and vents. This sealing does not have to be as airtight as for fumigation, but it should restrict the flow of warm air out of or cold air into the structure. Clear the floor as much as possible.
5. Heating, ventilating, and air-conditioning (HVAC) systems and dust collectors should be shut off, and tarps or plastic like polyethylene sheets can be used to seal off areas not being heated.
6. Catch pans should be in place over product zones because the oil in gearboxes will expand and the lubricant could be forced out of seals.
7. Conveyor belts need to be loosened to prevent stretching.
8. Run bins, silos, and conveying equipment empty and open up the processing equipment and machinery (like dust collectors, feeders, bucket elevators, screw conveyers, hammer mills etc.) and elevator boots for maximum heat penetration.
9. Electrical equipment, such as computers and controllers, must be powered down or removed. (Contact the manufacturer for advice on this.) Empty all the trash cans or containers and the sweepings as the facility is prepared for heat treatment.
10. As a part of integrated pest management, it may be necessary to undertake residual application of insecticide on the periphery or perimeter of the facility. A Tempo 20 WP or Demand CS products are options to consider for excellent <u>overall</u> residual insecticides for heat-ups and to preclude cross migration of insects to non-heated areas.
11. Notify contractors or other persons who may be using the facility so their equipment, materials and supplies can be removed.
12. Once the heat treatment is completed, the following steps should be performed prior to plant start-up: ensure window and door screens are in place for cool down, remove sealing material, close equipment, tighten conveyors, and look for lubricant leakage and top up gearboxes as needed.
13. Determine numerous locations for insect test cages. Make notes on plot plan. Use flour beetle or target insect stages for mortality evaluation. Order/make sufficient number of cages.
14. To-Do list: Develop guidelines and a to-do list before, during, and after the heat-up job.
15. Remove pop/drink machines, candy bars, pop-cans (any pressurized containers), candles, plastic folders, antique/modern/souvenir items that might be susceptible to high temperatures.