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## **Managing Plastic on Your Silage Piles and Bunkers**

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The primary purpose of covering silage with plastic and tires is to prevent air from interacting with the silage mass. Air allows for the growth of detrimental microbes that initiate a process leading to the destructing of nutrients and potential for increased loads of various toxins. Although bunker and pile silos are covered with “plastic and tires”, often times their management is less than desirable. Several scenarios are common. First, inadequate amounts of tires are used and/or the amount of weight provided by the tires (because they are sidewalls only) is insufficient to keep air from penetrating under the plastic. Billowing plastic or plastic that “ripples” is a good sign of this. Next, plastic is often torn from natural causes, equipment or animals and not repaired. Another common problem is that plastic is often cut in advance, too far back from the leading edge of the feeding face. This exposes the surface of the silage to air for too many days before feeding. Lastly, sidewall plastic has been used to help prevent water seepage into the silage mass but often times the silage is damaged by pack tractors or there is potential that the plastic is damaged with small holes as it lies on the wall during filling (plastic can be scraped on the sharp edges of a concrete wall as the plastic moves during filling).

To use the plastic and tires effectively we suggest the following. First, silos should be sealed with plastic and good weights as soon as possible after filling. This eliminates air and allows fermentation to proceed. Use more weights at the edges and at any seams. For example, use of whole tires, gravel bags, lime, or dirt around the perimeter of piles works well. Gravel bags have worked well at the walls (Figure 1). Overlap the plastic by about 4 to 5 ft at any major seam. Some people have actually glued or taped these seams together as they are lying the tarp down to keep them in place during sealing. If you are using plastic on the side walls, protect the draped plastic from being damaged by the sharp edges of the concrete wall. Placing thin strips of old carpet or cutting a ribbed plastic drain pipe down the center and fitting it on top of the wall (Figure 2) are some practices that have been used. During feedout, try to minimize the time that the top layer of silage is exposed to air (especially in hot weather) by cutting back only enough plastic to expose 1 to 2 days worth of feeding. This needs to be balanced with safety. Silage on the top of bunkers and piles is less tightly packed and prone to “cave ins” so use common sense and caution when deciding how much plastic to cut. It is also extremely important that the plastic at the leading edge of the feeding face be securely weighted down. Think of this edge as another “seam”. Use of heavier tires, split tires stacked 3 or 4 high (Figure 3) or gravel bags at this edge (Figure 4) will prevent air from penetrating under the plastic. We have found gravel bags work well since they can be rolled

back prior to cutting the plastic. Start the heavier weights at this leading edge as soon as possible after opening the silo. Once a significant amount of air has been trapped under the plastic, placing heavier weights at that edge will trap some of that air under the plastic. Lastly, repair rips and holes in plastic as soon as possible. Assign someone to check for tears at least once to twice a week. The use of alcohol around the perimeter of the rip, to dry the plastic, and tape specifically for repairing bunker or bag plastic will work better than duct tape. Remember, the primary cause of hot, moldy silages and spoilage layers on the tops of silos is due to exposure to air. Thus, minimize this exposure by managing your plastic and weights effectively.

Figure 1. Gravel bags at the wall in a bunker silo.



Figure 2. Plastic drain pipe used to cover the top of the wall to prevent side wall plastic from being torn or punctured.



Figure 3. Split tires stacked at the feeding face to prevent air from penetrating under the plastic.



Figure 4. Gravel bags at the feeding face to prevent air from penetrating under the plastic.

