

FUMIGATION WITH DIFFERENT GAS PIPE SYSTEMS IN SILOS IN TIANJIN

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Grain stored in silos is becoming common in Tianjin. These silos require more advanced technology to seal. On the other hand we have to use different fumigant systems in different capacity silos. Specific facilities tested since 1983 are as follows:

1. Small size brick silo: The silo was equipped with a circular pipe at bottom to which six standing gas pipes were attached at equal distance from each other. The circular pipe extended out of the silo and phosphine gas was applied into the grain through this pipe.

2. Small size square brick silo: Four perforated gas pipes standing vertically were situated on the bottom of the silo connected by 2 diagonal pipes. Each diagonal pipe had the two vertical pipes which were equal distance from both the center and vertical angles. We placed tablets of phosphine from top of the vertical pipes. The phosphine gas released was distributed into grain through the holes in the pipe wall.

3. Small size brick silo: We fixed 4 gas pipes vertically inside the silo. Each pipe was located at middle point of radius. Phosphine gas was added or phosphine tablets were placed in the top of the perforated pipes.

4. Large reinforced concrete silo: A circular pipe was placed at bottom along inside wall of silo. The circular pipe was linked with 6 pipes which were fixed along conical lower bottom of the silo. Also the circular pipe was linked with pipes along inside wall of silo and upwards to top. Those pipes are used for gas application so they are thin. A fan was placed at lower end of gas pipes and connected with fumigant dispenser to form a circular system for fumigation. Methyl bromide was used as fumigant.

5. Middle size brick silo: A circular pipe was fixed along the outside of the conical bottom of the silo. Six air distributors were placed on the circular pipe and each distributor was equipped with radiating pipes arranged in the way described for the large reinforced concrete silo. Methyl bromide was used as fumigant.

All 5 pipe systems for fumigation produced good results.

