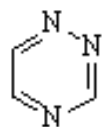


## Agriculture

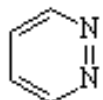
Modern agriculture requires the use of crop protection agents in order to overcome what would otherwise be a tremendous loss to pests of all sorts, from microorganisms to insects to weeds. Some of the important crop protection chemicals produced by the world's leading agricultural firms are derived from hydrazine. These agents allow increased production of pest-free foods to feed the world's population.

Hydrazine is a very reactive, difunctional molecule, and is capable of entering into reactions leading to several types of biologically active compounds.

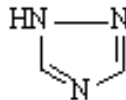
Some of the ring systems based on hydrazine and frequently found in agricultural agents include:



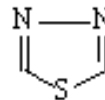
Triazine



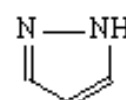
Pyridazine



Triazole



Thiadiazole



Pyrazole

DuPont, ICI, Bayer and others offer several plant fungicides based on the triazole ring. A leading herbicide for use on soybeans is Bayer's Sencor®. It is derived from the triazine ring system. Elanco's Spike® is based on the thiadiazole ring. Maleic hydrazide is used to prevent sucker growth on tobacco plants and has been suggested for application on ornamental grasses and potatoes. It is a derivative of the pyridazine ring.

These and many additional examples can be found in Farm Chemicals Handbook, published by Meister Publishing Company, Willoughby, OH 44094.