



The horn fly is a blood-feeding pest of pastured cattle. Horn flies take 20-30 blood meals per day causing cattle to experience blood loss, annoyance, decreased milk production, reduced weight gains, changes in grazing patterns, and bunching of animals. Female horn flies deposit eggs in fresh cow manure. Propose a solution to decrease or eliminate the threat of horn flies to cattle.



Harvesting lettuce is no easy job. Workers bend over all day long to cut the heads of lettuce out of the fields. The work is hard, and it is difficult to find workers to do the job. When there aren't enough workers, the lettuce rots in the fields. Propose a solution to the lettuce worker labor shortage.



Feral pigs (wild hogs) sniff out and destroy valuable crops like rice, sorghum, wheat, corn, and melons. The pigs tear up farm fields, contaminate water supplies, and are a disease risk to humans, livestock, and other wildlife. Propose a solution to decrease or eliminate the threat of wild hogs to farm fields.



Multiple years of low rainfall and high temperatures create drought conditions. During a drought, water use is restricted. This affects farmers who must irrigate their fields to get water to their crops. Propose a solution for growing crops during drought conditions.



Birds are naturally drawn to food growing in fields and orchards. When they descend on a farm, birds eat the crops, damage fields and orchards, and transmit diseases. Birds typically eat their body weight in food everyday. Propose a solution for keeping crops safe from birds.



While plants need water, too much water can have negative impacts on farm fields. One threat of too much rainfall is nutrient leaching. A lack of proper nutrients can stunt a plant's growth. Too much rainfall can also leave the soil waterlogged, leading to soil compaction, oxygen depletion, and plant rot. Rain can delay planting. Propose a solution for growing crops during seasons of heavy rainfall.



The costs of supplying and distributing food to urban areas continues to increase. It is difficult to satisfy the demand for fresh produce in highly populated areas, especially in the poorer sectors of large cities. Food insecurity is the state of being without reliable access to affordable, nutritious food. Propose a solution to food insecurity in urban areas.



Weeds are a challenge for farmers. Weeds reduce crop yield by competing for water, light, nutrients, and space. They interfere with harvesting, host crop diseases, and shelter unwanted insects. Herbicides can be sprayed on fields, but some weeds have become resistant or tolerant to herbicides. Propose a solution for controlling weeds that are resistant or tolerant to herbicides.