Genetic Engineering

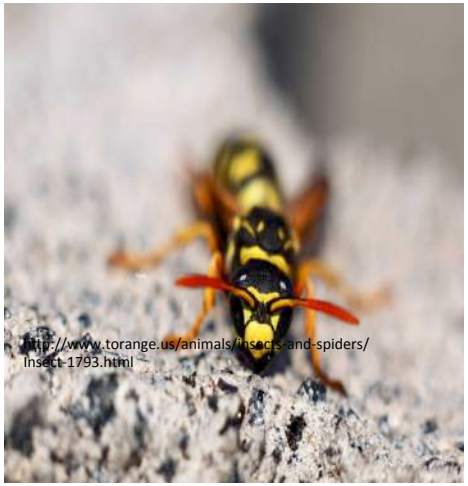
What is genetic engineering?

- Genetic information modified using biotechnology
- Often **recombinant DNA** is inserted into the genetic material of a cell or virus for introduction into a host.
- Genes can also be deleted or “knocked out” from an organism.
- Organisms that have been grown with these types of modifications are known as **Genetically Modified Organisms** (GMOs).

GMOs in Medicine

GMOs in Agriculture

- Increase crop resistance to insects.
- Increase crop resistance to herbicides
- Delay ripening of produce
- Delay freezing of produce
- Increase nitrogen available to plants
- Add nutrients to crops



GMOs in Farm Animals

- Increase milk production using Bovine Growth Hormone
- Vaccinate all animals against common illnesses
- Clone animals allowing for bigger and more uniform herds
- Create transgenic animals to select for a certain characteristics (this was always done by breeding, but now can be accomplished much more quickly)

Transgenic Animals

Controversies

- A risk to “wild” species and diversity
- Creating “super” plants and insects
- Engineering crops that cannot reproduce
- Creating ecological problems
- Causing the extinction of some insects.
- May be linked to an increase in allergies.
- May be linked to an increase in resistance to antibiotics.