

## CROP ROTATION

Crop rotations are essential in farm management. Extended crop rotations help to reduce disease inoculum loads in the soil, allow for herbicide rotation, manage overwintering insect populations, weeds, water usage and fertility management.

Growers with inadequate crop rotations will likely be confronted with one or more of the following yield-reducing problems:

- 1) Disease and disease-infested fields (e.g. increased sclerotinia)
- 2) Increased insect risk
- 3) Increased populations of certain weed species
- 4) Increased populations of volunteer sunflowers
- 5) Soil moisture depletion
- 6) Allelopathy or phytotoxicity of the sunflower residue to the sunflower crop

Rotations can be used to alter weed populations. Populations of certain weed species can be suppressed by competition from the crop raised or by the use of selective herbicides. Broadleaf weeds are easier to control in grassy crop types and vice versa. Thus, the alteration between crop types allows for control of weed types that could prove hard to control in the subsequent crop year. Weed populations can also become adapted to the seeding schedule of crops. For example, winter annuals may increase in population in a field where a fall crop has been grown consecutively. Changing to a spring seeded crop that allows for a spring non-selective herbicide application may kill the winter annual plant and disrupt the population.