

FIELD SELECTION

Soils

Sunflowers grow best on well drained, high water-holding capacity soils with a nearly neutral pH (pH 6.5-7.5). The optimum soil classifications for sunflowers are loam, silty loam and silty clay loam soils. Sunflower production performance on reduced agricultural capacity soils such as those affected by salinity, drought potential or wetness, is not ideal, but compares with of other commonly grown commercial crops.

Crop rotation

Having a proper crop rotational sequence is important with all crops, including sunflowers. Extended crop rotations help reduce disease inoculum loads in the soil, allow for herbicide rotation, manage overwintering insect populations, weeds, water usage and fertility management.

Growers who do not have adequate crop rotation, will likely be confronted with one or more of the following yield-reducing problems:

- ❶ Disease and disease-infested fields (e.g. increased sclerotinia)
- ❷ Increased insect risk
- ❸ Increased populations of certain weed species
- ❹ Increased populations of volunteer sunflowers
- ❺ Soil moisture depletion
- ❻ Allelopathy or phytotoxicity of the sunflower residue to the sunflower crop

FERTILIZER

General

Germinating sunflower seeds are very sensitive to seed-placed fertilizer. Starter applications should be placed away from the seed. When sunflowers are seeded with row equipment, all phosphate and potassium should be side banded 2" beside and 2" below the seed during planting. Some or all of the nitrogen can also be sidebanded. The total amount of fertilizer material sidebanded should not exceed 300 lb/ac.

Nitrogen applications can be made pre-plant, at seeding, post-seeding, side-dress or a combination of these methods. Application should be timed so nitrogen is available for rapid plant growth and development. Often, it is logistically advantageous to apply nitrogen in the fall. However, the longer the time period between application and plant use, the greater the possibility for N loss. Fall application is not recommended in sandy soils since the opportunity for leaching is much greater. A side-dress application of N when the sunflower plants are about 12 inches high is often preferable.