



Soil Fertility and Fertiliser Management for Irrigated Crops Training Course



Soil Fertility and Fertiliser Management for Irrigated Crops Training Course

Introduction:

Soil fertility and fertiliser management for irrigated crops is a 5-day training course for agronomists, farm managers and fertigation technicians, ending with a Crop Nutrition and Fertigation Plan costed per hectare. Irrigated farms lose yield and money when fertiliser is applied without soil or leaf evidence, salts build up in the root zone and calcareous soils lock up phosphorus. Nominees already advise on or run irrigated crop production, and teaching is by modelling build from soil reports, leaf analyses and price lists. CoreConcept Training Center delivers this soil fertility and fertiliser management course.

Course Objectives:

- Design soil and leaf sampling plans for irrigated fields and interpret laboratory results against critical levels and sufficiency ranges
- Diagnose salinity, sodicity and calcareous soil constraints and select leaching, gypsum and chelate measures
- Calculate crop nutrient budgets from target yield, nutrient removal and soil supply for nitrogen, phosphorus and potassium
- Compare fertiliser products by grade and cost per nutrient unit and work out cost per hectare for each crop
- Set fertigation injection rates and schedules, and screen irrigation water and stock tank mixes for hazards
- Prepare a Crop Nutrition and Fertigation Plan for a case farm that links tests, budgets, schedules and costs

Target Audience:

- Agronomists responsible for fertiliser recommendations on irrigated fields, orchards and greenhouses
 - Farm managers accountable for input budgets and crop yields on irrigated holdings
 - Fertigation and irrigation technicians who operate injectors, stock tanks and dosing schedules
 - Soil laboratory and extension staff who interpret soil, leaf and water analyses for growers
 - Input supply advisers who recommend fertiliser products and rates to commercial farms
-

Course Outline:

Day 1: Soil Fertility Foundations and Field Sampling

- Soil Sampling Grid Design by Depth and Rooting Zone
- Essential Plant Nutrients and Critical Deficiency Symptom Keys
- Soil Texture, Cation Exchange Capacity and Organic Matter Interpretation
- Law of the Minimum and Yield Response Curve Reading
- Farm Fertiliser Use Audit of Fields, Crops and Past Rates

Day 2: Soil and Leaf Testing, Salinity and Calcareous Soils

- Laboratory Soil Test Extraction Methods and Critical Level Tables
- Leaf Tissue Sampling Protocol and Sufficiency Range Comparison
- Soil EC, Sodium Adsorption Ratio and Exchangeable Sodium Readings
- Leaching Requirement Calculation and Gypsum Rate for Sodic Soils
- Calcareous Soil Phosphorus Fixation, Iron Chlorosis and Chelate Selection

Day 3: Fertiliser Products, Nutrient Budgets and Cost per Hectare

- Straight and Compound Fertiliser Grades With Nutrient Content Conversion
- Crop Nutrient Removal Tables and Target Yield Budgeting
- Nitrogen, Phosphorus and Potassium Rate Calculation From Soil Test Results
- Fertiliser Cost per Hectare and Cost per Nutrient Unit Comparison
- Split Application Timing Across Crop Growth Stages

Day 4: Fertigation Scheduling, Water Quality and Problem Cases

- Fertigation Injector Types and Proportional Dosing Rate Setting
- Three-Stage Fertigation Cycle With Water Flush Before and After
- Fertiliser Solubility, Compatibility and Precipitation Risk in Stock Tanks
- Irrigation Water Analysis for Bicarbonate, Chloride and Boron Hazards
- Emitter Clogging, Nutrient Leaching and Salt Accumulation Troubleshooting Cases

Day 5: Modelling Build for the Crop Nutrition and Fertigation Plan

- Case Farm Data Pack With Soil, Leaf and Water Reports
 - Case Field Nutrient Budget for a Date Palm Orchard
 - Case Salinity and Calcareous Soil Correction Schedule Build
 - Weekly Fertigation Schedule and Injection Table Construction
 - Crop Nutrition and Fertigation Plan Costing and Completion
-

Skills You Will Gain:

- Soil Sampling Design
- Leaf Analysis Interpretation
- Salinity and Sodidity Diagnosis
- Nutrient Budget Calculation
- Fertiliser Product Costing
- Fertigation Dosing Calculation
- Irrigation Water Quality Screening

Why Attend This Course:

- Deliver a Crop Nutrition and Fertigation Plan to the farm owner, operations manager and procurement lead as the basis for the next season's fertiliser order
- Decide whether a yield problem comes from nutrient shortage, salt build-up, high pH or poor application timing before buying more fertiliser
- Avoid wasted fertiliser, blocked emitters and salt damage caused by untested rates and incompatible tank mixes
- Coach field supervisors and irrigation crews on sampling, dosing tables and records that keep fertigation on target

Conclusion:

Back at work, the participant presents the Crop Nutrition and Fertigation Plan to the farm owner, operations manager and procurement lead, who use it to set fertiliser purchases, soil correction work and weekly dosing for each block. Field supervisors can adopt its sampling map and injection tables as routine controls. After the first crop cycle, the unit should compare leaf results, yield and cost per hectare with the plan's targets, then revise rates and schedules.

Frequently Asked Questions FAQ:

What should participants know before a soil fertility and fertiliser management course for irrigated crops?

Participants should already advise on or run irrigated crop production and be comfortable with basic arithmetic and unit conversion. Bringing recent soil, leaf or irrigation water reports from their own fields helps them apply the case work directly.

How does a soil fertility and fertiliser management course differ from a farm technology or organic farming course?

It concentrates on mineral fertiliser planning for irrigated fields: testing, salinity, nutrient budgets, fertigation and cost per hectare. Courses on farm technology or organic production cover sensors, digital tools or biological inputs instead, and treat fertiliser only in passing.

Why do saline and calcareous soils change fertiliser plans for irrigated crops?

Salts reduce water uptake and raise the risk of fertiliser burn, while high lime content ties up phosphorus, iron and zinc. Plans therefore add leaching, soil amendments, product choice and split timing to the standard nutrient budget.

What do participants take back from the soil fertility and fertiliser management course?

Participants take back a Crop Nutrition and Fertigation Plan costed per hectare, plus a sampling map template, a nutrient budget sheet and a weekly injection table that they can adapt to their own farm.