MANURE MANAGEMENT ISSUES HAVE EXISTED FOR A LONG TIME …

… BUT TECHNOLOGY HAS CHANGED
ENVIRONMENTAL ISSUES ARE MORE IMPORTANT THAN EVER

MANURE AND WATER DON'T MIX
THE PRACTICAL GOAL OF MANURE MANAGEMENT

KEY PART OF THE NUTRIENT MGT. PLAN

DISTRIBUTE MANURE EVENLY ON THE FARM
  • AVOID SOIL P BUILDUP

UTILIZE PLANT NUTRIENTS
  • N OR P BASED MANAGEMENT

AVOID APPLICATION IF LOSSES MAY OCCUR
  • STEEPLY SLOPING LAND
  • ADJACENT TO WATER
  • BALANCE NUTRIENT USE AND DISPOSAL NEED
THE CONSERVATION PLAN MUST COMES FIRST

- Determines tillage and rotation to meet “T”
- Conservation tillage leaves residue to protect water quality and soil productivity
- Many are outdated or not followed
- Which is more important: the conservation plan or the NMP
CONFLICT BETWEEN NUTRIENT AND CONSERVATION PLANS

NMP CREDITS ALLOCATE MANURE TO MORE FIELDS - MANY SLOPING DIRECTED TOWARD EXISTING CORN SLOPING LAND WITH HIGH RESIDUE MORE TILLAGE = MORE EROSION AND TOTAL P LOSS POSSIBLE PLANTING CONCERNS - MANURE CONTRIBUTES RESIDUE AND AFFECTS SOIL CONDITIONS
CAN A "HAPPY MEDIUM" BETWEEN MANURE AND RESIDUE MGT. EXIST
MANURE INCORPORATION TOOLS:
USDA-DFRC FIELD DAY, AUGUST, 2001

SWEEP INJECTOR

INCORPORATION WITH LIMITED RESIDUE BURIAL: WATCH YOUR STEP!!
A GREATER CHALLENGE FOR SEMI-SOLID, DAILY HAUL

- NO-TILL
- LIGHT DISKING
- STRIP-TILL

ALTERNATIVES TO FULL-WIDTH TILLAGE
MANURE AND TILLAGE MANAGEMENT STUDY - 2002

ARLINGTON, LANCASTER, MARSHFIELD, AND SPOONER

0, 15, AND 30 t/a SPRING-APPLIED, STRAW-BEDDED MANURE

MOLDBOARD, CHISEL, LIGHT DISK, STRIP-TILL, NO-TILL

N RATES (ARLINGTON ONLY)

EMERGENCE, STAND, RESIDUE, YIELD

SUPPORTED BY A MULTI-AGENCY LAND AND WATER EDUCATION GRANT
MAIN EFFECT OF TILLAGE ON THE SURFACE CROP RESIDUE, 2002

NOTE: MAIN EFFECT OF MANURE AT 30 t/a INCREASED RESIDUE 7-20 % DEPENDING ON LOCATION
EFFECT OF TILLAGE AND MANURE RATE ON
CORN EMERGENCE, ARLINGTON, WIS., 2002

TILLAGE EFFECT

MANURE EFFECT
EFFECT OF TILLAGE AND MANURE RATE ON CORN EMERGENCE, MARSHFIELD, WIS., 2002

TILLAGE EFFECT

MANURE EFFECT
Main effect of tillage on the final corn stand, 2002

Note: Manure rate main effect increased stand at LAN, decreased stand at MFD and SPN, with no effect at ARL.
MAIN EFFECT OF MANURE RATE ON CORN YIELD, 2002
MAIN EFFECT OF TILLAGE ON CORN YIELD, 2002
INTERACTION BETWEEN N RATE AND MANURE RATE AT ARLINGTON, WIS., 2002

![Bar chart showing yield (bu/a) vs N rate (lb N/a) with manure rate as a factor.]

- YIELD (bu/a)
- N RATE (lb N/a)
- 0
- 15
- 30
MANURE MANAGEMENT IN REDUCED TILLAGE SYSTEMS

- DO A GOOD JOB OF APPLICATION
  - APPLY MANURE EVENLY
  - CONTROL COMPACtion
  - AVOID SPREADING NEAR CHANNELS OR WATERWAYS

- TILLAGE METHODS THAT CONSERVE RESIDUE CAN WORK

- ADJUST PLANTER FOR SOIL CONDITIONS AND ADDED RESIDUE

- BENEFITS OF MANURE APPLICATION GO BEYOND NUTRIENT SUPPLY