Selecting a Strip-Tillage Tool for Your Farm

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Objectives

• dark soil surface

• fertilizer injection

• tillage (depth) – soil loosening
History

• anhydrous ammonia knife (mole)
• subsoiling
• shallow disk incorporation
• ridge tilling – machinery wheel spacing, soybean drilling
• rotary strip tillage
Draft/power requirements

- draft increases linearly with depth
- draft increases linearly with speed (knife)
- draft increases quadratically with speed (subsoil shank)
- 20 – 30 hp per knife common requirement
- where to place nutrients
Spacing on toolbar must match rows

Marker or guidance system
Knife

• parabolic shape

• tip-shape
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Subsoil

• shank shape (parabolic, bent-leg/Para-till)

• is compaction a problem or soil loosening needed?

• drier, more macropores in seed zone
Disc-covers (rear)

• control soil flow
• angle adjustment
Coulters or row-cleaners (front)

- large diameter coulter
- shallow single-disc injector or multi-coulter system
Corn-on-corn issues

- robustness

- frame strength

- down-pressure spring adjustment
Fertilizer attachments

- towed cart or dry boxes
- towed NH₃ tank
- hitch
- distribution system (augers, air)
- lighting and marking issues
Conclusion

• Selection:  
  how deep?  
  corn-on-corn residue?  
  other field operations (drilling, manure application)

• Adjustment features

• Fertilizer incorporation