SA Forestry Contractors Association

FOCUS 2013
Pietermaritzburg

MECHANISED LAND PREPARATION
[silviculture] IN SOUTH AFRICA

JAAP STEENKAMP
Land preparation SA

“If you keep on doing what you are doing you will keep on getting what you’ve got”
...a long status quo has changed....and it required fresh and innovative thinking.

Modernization / Mechanization

Designing the (moving) goalposts....any design will most probably change a number of times!
What has caused forestry operations to change? (drivers of change)

FROM

• Macro Economic pressure? (2008 to current)

• Labour? (safety, availability, productivity, cost, legislation, perceived decent work, forestry work environment)

• Technology? (availability, advantages, cost)

TO
Operational change

Critical: Harvesting/Silviculture interface (cost implication)

- Burning
- Mulching
- De-stumping
  (For access and facilitating pitting)

Pitting & Planting

- Pitting
- Gel / water application
- Fertilizer
- Planting

Weeding

- Mechanical
- Chemical
Pictorial recent history of Silviculture mechanization

Stump & Slash management

AHWI RT400

GEHL with EDGE mulching attachment
Pitting

Landini, coulter & angled ripper

MULTIPIT All Terrain (MPAT)
Pitting

Potter / Pitbull

Pitmeister

05-02-2013 06:42

05-03-2013 06:44
Pitting

JD ProPit (twin head)

MPAT on slope in brush

MULTIPIT ProPit (CLAAS)

Road legal with 450mm ground clearance
Semi-mechanised planting

Tractor / trailer (pneumatic and hydraulic) semi-mechanized planting
Six rows at a time. Self levelling support boom.
MULTIPLANT Carrier.
Pit, plant, gel and fertilize
Two heads, variable spacing, fuel efficient, excellent manoeuvrability, slopes to 55%, high stability, ergonomic design, one man operation.
Weeding

Also:
Boom-less sprayers
Heavy duty slasher / brush cutters
Protection (fire fighting)
Steam technology??
Modernization Mix

- Mechanical
- Electronics
- Hydraulics

PEOPLE
R & D

Tung-chip hard facing

Pitting head with slash arms

Replaceable tip tine

Coney-cutter

Stump Drill
Silviculture (and protection) modernization is really exciting!
COSTS

- A change from labour to capital
- A significant increase in Fixed Costs (FC) due to depreciation and interest (or fixed)
- Requirements determine costs: the required level of supervision, enclosed a/c cab or not, quality specs.
- Equipment efficiency: match between carrier and attachment, correct application.
- Performance output versus energy input? (Green)
- Productivity and utilization: the dilution of fixed cost.
- VOLUME SENSITIVITY - availability of work / standing costs
- Apples and apples cost: Direct costs only (VC)
- Level of OH costs (FC)
Conclusion

- Modernization / mechanization is happening!
- Lots of trial and error to find BOP
- Output sensitive operations (High FC=leverage)
- Requires intensified grower management (pre-planning – lack of capacity: > field; < paper!)
- Training at the Grower / Contractor interface for a mutual understanding of new environment.
- Significant equipment R&D required: an exciting challenge!

Thank you!!