DAFWA and animal production in the future

Andrew Thompson

Innovations in Animal Production Forum
UWA, 2nd August 2007
Outline

• Strategic planning & drivers of change
  – Improved pasture utilisation & profit/ha
  – Low impact on environment and climate change
  – Easy-care labour efficient production systems
  – Improved animal welfare
  – Market differentiation & high value products

• Capacity & role of DAFWA

• Opportunities & future directions
Sheep Industries group

Profitable Sheep Production – *The package* (Market Research, Adoption and Evaluation) (Curnow)

- **Sheep information systems** (Curtis)
- **Whole-farm economics** (Kingwell)
- **Pastures** (Revell)
- **Feedbase & Sheep management** (Oldham – Thompson - Jacob - Sanford)
- **Genetics** (Greeff)
- **Sheep Health** (Besier)
- **Wool value chain** (Stanton)
Increased focus on adoption by ‘early majority’

- **Market research**
  - Define problems/opportunities
  - Identify who has problems/missing opportunities
  - Develop compelling solutions
  - Identify and develop delivery channels

- **Adoption programs**
  - ‘The Sheep’s Back’
  - ‘Lifetime Ewe Management’ → profitable sheep production
Stocking rate and management

Profit ($/farm/yr)

10 12.5 15 17.5

200,000
150,000
100,000

Stocking rate (DSE/ha)

Lifetimewool guidelines

Traditional management

Kojonup analysis for July-August lambing

J. Young et al. (unpublished)
Improving profit and welfare

- FOO targets: 800, 1500, 2000+
- Higher production but 20% more supplement
- Optimum
- Individual ewe & lamb mortality risk!
- Pregnancy, lactation, pre-joining
- Ewe Condition Score
- Day of Pregnancy
- Improving profit and welfare
Feed-base opportunities

• Development of more robust forage systems
  – New plants
March
Feed-base opportunities

• Development of more robust forage systems
  – **New** plants
  – **Combinations of complementary plants** (agronomic, functional and nutritional) – farm & catchment modelling
Shrubs in the feedbase

71 species of native forage shrubs under investigation
40,000 shrubs
Feed-base opportunities

- Development of more robust forage systems
  - New plants
  - Combinations of annual pastures, herbaceous perennials and forage shrubs
  - Looking for complementarity (agronomic, functional and nutritional) – farm & catchment modelling
  - Spatial allocation and time of use
Spatially aggregated systems

Grass monoculture

Clover monoculture

Mixed grass clover (85:15)

Free choice G:C (50:50 area)
## Ewe and lamb performance

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<tbody>
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*K. Venning et al. (unpublished)*
## More from less

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Spatially aggregated forage systems

At the correct scale could allow us to:

- Adopt species specific management to grow more dry matter
- Grow more of preferred feed and more stable composition matched to animal needs
- Increase feed conversion and production per animal and per ha
- Utilise pastures that have generally failed to perform in mixtures
- Increase use of fodder shrubs / self medication / healthy foods
Genetic opportunities

• Improved genetics
  – More efficient converters to meat and/or wool
  – Reduced methane / kg product
  – More resistant to worms – less drenching
  – More resistant to flies - no mulesing, jetting, crutching
Genetic trend of WEC

Genetic trend of Rylington Merino

Average EBV of WEC

Year of birth

Control
Selection
Breeding for resistance to breech strike
Genetic opportunities

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  – More efficient converters to meat and/or wool
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  – Increased fitness/robustness and mothering ability
Maternal fatness, nutrition & lamb birthweight

Mark Ferguson (unpublished)
Summary

- Explore new ways to increase adoption of existing technologies
- Consider the use of plant mixtures that collectively can deliver on a wider range of objectives
- Develop optimum management systems for different sheep genotypes in different environments
- Develop more efficient lamb finishing systems
- Develop labour sparing technologies & management systems
- Complexity vs. pay-off and likelihood of adoption