Fertiliser Action Plan Update

FIFA Conference August 2010
Coastal waterways are a key NRM issue for the Western Australian Government

- Water Quality Improvement Plans have been developed for the Swan-Canning, Peel-Harvey and Vasse-Geographe
- All identify phosphorus enrichment as a key issue
- All identify improved fertiliser management as a key strategy
- The Fertiliser Action Plan (FAP) is the policy framework for improving fertiliser management and promoting soil amendment.

Some History……..

- 2006: Minister announces soluble P ban on Coastal Plain.
- 2008: Fertcare adopted as “exceptions” mechanism for agriculture.
- 2009: Fertcare becomes primary mechanism for better agricultural fertiliser management. P content of home garden fertilisers will be regulated.
So what does that mean for agriculture?

- FAP emphasises better management, not product change.
- FAP uses existing industry processes, not new bureaucracy.
- State Environmental policy will provide additional guidance for P recommendations in the FAP policy area.
- Auditors will assess compliance with guidelines as a component of the Environmental Module.
- Future regulation may make supply of P in the policy area subject to the recommendation of an Accredited Advisor.

Where does the FAP apply?

1. West coast – Moore R to Busselton
2. Scott Coastal Plain
What’s happening now?

- Working groups (Grazing, Horticulture, Urban Users, Domestic and Soil Amendments) are developing guidelines for Fertcare P recommendations on the Coastal Plain.
- FAP fertiliser guidelines will form part of the FERTCARE Environmental Module or equivalent industry processes.
- LWSP development and evaluations / demonstrations are continuing.
- DEC is drafting a policy framework to support FAP implementation based on Fertcare. The SEP or EPP will oblige FERTCARE accredited advisers to comply with the guidelines.
- Users may ultimately need a FERTCARE accredited adviser’s recommendation to gain access to P for use on the Coastal Plain.

Developing Grazing Guidelines

- Soil test standards and protocols
- Managing non-P constraints
- PBI x Critical P levels x production systems
- Presenting recommendations to end users
Critical P values for Grazing Systems
(Version 1.0 Dec 2009)

<table>
<thead>
<tr>
<th>PBI range (no units)</th>
<th>Critical Colwell soil test P (mg kg⁻¹)</th>
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<tbody>
<tr>
<td>&lt;5</td>
<td>10</td>
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<tr>
<td>5-10</td>
<td>15</td>
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<td>10-15</td>
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<td>36-70</td>
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<td>71-140</td>
<td>34</td>
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<tr>
<td>141-280</td>
<td>40</td>
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<tr>
<td>281-840</td>
<td>55</td>
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<td>Greater than 840</td>
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Matching soil P to < 95% production targets

Currently in the too hard basket – left to Advisor discretion

What’s the right target for different systems?

95% potential

Colwell P vs PBI <140 (PRI <64)
Colwell P vs PBI >140 (PRI >64)
## Horticulture guidelines under development

<table>
<thead>
<tr>
<th>Crop</th>
<th>Decision tool</th>
<th>Framework</th>
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<tbody>
<tr>
<td>Pasture</td>
<td>Soil test</td>
<td>Fertcare</td>
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<td>Leaf (or soil) test</td>
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<td>Strawberries</td>
<td>Fertigation recipe</td>
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<td>Vegetables</td>
<td>Soil test</td>
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<tr>
<td>Native Wildflowers</td>
<td>Soil test</td>
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### Grazing industry extension for FAP

- Industry / Government partnership
- Providing soil testing and interpretative maps
- Information and interpretation workshops
- New information materials and tools
Visual data presentation - Dairy

- pH
  - Paddocks
  - Centre pivot
  - pH above 5.5
  - pH between 5.1 and 5.5
  - pH between 4.5 and 5.0

- Phosphorus
  - Paddocks
  - Centre pivot
  - No P fertilizer needed
  - Only maintenance P fertilizer needed
  - Additional P fertilizer needed

- Land use
  - Dryland
  - Early grazing
  - Irrigated

Visual data presentation - Beef

- Low P
- pH<4.5
- Soil P status: Insufficient, Critical, Maximum Production
- pH status for Nitrogen Availability: Low, Moderate, High

*For soil P status, P is expressed as a proportion of the maximum production potential.
Where are the limitations?

- 836 Soil samples analysed summer 09/10
  - 60% of samples above critical P values
  - 60% of samples have pH below 5

What’s the future role for LWSP? (or soil amendments)

- Critical soil P levels for 95% Production Response

**P needed annually?**

David Weaver et al.
Evaluating LWSP Fertilisers

- 4 LWSP products
- 8 Sites
- 4 P responsive
- 1 Source difference

Future role for soil amendments?

Bauxite Residue (Red Mud)
- Increases P retention and reduces runoff
- Raises pH
- Increases soil water retention
- Reduces water repellence

- Public discourse often ill informed
- Alternative amendments are being developed and evaluated
Summary

- WA Government is committed to measures that reduce P inflows to coastal waterways.
- FAP has evolved since the first announcement in 2006.
- FERTCARE is a key plank of the government / industry plan to improve the health of coastal waterways.
- Working Groups are developing guidelines for P recommendations on the Coastal Plain that will be incorporated in the FERTCARE Environmental module.
- Compliance with those guidelines will be required by SEP and assessed by FERTCARE auditors.
- FERTCARE Advisor recommendation may be a prerequisite for P supply in policy area after 2014.
FAP Mk 3 (2008) – Exceptions through FERTCARE

Soil test data → Adequate Soil P → Adviser

- Low PRI → FAP Compliant P
  - <40% of P soluble
  - Soluble P < 3.6% w/w

High Risk to waterways → "Exception" to use HWSP

Low Soil P → High PRI → Low Risk

Use Fertcare principles and FAP/SEP rules.

FAP Mk 4 (2009) – FERTCARE driven

Soil test data → Adequate Soil P → Adviser

- Low PRI → STOP

High Risk to waterways

Low Soil P → High PRI → Low Risk

Use Fertcare principles and FAP/SEP rules.

Best product for purpose at correct rate

LWSP development continues
How do we manage other constraints?

Weaver and Summers (2006)

- **P saturation**
  - Low
  - Med
  - High

- **pH (CaCl)**
  - >4.5
  - 4.3-4.5
  - <4.3

- **Potassium (ppm)**
  - 100-350
  - 80-100
  - <80

It’s not new land anymore……..

Weaver and Summers (2006)

- Peel Harvey median Colwell P 1982-2006 ~29ppm (n=15,373)
- Many Coastal Plain sites now unresponsive to P
Three broad categories

- **26.5%** Low sorbing with requirement for P
- **13.8%** High sorbing with requirement for P
- **59.6%** High or Low sorbing with no requirement for P

A decade of soil tests from Vasse

- **50 kg/ha** Applied
- BicP up at 12 kg/ha/yr
- **No P Applied**
- BicP down at 6 kg/ha/yr

Bolland and Russell (2010)