Twin sowing and Summer sowing: New techniques to introduce annual pasture legumes into mixed farming systems

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Twin sowing

First year

Wheat

95% hard

Hard French serradella pods

Sowing

Fertilizer

Second year

60% soft
Established pasture

Hardseed breakdown of the pasture seed
Summer sowing

Bladder clover  Hard seed French serradella

Wheat stubbles

Sowing
Hard seed or pods
(non germinable seed)

95% hard

Hardseededness breakdown

Jan - Feb
Mar
Apr
May

Temperatures on soil surface
Are around $65^\circ C$ max - 15Cmin

60% soft
Pasture regeneration
Summer sowing
French serradella normal sown 14 of July

French serradella summer sown 14 of July
267mm (Jan-Dec)

French serradella
Normal sowing
23 of September
3.6 t/ha DM

French serradella summer sowing
23 of September
9.3 t/ha DM
Mingenew WA

Unsown plot

French serradella summer sown
<table>
<thead>
<tr>
<th>Variety</th>
<th>Sowing Type</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mingenew 2011</td>
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<tr>
<td>French serradella Margurita</td>
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<td>3.7 t/ha</td>
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<tr>
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<td>Yield (t/ha)</td>
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<td>2.9</td>
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</tbody>
</table>
2012: 24 trials across the wheat belt

French serradella Margurita: Plant/m² 250-800
Bladder clover Bartolo: Plant/m² 250-800
Golden rules

• Sowing Time

• Choose the appropriate species/cv

• Paddock selection
Time of sowing

- February
- March
- April
- May
## Which species/cv?

<table>
<thead>
<tr>
<th>Species</th>
<th>Cultivar</th>
<th>Source</th>
<th>Seedlings</th>
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<tbody>
<tr>
<td>French·serradella</td>
<td>Margurita</td>
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</table>
Suitable cultivars to summer sowing available in the market:

- Hard seed French serradella: Margurita & Erica
- Yellow serradella: Avila
- Bladder clover: Bartolo
- Arrow leaf: Cefalu (It needs more research)
Easy to bulk up

French serradella nursery paddock
Conventional cereal harvesters
Cheap seed production

Hard seed French serradella pods and bladder clover UNSCARIFIED seed

Seed Yield of 1 ha (seed/pod) = 500 – 1000Kg

@ sowing rate of 25kg/ha

20 to 40 hectares (seed cost = $5-10/ha)
Paddock selection

- Reasonable clean paddock (after 1-2 crops, hay)
- Not SU (Logran, Glean) or Lontrel used in the year before
Triasulfuron application (18 days growth)

DAFWA Crop Pasture Group (Yates, Nutt & Loi)
70g/ha Spinnaker pre-emergence
Gibson summer sowing
Cascade- end of April 2013
Cascade- 30th of June 2013
Benefits

• Outside cropping operations

• Reliable establishment

• Cheap

• Potential to fill the autumn feeding gap
Cv Bartolo (*bladder clover*)

Thanks