Quick Guide for Soybean Production in the Texas Panhandle and South Plains

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Soybean Variety Classification

✓ **Indeterminate** - Plants bloom and produce pods while still growing vegetative plant parts. Group 00 - IV soybeans are mostly this type.

✓ **Determinate** - Plants finish vegetative growth, then go to reproductive stage. Group V - VIII soybeans are mostly this type.

✓ More than ½ of soybeans in Texas are Group IV (primarily indeterminate).

Planting

✓ Planting date ranges from May 15 to July 1, depending on the variety.

✓ Rate 120,000-130,000 seed/acre (approximately 56 lbs of seed per acre depending on seed size).

✓ If planting with a drill, increase seeding rate to 150,000-190,000 seed/acre.

✓ Seeding rate more critical on indeterminate non-branching varieties.

✓ Soil temp 60° is optimum. Germination will occur at 52-53° - but slow.

✓ Early planting seldom an advantage for determinate varieties.

✓ Yield advantage for early planting of indeterminate varieties.

✓ If a determinate variety is planted too late pods may develop close to the ground, making harvest difficult.

Variety Selection

✓ Will depend on planting date. A group IV bean generally works the best. However, group III or V beans can be considered. Lots of variability in Group IV class (as much as 25 days in maturity).

✓ Plant soybeans with different maturity lengths when planting large acreage. This will help with harvest.

✓ Consider water availability (shorter maturing varieties will require less water).

✓ Make sure variety is adapted to this area.

Row Spacing

✓ Narrow rows promote quicker canopy formation.

✓ Branching type bean (bushy) will aid in canopy formation on wide rows.

✓ Multiple rows/bed is option.
**Inoculum**

- Inoculum - Live bacteria; must take care of it. Hot, dry conditions and sunlight will kill bacteria.
- Takes 3-4 weeks for soybean plant to begin fixing N. In some instances, soybeans may benefit from 15-20 lbs N applied at planting.
- Must coat seed with inoculum. A sticker such as Coke works well while also serving as a sugar source for bacteria.
- Avoid Captan use because it injures bacteria. Try to avoid long-term exposure to other fungicides.
- Granular inoculum costs more ($5.00/A) but works well when put in seed furrow with seed.
- Slurry mixes cost $1.00 for 1 X rate.
- Consider 2X inoculum rate if land has not been planted to soybeans for a number of years.
- Commercial liquid inoculums are available that contains stickers. Only use 1X rate of this material to avoid over wetting the seed.

**Land Management**

- Must avoid plow plan, soybeans will utilize \( H_2O \) from at least 5 ft.

**Fertility Needs for 40 Bu. Bean/Acre**

<table>
<thead>
<tr>
<th>Element</th>
<th>Stubble</th>
<th>Seed</th>
<th>Total</th>
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<tbody>
<tr>
<td>N</td>
<td>80</td>
<td>150</td>
<td>230</td>
</tr>
<tr>
<td>( P_2O_5 )</td>
<td>20</td>
<td>35</td>
<td>55</td>
</tr>
<tr>
<td>( K_2O )</td>
<td>50</td>
<td>55</td>
<td>105</td>
</tr>
<tr>
<td>Mg</td>
<td>15</td>
<td>7</td>
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</tr>
<tr>
<td>S</td>
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</tr>
<tr>
<td>Zn</td>
<td>0.15</td>
<td>0.04</td>
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</tr>
</tbody>
</table>

**Irrigation**

- Yield not limited with 20-24 inches of water and a full profile at planting.
- Water requirement will be somewhat dependent on maturity length.
- Greatest irrigation efficiency was 0.7 of PET at Halfway.
- At Halfway, no difference between watering interval of 3.5 days to 14 days as long as adequate amount of water was applied.

**Critical Growth Stages**

- Vary with plant growth habit - (indeterminate vs determinant)
- Bloom
- Seed fill
- It takes approximately 35 days to go from bloom to mature seed. Must keep wet during this period.
- Disease pressure is minimal on new soybean land.

**Harvest**

- Harvest at 13% moisture. Soybeans split and shatter as moisture drops below 10%.
- Reduce cylinder speeds to 450 to 500 rpm, slightly higher on high moisture soybeans.
- Reduce field speeds to 3 mph.
- Evaluate harvest loss when setting combine. Four beans per square foot is equal to one bushel/acre.

- Iron chlorosis may be problem in calcareous soils or high pH’s. Best to choose a variety that can tolerate soils low in iron.
  - If a foliar iron application is made, good coverage is essential. Usually one application is sufficient for beans to overcome iron deficiency.