Integrating Variable Rates of Kocide 3000 in a Blight Management Program

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Making a Difference for California

Background

- Streptomycin resistance widespread in Calif.
- All copper formulations can cause russetting
- Kocide 3000 has reduced MCE (30%)
- Many growers now use Kocide 3000 (0.5 lb./A) + Manzate Pro Stick (3 lbs./A)
- Copper resistance potential

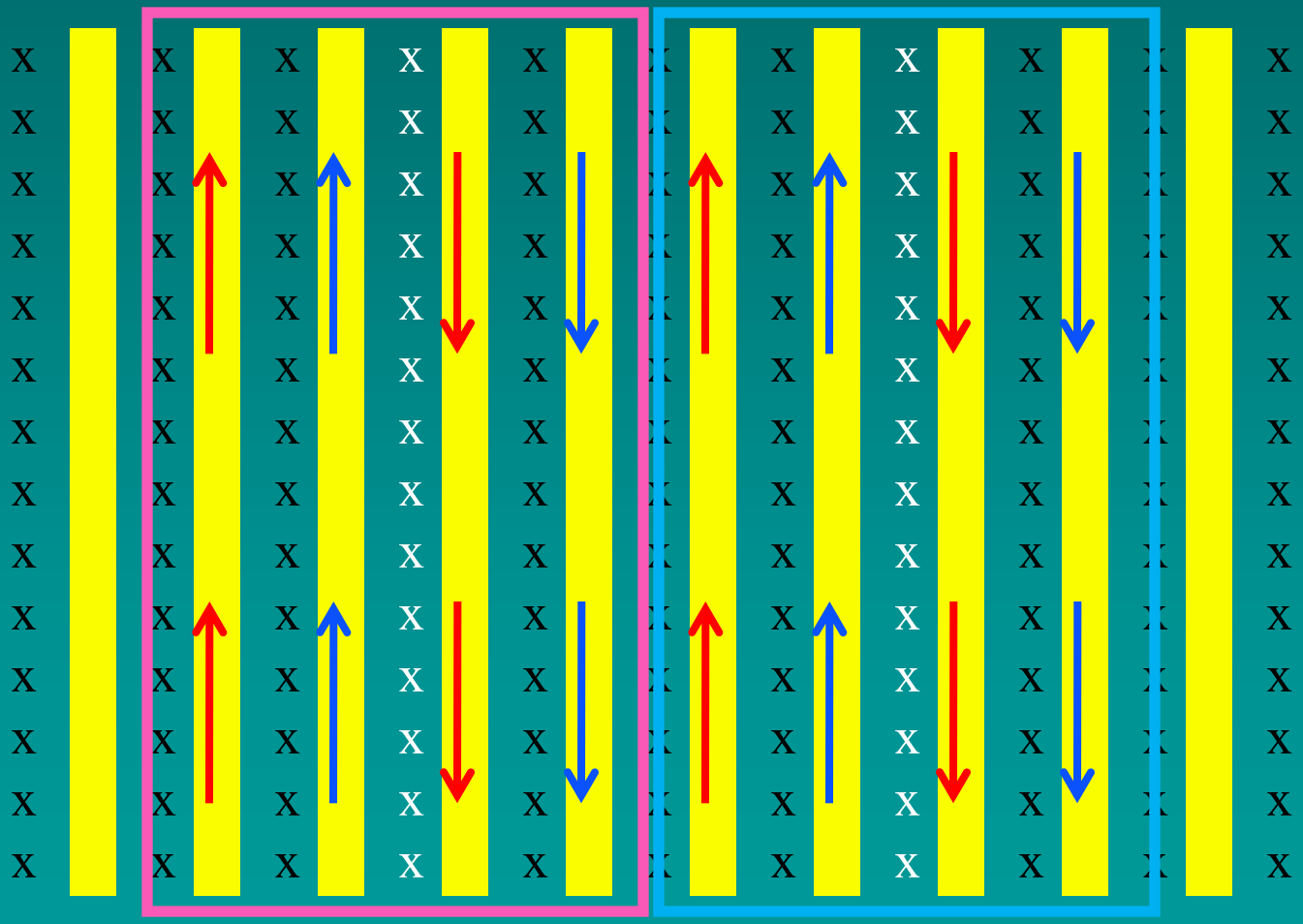
Trial Protocol
2009

- RCB, 4 reps, alt. row spraying
- Rows ~100 trees long
- Treatments:

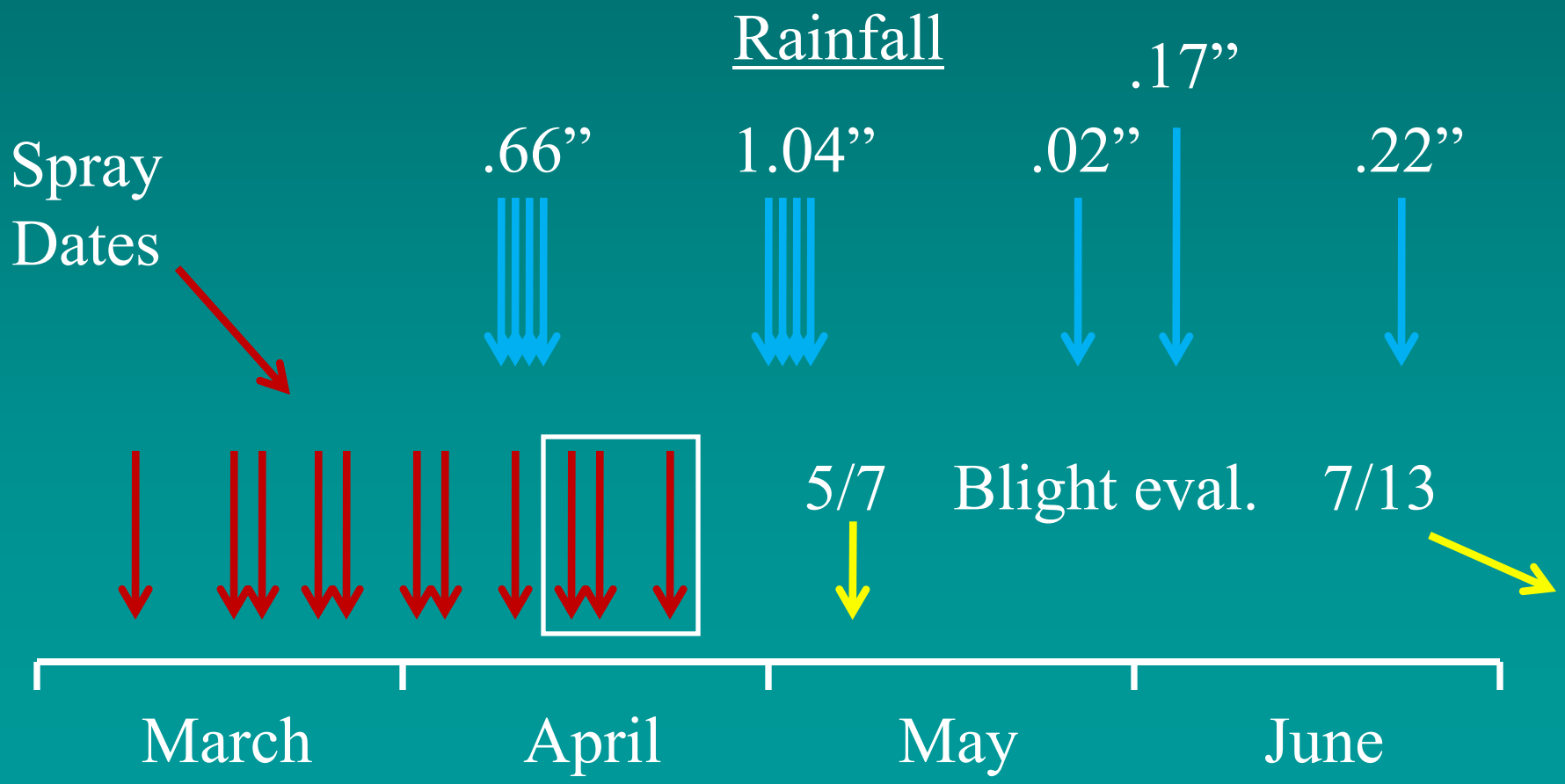
1. Mycoshield (1.0 lb./acre), season-long
2. Kocide 3000 (0.5 lb./acre) + Manzate Pro Stick (3 lbs./acre), season-long
3. Kocide 3000 + Manzate Pro Stick up to April 8, Mycoshield April 14 through April 21
4. (15 untreated trees – nearby point rows)

Layout of Two Plots – 2009

Alt. Row Spraying, Data from Center Row



Season Timeline
2009



Mean No. of Blight Strikes/Tree
2009

Treatment	May 7	July 13
Mycoshield	0.11 a	1.52 b
Kocide + MPS	0.27 a	0.62 c
Kocide + MPS, then Myco	0.21 a	1.73 a

$P \geq 0.05$, Tukey's HSD (May 7 sig. diff. at $P = 0.06$)

Percent Russetting
2009

Treatment	July 16
Mycoshield	1.06 a
Kocide + MPS	1.09 a
Kocide + MPS, then Myco	0.69 a

$P \geq 0.05$, Tukey's HSD, No significant differences

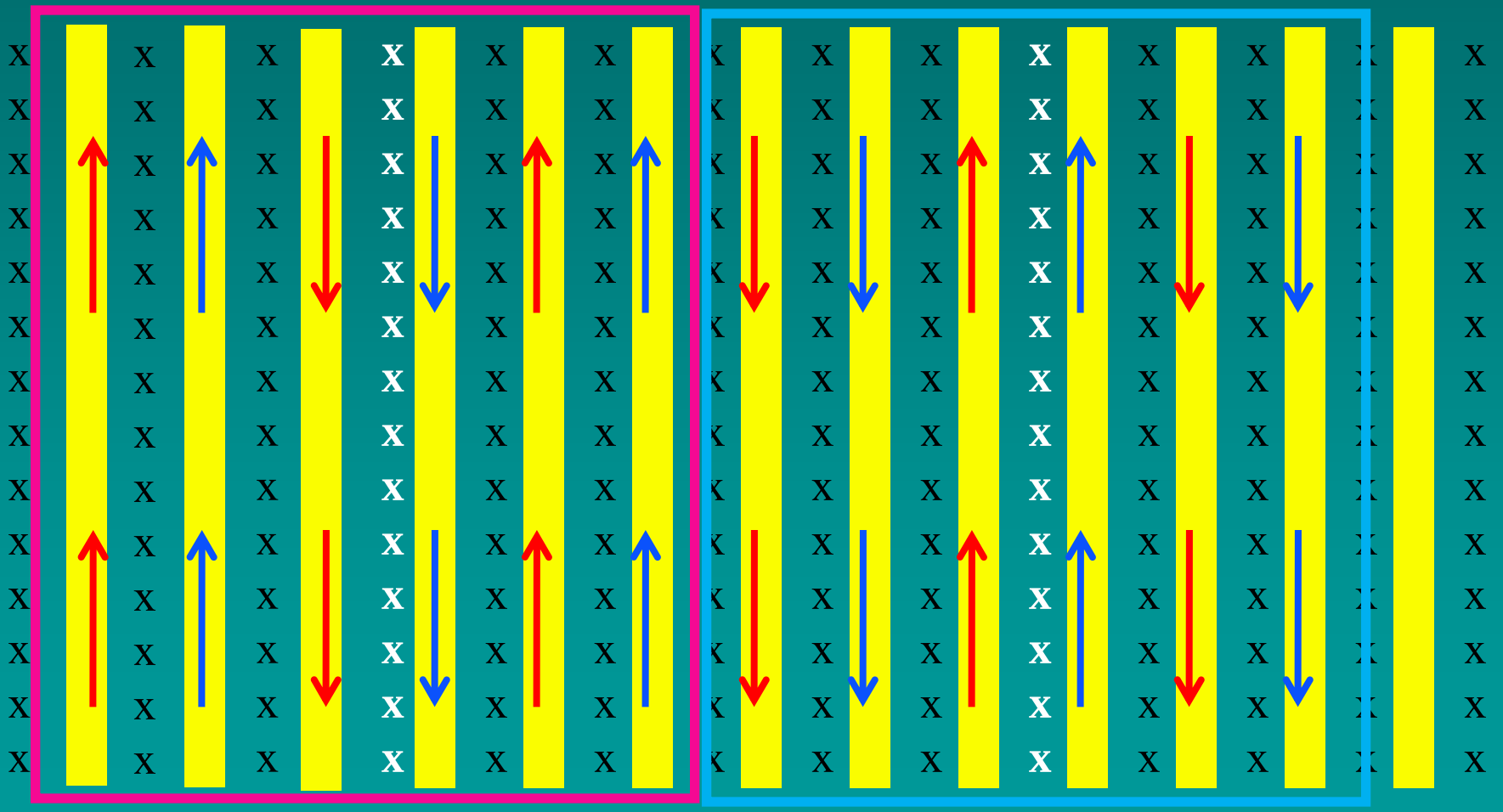
Trial Protocol
2010

- RCB, 4 reps, alt. row spraying
- Rows ~100 trees long
- Treatments:

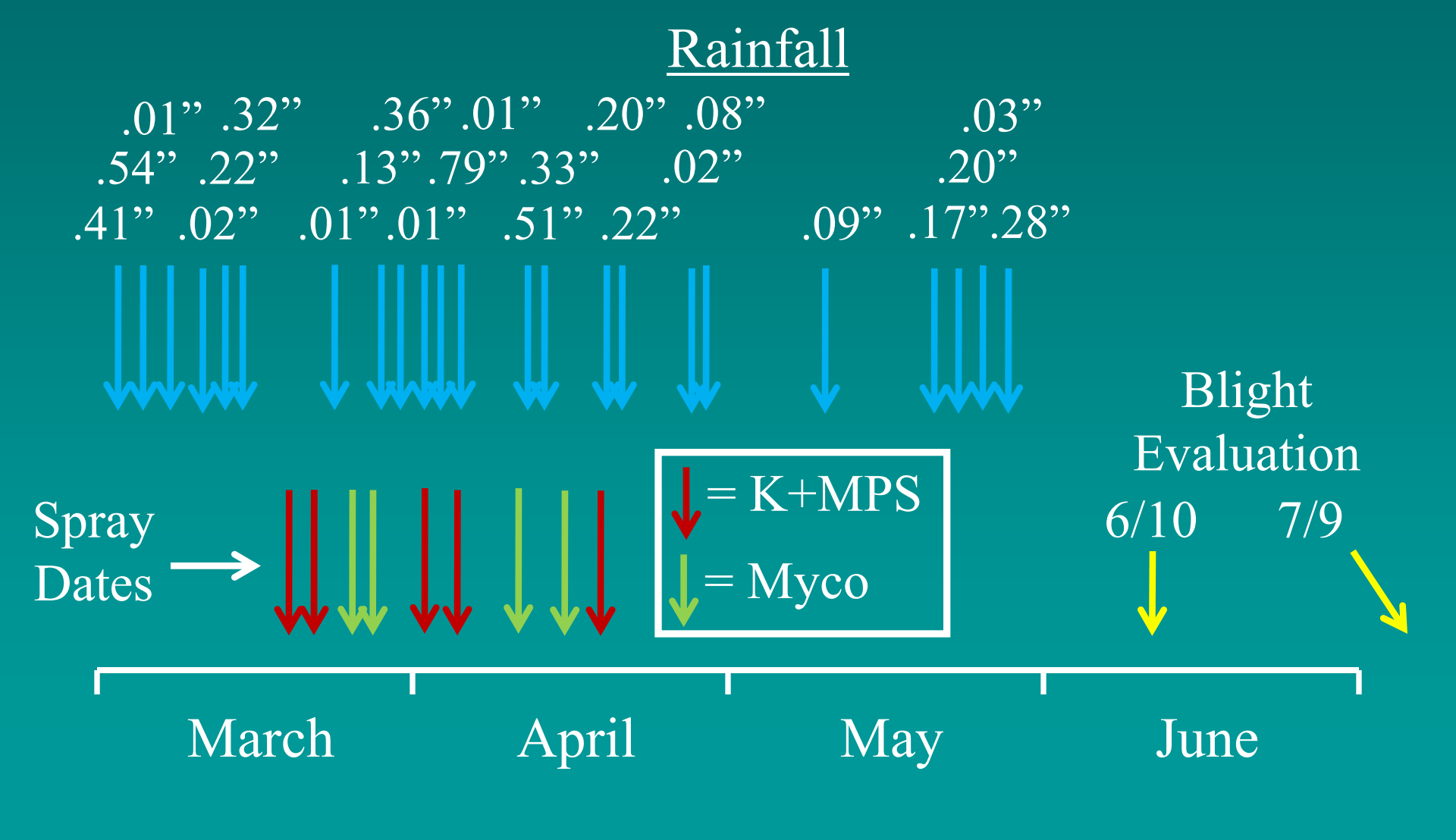
1. Mycoshield (1.0 lb./acre), season-long
2. Kocide 3000 (0.5 lb./acre) + Manzate Pro Stick (3 lbs./acre), alt. with Mycoshield
3. Kocide 3000 (0.25 lb./acre) + Manzate Pro Stick (3 lbs./acre), alt. with Mycoshield
4. (No untreated trees)

Layout of Two Plots – 2010

Alt. Row Spraying, Data from Center Row



Season Timeline
2010



Mean No. of Blight Strikes/Tree
2010

Treatment	June 10	July 9
Mycoshield alone	1.37 a	0.88 a
K+MPS / Mycoshield	1.49 a	0.91 a
K+MPS (1/2 K) / Mycoshield	1.40 a	0.92 a

$P \geq 0.05$, Tukey's HSD, No significant differences

Percent Russetting
2010

Treatment	July 14
Mycoshield alone	1.54 a
K+MPS / Mycoshield	1.82 a
K+MPS (1/2 K) / Mycoshield	1.57 a

$P \geq 0.05$, Tukey's HSD, No significant differences

Conclusions

- Late season (shoot) blight most common
- K+MPS as last spray may reduce shoot blight
- Copper resistance potential, so rotate with Mycoshield and/or Agri-Mycin + BlightBan
- K+MPS caused no additional russetting
- Russetting seen in Delta in 2010; use K+MPS only when leaves are dry and spray should dry before rain