Appendix VIII. Applications for BDMs in Small Fruit Production


- Everbearing strawberries in Washington State
  - Current product – 0.6-1.4 mil HDPE
  - Required lifetime: 1-2 years
  - Physical Requirements:
    - Able to lay with commercial bed shaper/mulch layer
    - Available in rolls 48-60 inches wide, 2000-8000 feet long
    - Block light sufficiently to prevent weed seed germination (clear not acceptable)
    - Black or other dark color desirable to facilitate soil warming in cool environments; light colors probably better in warmer environments.
    - Once laid on beds, withstand winds up to 60 mph, even with planting holes cut in top
    - Acceptable either water permeable or not. Soil environment will generally be moist from irrigation through drip lines.
  - Chemical Requirements:
    - Withstand overspray of pest management products
    - Withstand fertilizer products added via drip line.
    - Degradation products not toxic to strawberry plants or to consumers (fruit lays directly on the surface).

- Blueberry weed management
  - Current product: landscape cloth
  - Required lifetime: 8+ years
  - Physical Requirements:
    - Able to lay with commercial bed shaper/mulch layer
    - Available in rolls 48-60 inches wide, 2000+ feet long
    - Block light sufficiently to prevent weed seed germination
    - Black or other dark color desirable to facilitate soil warming in cool environments; light colors probably better in warmer environments.
    - Once laid on beds, withstand winds up to 60 mph, even with planting holes cut in top
    - Acceptable either water permeable or not. Soil environment will generally be moist from irrigation through drip lines.
  - Chemical Requirements:
    - Withstand overspray of pest management products
    - Withstand fertilizer products added via drip line.
    - Soil environment is generally acidic (pH 4.5-5.5); acidifying agents (Sulfur) sometimes added through drip line.
    - Degradation products not toxic to blueberry plants
• Soil solarization, biofumigation / whole-field treatment
  o Current product: thin clear HDPE
  o Required lifetime: 1-2 months
  o Physical Requirements:
    ▪ Able to lay and glue with commercial mulch layer
    ▪ Strong enough not to blow away during application
    ▪ Available in rolls 11-13 feet wide, 2000+ feet long
    ▪ Sufficient UV inhibitors to last for 1-2 months
    ▪ Clear, maximal visible light penetration
    ▪ Applied in wide rolls; must not break up into large pieces which will blow away.
  o Chemical Requirements:
    ▪ Must be able to glue to self rapidly
    ▪ In case of biofumigation, should be impermeable to volatile agents, such as isothiocyanates.

• Soil solarization and biofumigation / bed treatment
  o Current product: ca 1-mil clear or black HDPE or VIF film
  o Required lifetime: 1-6 months
  o Physical Requirements:
    ▪ Able to lay with commercial bed shaper/mulch layer
    ▪ Available in rolls 48-60 inches wide, 2000-8000 feet long
    ▪ Withstand winter winds once in place
    ▪ Sufficient UV inhibitors to last up to 6 months
    ▪ Clear for solarization; pigmented for some biofumigation applications
  ▪ Chemical Requirements:
    ▪ Tolerance of and impermeability to biofumigant chemicals (isothiocyanates)
    ▪ Tolerance and impermeability to common conventional soil fumigants (Telone, chloropicrin, metam)