During the six years field trials have been conducted at the University of Maryland Research and Education Center in Upper Marlboro, Maryland; examining strip-till and no-till vegetable planting techniques. The studies utilized cereal rye, and German foxtail millet cover crops, winter and summer annuals, respectively. A sustainable and low input protocol was followed to maximize time and economic investments, and to include soil conservation benefits of reduced tillage regimes. The vegetables included in these trials were direct seeded with a Monosem® no-till planter, with or without the strip-tillage prior to planting. An aggressive strip-tillage 12” wide by 6” deep was provided by utilizing a single row Ferguson® Rip-Strip Till implement. Leafy green vegetable crops were planted in the spring into cereal rye, and in the fall into the German foxtail millet. A burndown application of Gramoxone® to stop the cover crop growth was applied as required. For the leafy vegetable plantings no residual herbicides were required, and an integrated pest management approach led to minimized usage of insecticide and fungicide applications. Full season summer planted vegetables were planted into a cereal rye cover, and followed similar study protocol with the addition of residual herbicides. The highlights of these studies have been reviewed, noting the benefits and challenges discovered during the investigations.

Preliminary Study Conclusions
◆ Response to strip-tillage may be variety sensitive.
◆ For most crops investigated in this study strip-tillage led to a 20% to 30% increased plant population at emergence than no-tillage.
◆ Strip-tillage warms the soil which provided a 15% to 35% yield increase in early spring planted leafy greens and vegetables.
◆ Strip-tillage eliminated the cover crop competition, which led to robust seedling growth.
◆ Early pre plant burndown (EPP) of the cover crop is recommended when soil moisture is limiting. During drought conditions EPP one week prior to planting for each foot of cover crop canopy.
◆ EPP of cover crop will also reduce the chance for seed germination inhibition due to allelopathy.
◆ No-tillage may be more cost effective than strip-tillage for summer vegetables with fast germination and quick seedling growth.
May 22, 2009 - Strip-Till/No-Till Vegetables

A - Squash Black Beauty 18" x 12" C-2 9/59
B - Squash Early Prolific
C - Muskatoel-Aleta's Giant 18" x 12" C-2 7/77
D - Watermelon Charleston Gray 18" x 12" x 10' C-2 7/67
E - Watermelon - Bush Jubilee 15" x 15' C-2 9/59
F - Watermelon - Crimson Sweet 18" x 12" x 10' C-2 9/59
G - Watermelon - Super Baby (no 2nd seed for G)
H - Snap Beans - Roma II 2 3/4" x 12"
I - Lima Beans

June 16, 2009 - Pumpkin Strip-Till/No-Till

J - Acorn (c-2 16" x 10' x 12")
K - Baby Bant
L - Autumn Gold
M - Cushaw
N - Mixed Gourds

WATERMELON 1ST ROW
WATERMELON 2ND ROW

9 10 11 12 13 14 15 16 17 18 19

[Diagram showing the layout of the garden beds with the mentioned plants and seeds dates]