

Micro Spray Pattern Selection

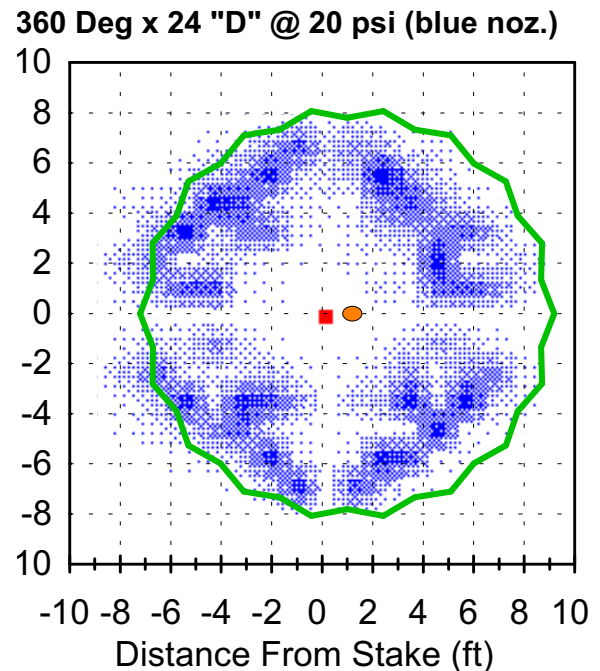
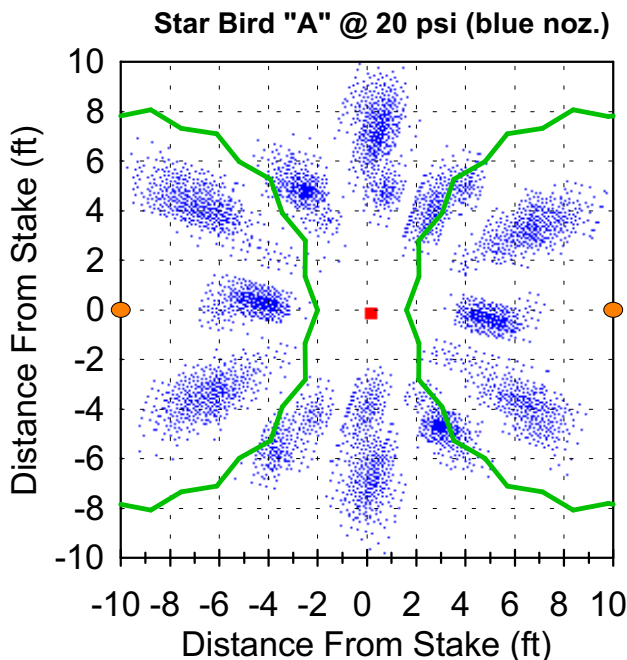
Micro spray irrigation of tree crops is a popular way of providing water and fertilizer more directly to the crop root zone. Where lateral spread of water is limited, it provides a better way of supplying water to a high percentage of the root zone than drip emitters. Because there are a number of micro spray patterns available, it can be difficult to choose which one is best. To aid in this selection process, Rain Bird has tested most of the Micro Quick patterns available in a catch can test. A "densogram" is generated from this data using the SPACE program from the Center for Irrigation Technology, Fresno, California. A tree canopy may be overlaid on this micro spray pattern using a software program called Treegram. The program allows any tree canopy to be overlaid over the water pattern and visualized. This helps both growers and designers in selecting a pattern that targets the water and fertilizer best suited to the crop. The following examples illustrate the use of the program.

Example 1

Canopy Diameter: 16 feet
 Tree Spacing : 20 feet
 Row Spacing : 20 feet
 Stake Offset : 10 feet

Example 2

Canopy Diameter: 16 feet
 Tree Spacing : 20 feet
 Row Spacing : 20 feet
 Stake Offset : 1 foot

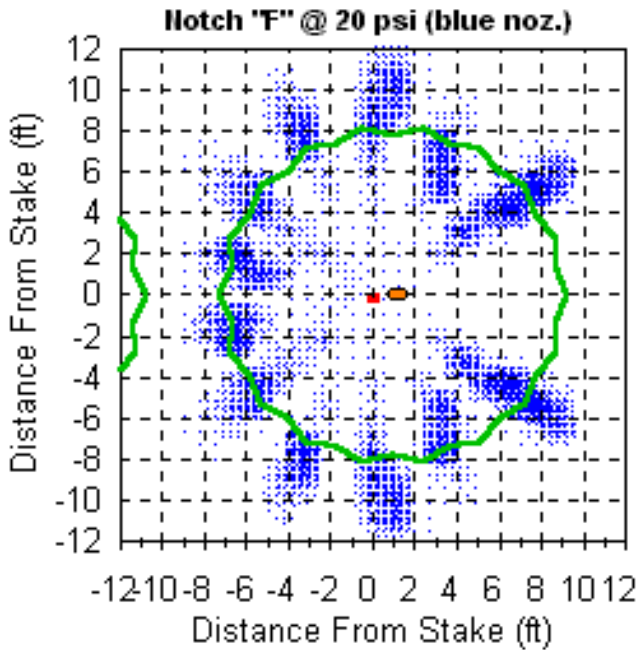


In each Treegram the blue dots represent the water pattern relative intensity. The green circular lines represent the tree canopy outline and the tree trunk is depicted by the small brown circles. The red square is the stake and is positioned in the middle of each Treegram at the origin. The "Offset Position" given in each example is the distance the stake is placed from the tree to the right.

In Example 1 the stake is positioned halfway between each tree. In Example 2 the stake is positioned near the tree trunk. The pattern in Example 1 distributes a significant amount of the water outside of the canopy, while in example 2 almost all of the water is distributed inside the canopy. Knowledge of tree crop growth, crop management, fertilization, and other factors will determine which pattern is best.

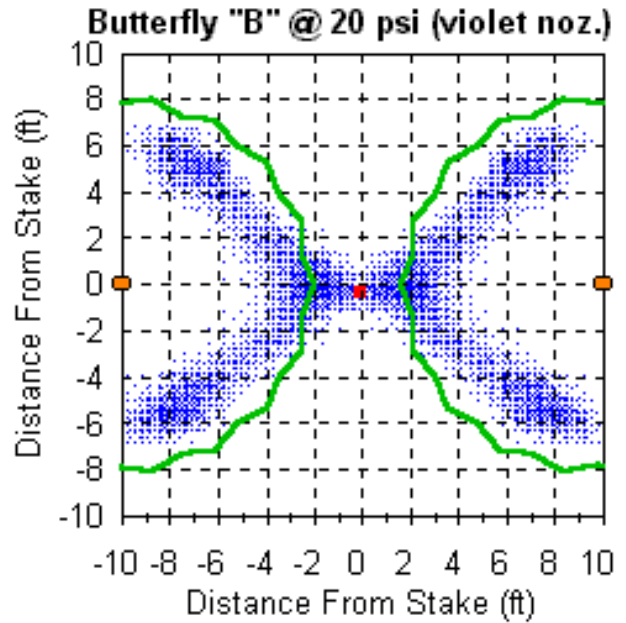
Example 3

Canopy Diameter: 16 feet
Tree Spacing : 20 feet
Row Spacing : 20 feet
Stake Offset : 1 foot



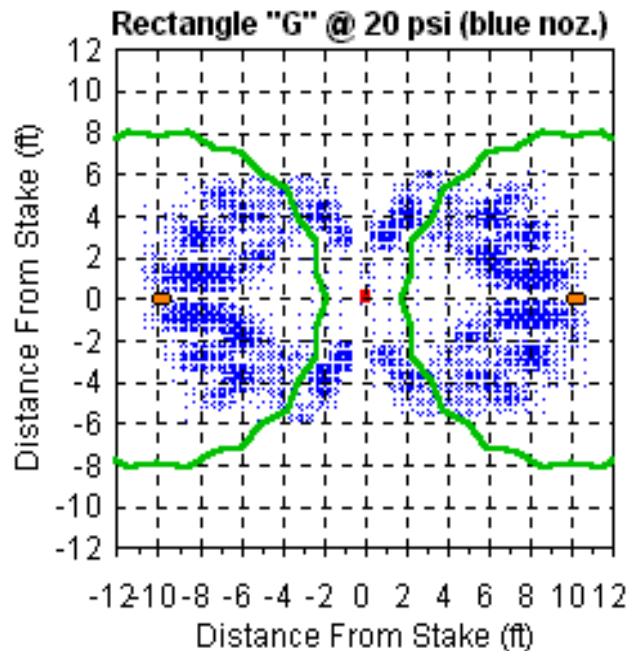
Example 4

Canopy Diameter: 16 feet
Tree Spacing : 20 feet
Row Spacing : 20 feet
Stake Offset : 10 foot



Example 5

Canopy Diameter: 16 feet
Tree Spacing : 20 feet
Row Spacing : 20 feet
Stake Offset : 1 foot



Each example on this page illustrate typical applications for each pattern shown. Example 3 shows a notched "F" pattern used to irrigate most of the root zone without wetting the tree trunk. Example 4 illustrates the use of the Proportional Butterfly "B" pattern which targets water around the dripline of the canopy. Example 5 is a graphic image of the Rectangular "G" pattern, which waters a strip approximately 12 feet wide down the row.

For information about Treegram software and Micro Quick products contact:

Rain Bird Agri-Products Co.
633 W. Foothill Blvd.
Glendora, CA 91741-5624
Phone: (800)435-5624
Fax: (626) 852-7310

Rain Bird International, Inc.
145 N. Grand Ave.
Glendora, CA 91741-2469
Phone: (626) 963-9311
Fax: (626)963-4287