



## The Right Nozzle Can Improve Uniformity

Improving irrigation pattern uniformity can significantly affect crop production and profitability. In a study by Brad King overall total yields increase 6%, from 362 cwt. an acre to 385 cwt. an acre by increasing uniformity from 70% to 90%, which could increase income by \$92/acre. When looking to obtain a uniform watering pattern there are three main criteria which you must follow.

I. Matching pump/well characteristics to nozzling package. This requires current information on pumping plant and wells to match flow, pressure, and well capacity to nozzling package. When the package isn't matched pattern uniformity suffers severely up to 50% reduction in uniformity

II Pay Attention to Details

Changes in spacing, drop type and height, transitions in nozzle type, end gun and booster pump size, truss interference, boombucks, pipe diameter changes, pressure drop across a corner system, etc. If details are overlooked it can lead to individual rings in the field where a detail hasn't been accounted for. One ring in the middle of a field can reduce yield on 1.5 acres by 25 cwt/acre at a cost of \$150.

III. Select correct pads for uniform distribution of water.

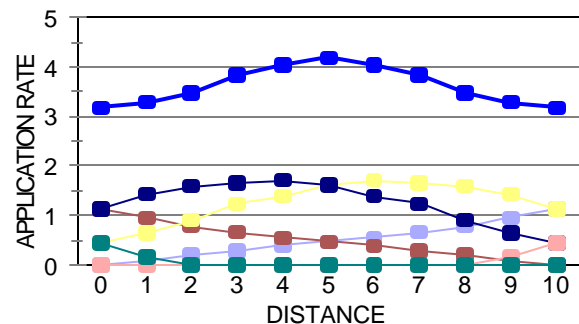
A Nozzle height and spacing. Lower height or wider spacing require more throw, use concave pads.

B Nozzle pressure. On high pressure systems use coarse pads to minimize misting and wind drift. On low pressure systems use smoother pads to increase drop breakup to help prevent soil sealing, runoff, and washing the hills on susceptible soil types.

C Truss location. Dependant on truss location and nozzle location select pad such that interference is minimized.

This graph shows a good uniform Pattern.

### NOZZLE OVERLAP CONCAVE MEDIUM GROOVE



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