

POTATO

Review

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**ROLL-OUT FOR NEW
SUFFOLK BRAND**

EVALUATING THE OPTIONS FOR POTATOES

Farmers are looking for irrigation equipment which will reduce labour costs, improve crop productivity and increase water use efficiency. Dr JERRY KNOX of Cranfield University assesses the factors which need to be taken into account when considering a switch from standard hoses to alternative systems

The dominant method of potato irrigation in the UK has always been a hose reel fitted with a rain gun, but booms, which potentially offer much better uniformity, are gaining popularity. Technological developments have also resulted in widespread uptake of alternative semi-permanent systems, including trickle and sprinkler irrigation.

Hose reels are always criticised for being inaccurate and inefficient but they are robust, versatile and fit well into typical UK farming systems. This is because the relatively short irrigation season, the small seasonal application depths (the total amount of water applied) and the flexibility required by rotational cropping patterns (following potatoes around a farm with non-standard field sizes) have favoured flexible systems with low capital costs.

Interestingly, recent research funded by the Horticultural Development Council (HDC) on the efficiency of overhead irrigation has found that under low wind conditions and when managed correctly (ensuring correct lane spacing and operating pressure), the uniformity of rain guns can in fact be very high – typically around 75–80%.

Major improvements in the design of hose reels fitted with booms have overcome many of the problems which previously made them unpopular with potato growers. The largest booms can irrigate a strip of equal width to a gun and the latest designs are simpler to fold up for moving between strips. Fields

with uneven topography, low infiltration rate soils and irregular shapes can create problems, but on large, flat fields booms are becoming the *de facto* choice.

However, they have much greater instantaneous application rates than guns, so run-off and soil capping can be a problem, particularly on silty soils and/or sloping land. Notwithstanding this, sales are growing strongly, driven by demand from the field-scale vegetable, potato and salad sectors where improving irrigation efficiency has become a driving factor.

There has also been a shift away from mobile overhead irrigation to semi-per-

manent systems such as solid-set micro-sprinklers. These are an economic alternative where frequent applications are required, and are well suited to small areas or irregular shaped fields that are difficult for large mechanised systems.

The cost of close lateral spacing and extensive pipe networks is compensated for by lower operating pressures (typically 3 to 4 bar in-field) allowing cheaper plastic pipe to be used. Advances in remote control technology enable field blocks to be managed on an individual basis, with irrigation applications adjusted according to variations in crop cultivar and local soil type. >>

Trickle allows smaller and more timely applications, and more accurate scheduling.

