*Increase in tuber number from an application of Blackjak at 4L/ha compared with control.*

## New trials show value of biostimulants

Trials in the UK and Poland have been adding to growers' understanding of the role of biostimulants in boosting potato yields.

Biostimulants have been used widely in crops around the world. Over the last few years there has been a marked increase in the number and type of new products entering the market. One type which has seen increased interest are humic substances, often referred to as humic acids.

According to Sipcam UK's Biosolutions Specialist, Chris Menzies, one rich source of humic substances is Leonardite, an organic material which has formed over millions of years. "It is high in beneficial organic fractions such as Humic, Fulvic, Ulmic acids and Humins."

He said: "The humic content and quality of products depends on several factors including the location, age and oxidation process of the source material."

One of the best sources is said to be in North Dakota, America which is the source material used for Sipcam UK's organic biostimulant, Blackjak.

Blackjak is produced in the UK, using an innovative micronisation process which has been shown to increase the total active humic content, preserve all of the beneficial fractions and to increase the surface area for faster, more uniform uptake compared with a chemically processed product. The end product also retains the natural, slightly acidic (4-5) pH of Leonardite, aiding crop uptake and tank mix compatibility.

Chris said: "The liquid form of Leonardite has been used in potatoes extensively worldwide as a foliar applied product, but more recently Sipcam have tested it as an in-furrow treatment, in large 1ha replicated blocks, in collaboration with the University of Warsaw in Poland, and also in a replicated small plot trial in Lancashire."

Based on previous scientific research, activity was expected to increase crop hormonal processes, particularly those involved with root and shoot development, nutrient assimilation, and transport. Laboratory studies have shown a significant uptake of key nutrients such as nitrogen, and also phosphorus which can often be difficult for potato plants to access, especially at the early development stage.

In the Sipcam trials, the Blackjak product was applied via a mounted planter applicator and sprayed in furrow, in-line with a typical tuber fungicide application. Rates in Poland included 2.5L/ha and 5L/ha, with the UK trial using rates of 2,3 and 4L/ha.

The trials data shows a considerable increase in marketable yield, with the Polish trials achieving a mean of 8.7t/ha benefit when compared to the control over the two years (2020/21).

In Lancashire, the recommended 3L/ha application rate resulted in a massive improvement over the control, lifting total yields from 48.4 t/ha to 58.4 t/ha, with a similar response from 4L/ha. At the lower dose rate of 2L/ha a 3t/ha uplift was achieved.

Sipcam has been encouraged by the independent trial results. Chris explained: "The yield benefits seen from the in-furrow application trials has been consistent across the three trials, with varying conditions. The application of Blackjak in the Lancashire trial in 2022 highlighted its ability to help the crop produce stronger root systems and therefore be more resilient to crop stresses, such as the drought conditions seen last summer." PR