



Questions and Answers

How does the system apply herbicide?

The Mankar ULV sprayers use a rotating disc similar to CDA sprayers to break up neat herbicide into a large number of small even sized droplets. However, there is a substantial difference from conventional CDA in that the disc produces smaller droplets around 40 microns rather than 200 microns and instead of projecting these horizontally in a circle, the Mankar system projects them downwards in a flat fan shape towards the ground at high speed, thus avoiding spray drift.

Why does the sprayer produce smaller droplets than CDA?

By producing smaller droplets, the number of droplets applied for a given area is about 125 times more than CDA giving far better coverage on the leaves of target weeds. Small grass seedlings are not missed and larger weeds absorb far more herbicide. This enables the system to deliver a fatal dose of active herbicide at far lower application rates than CDA or conventional sprayers. For instance conventional sprayers might apply 5 litres of herbicide in 250 litres of water per hectare, CDA might apply 10 to 15 litres per hectare, but Mankar ULV will work at as little as 2 litres per hectare of neat Roundup ProBiactive 450.

In Holland, pavement dosage of 1 Litre per hectare has proved to be sufficient. Tests at the WUR Agriculture University in Wageningen (NL) have shown good results with as little as 0.6 Litres per Ha. (Kempenaar Jan.2007) however, Monsanto label rates guarantee success.

With such small droplets, why is there no spray drift?

Two reasons. Firstly, the spray pattern is directed downwards towards the ground and target weeds rather than horizontally, and at much higher speed than CDA droplets. These hit the ground or leaves and stick before they have lost momentum and can drift. Secondly, the whole spray head is enclosed in a windshield that keeps everything sheltered. In practice, the Mankar system can be used in far windier conditions than a CDA lance.

N.B. In fact pressure-based sprayers create real spraydrift. Mankar systems work with zero pressure, just by momentum and gravity.

If the sprayer applies neat pesticide, will this work?

Yes, in fact far better! It is a well-proven fact that the less water volume used, the better glyphosate works. This is because the adjuvants, stickers and spreaders in it are more concentrated and none of it runs off as it does when applied in water. In addition, the formulation dries onto weeds in minutes and is quickly absorbed and more rain fast.

Is it not illegal to apply herbicide neat?

In most cases yes, unless a product is MAPP approved for neat application. However, a special clearance has been obtained to apply Monsanto's Roundup ProBiactive 450 glyphosate undiluted through the Mankar system. This is Monsanto's top of the range product for strength, efficacy, operator and environmental safety. There is no other product as safe, as effective in killing weeds or as environmentally friendly. These characteristics match the Mankar 'green' concept.

How does the system give a sharp edged 2" or 3" band for narrow strips around gravestones or lawn edges?

The spray hood and its fanjet revolve through almost 90 degrees so at this angle, with forward movement, the width is reduced and gives sharp edges.

How do you clean the sprayer?

Cleaning is simple and cheap. Just use water. Open the flow tap to its fully open position.

How often do you clean the sprayer?

Glyphosate can be left in the sprayer for several days at a time. We recommend that it is cleaned through with water at least once a week.

How long does the battery last?

On the hand held lances the lead acid battery pack lasts 16 hours of continuous use. More than enough for a long day's work! The battery can be recharged overnight.

Isn't the sprayer rather heavy compared to a normal sprayer hand lance?

The Mankar hand lances are around 3Kg or 6 ½ pound in weight. However, when supported by an elasticized neck / shoulder strap they sit completely weightless in the hand and are a joy to use. The elastic allows the lance arm to stretch out to reach weeds that are off to one side by pushing the lance handle. Keep in mind that you carry a weight of about 20 kg on your back with a normal knapsack sprayer.

How do you calibrate the sprayer to allow for different application rates, widths, or faster forward speeds?

For the Mankar hand lances there is a simple dial that controls the flow of herbicide just like a water tap. The chemical drips through this tap into a sight glass and you can count the number of drips per minute to measure the calibration against forward speed and application rate tables. Very quick, easy and accurate. For the other Mankar models it is even more simple: once the dosage per ha is set on the pump dial the dosage is always constant, irrespective of walking or tractor speed..

With such a small herbicide container, how long does this last?

The herbicide reservoir on the Mankar hand lances is just 500 millilitres. Calibrated for 4 KPH forward speed and 45 cm width at 2 litres per hectare, this will last a continuous one hour and 25 minutes of spraying. If the operator carries a reserve supply of 2 ½ litres in a back pack, it takes less than 5 minutes to refill the reservoir and this will cover an 8 ½ hour continuous spraying day with no return needed to a base vehicle or depot. Compared to knapsack spraying, this at least doubles manpower productivity and is the main reason for using Mankar ULV far outweighing the savings on herbicide use, which are additional.

Why has the Mankar ULV system been developed?

Because of environmental issues and EU directives to reduce pesticide applications into the environment. In several European countries pesticide use is restricted to very low levels as small as one litre per hectare. At these low levels of application conventional application in water or normal CDA applications either do not work or work very poorly. The technology within the Mankar system applies the herbicide so much more effectively that very small doses do work. The savings that it delivers in operator productivity and in herbicide use are added bonuses.

What are the environmental benefits?

New EU pesticide legislation requires reduced inputs of pesticide into the environment. If you can kill weeds using just 2 litres per hectare of pesticide, why use 10 or 15 litres of CDA or 5 litres of conventional pesticide? In addition the system is so accurate and drift free that pesticide is only applied where it is required. In Holland, the Mankar ULV system is the only system allowed to operate near to watercourses for this reason.

Is the equipment robust enough for professional use?

The Mankar system has been widely used in Europe for over 15 years and is in daily use by very many public authorities. Unlike most CDA lances, the spray head is shielded and protected by a spray hood that prevents damaging it in vehicles or against the ground. The design is deliberately simple, with a 6-volt lead acid battery, an on / off switch, a flow control tap and a spray motor head. There is less to go wrong than on a knapsack sprayer.

Is Mankar equipment expensive?

No. Although initial outlay may be higher than a conventional sprayer, return on investment is very high due to savings in manpower and herbicide. If you hire the equipment, savings start on day one. Manpower productivity is almost doubled and herbicide used is reduced by at least 50% compared to conventional spraying. Compared to CDA, there is still a manpower saving, but herbicide use and cost is reduced by about 80%. So the cost of a Mankar system is very quickly recovered. An operator can easily cover 25 to 30 miles a day and up to 5 hectares without fatigue.

Why should I change from my present spraying system?

Because you will save a lot of money and substantially reduce inputs of pesticide into the environment, as required by the new EU Thematic Strategy. You will save many man-hours of hard labour and also a lot of herbicide but still kill the weeds. Why would you therefore want to keep your present system?

If you have any further questions or want to try the Mankar system please contact us:

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