

Practical experience in running Field Sprayers Inspection Station, and measuring tools design and their implementation

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The aim of the research was to find alternative, faster, cheaper and more accurate methods of measuring the flow of liquid from field sprayers nozzles with free flow, and the development of devices for doing so. I believe that the prevalence of use our tools will significantly speed up the inspection process, while increasing its reliability and precision. Developed devices MicroFLOW (Fig. 1) and SprayerTEST (Fig. 2) use well known principle of measuring the intensity of the free flow of liquid from any source actually. They use also best technical solutions presented by other companies, but our invaluable advantage is the possibility of any technical adaptation and modification of software. Microflow and Sprayer Test has been developed after several months of testing, training and research.



Fig. 1. MicroFLOW in use.



Fig. 2. SprayerTEST in use.

Work on the device is still going on - in the adaptation displays, flow meters, algorithms. The target will be designed several versions of the device, for simultaneous measurement of a few or several nozzles at the same time. Any of your opinion will be my determinant for further design work and programming, which allow for the improvement of technical parameters and performance presented devices, and will stimulate to the completion of the inspection device for orchard spraying. Also 2.4 GHz communication become available.

Data collected during our activity (fig. 3 and 4) – can show what are the main technical problems, and inquiry were result of most problems for farmers why farmers are not well prepared:

lack of information, no information published, or not appropriate way

reluctance despite of sanctions – sanctions are to small;

to long inspection intervals – everything can be done with sprayer during that time;

inspector is a weak link – just only pay the inspector;

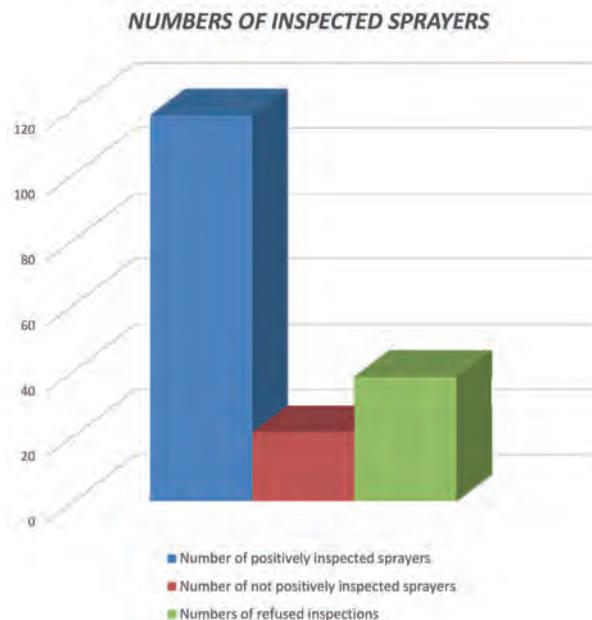


Fig. 3. Number of inspected sprayers.

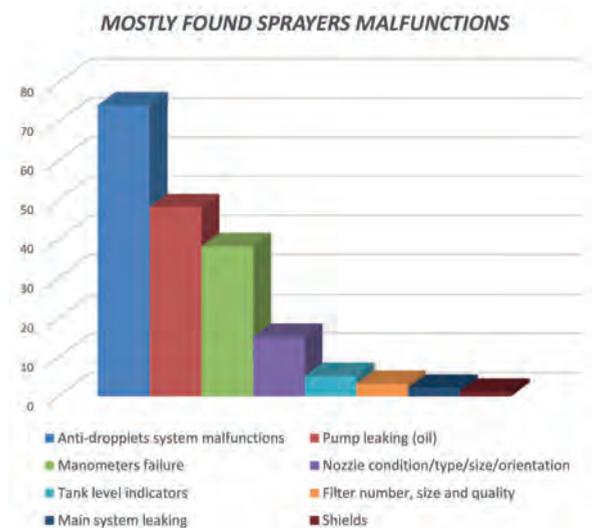


Fig. 4. Mostly found sprayers malfunctions.