I will discuss the complementary role of the different experimental methods to search for dark matter. In particular, I will show how hypothetical future collider data may not suffice to completely identify the model for dark matter and how a combination of different targets in direct detection experiments could be used to determine some of its properties in an unambiguous way. In doing so, I will also comment on the uncertainties that affect the reconstruction of DM parameters, in particular those arising from the limitations of the nuclear models describing the physics of the experimental targets.