



Comparison of Syringeability of 3 Injectable Endectocides (Eprinomectin 20 mg/mL, Doramectin 10 mg/mL, Ivermectin 10 mg/mL)



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Objectives

Compliance of an injectable product relies on different factors being one of them the syringeability. High fluidity allows fast injection which mitigates the risk of insufficient volume administration, needle breakage, spillage of product or injury of the user. The aim of this study was to compare the ease of injection of 3 commercial injectable endectocides.

Materials and methods

Three commercial injectable endectocides were tested: "Ivomec[®]" (Merial, Ivermectin 10 mg/mL), "Dectomax[®]" (Zoetis, Doramectin 10 mg/mL) and "Eprecis[®] 2%" (Ceva, Eprinomectin 20 mg/mL). A volume of 15 mL of each product was withdrawn in a 20 mL glass syringe set up with a 1.2 mm or 0.8 mm diameter steel needles. A mass of 1 kg (1 Newton) was applied to the piston and the time needed to empty the last 10 mL of solution was recorded. This procedure was repeated 6 times for each product at ambient temperature. Results are provided with the average and standard deviation.

Results

For the 1,2 needle, the times needed to empty the syringe were: "Ivomec[®]" (Merial, Ivermectin 10 mg/mL): 16.83 seconds +/- 0.75, "Dectomax[®]" (Zoetis, Doramectin 10 mg/mL): 22.83 seconds +/- 0.75, "Eprecis[®] 2%" (Ceva, Eprinomectin 20 mg/mL): 12.2 seconds +/- 0.9. All these differences are significant ($p < 0.05$).

For the 0,8 needle, the times needed to empty the syringe were: "Ivomec[®]" (Merial, Ivermectin 10 mg/mL): 81.17 seconds +/- 3.76, "Dectomax[®]" (Zoetis, Doramectin 10 mg/mL): 115.83 seconds +/- 1.72, "Eprecis[®] 2%" (Ceva, Eprinomectin 20 mg/mL): 52.7 seconds +/- 0.75. All these differences are significant ($p < 0.05$).



Conclusions

Good syringeability is important to facilitate the use of injectable products in the field and to ensure compliance. Eprecis[®] 2% (Ceva, Eprinomectin 20 mg/mL) has demonstrated a significant better syringeability than the other two products tested with the two different needles tested. The superior performance can be explained by the active ingredient and the different excipients used in their formulation. This high fluidity strongly increases the comfort and convenience of use in the field.