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Potential aversion-inducing compounds in leafy spurge

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It has been demonstrated that leafy spurge can elicit a conditioned food aversion in cattle, sheep and laboratory rats and suggested that this may explain why cattle seldom graze this nutritious plant and why sheep may not readily consume it at some locations. The identity of the aversive compound(s) in leafy spurge is unknown, but several different diterpenoid ingenol esters have been isolated from its tissues, and we suspect that one or more ingenol esters may be aversion-eliciting compound on leafy spurge. The objectives of this study were to determine whether or not a crude acetone extract of leafy spurge, presumably containing ingenol esters, could generate an aversive response in sheep and laboratory rats. And further, to determine whether or not a particular ingenol monobenzoate, which may be similar to ingenol esters in leafy spurge, might also elicit an aversive response from laboratory rats. An acetone extract of leaf spurge induced a mild conditioned aversion in both rats and sheep. The ingenol 3-monobenzoate also induced a mild conditioned aversion in rats. We interpret these data to suggest that one or more ingenol esters may be aversion-inducing agents in leafy spurge. However, other compounds may exist in leafy spurge that are aversive to certain livestock.