

Effect of Microencapsulation on Absorption Processes in the Pig

A. Piva, P. Anfossi, E. Meola, A. Pietri, A. Panciroli, T. Bertuzzi, A. Formigoni

Livestock Production Science (1997) 51:53-61

The effects of microencapsulation with long-chain fatty acids (LCFA) on the absorption and bioavailability of nutrients and drugs was studied in pigs using microencapsulated tryptophan (TRY) and sulfamethazine (SMT). Portal concentrations of tryptophan were monitored in gilts fed a basal diet supplemented with 1.75 and 10.75 g pig⁻¹ day⁻¹ free crystalline or microencapsulated TRY. Sulfamethazine plasma kinetics were studied in gilts orally administered with free-base or microcapsulated drugs (1 g pig⁻¹) at feeding time. Blood samples were collected until 8h and 120 h after feeding in pigs treated with TRY and SMT, respectively. Absorbed fractions of both microcapsulated TRY and SMT were lower than in the free forms by 26 and 32%, respectively, 8h after treatment. Nevertheless, total drug bioavailability measured by the area under the plasma concentration-time curve extrapolated to infinity (AUC 0-∞) was not modified by microcapsulation (970±355 µg ml⁻¹h). These data suggest that microcapsulation delays absorption without affecting the bioavailability of protected compounds.

HEADQUARTERS:

Vetagro S.p.A.
Via Porro 2 42124 Reggio Emilia - Italy
info@vetagro.com
infowesteu@vetagro.com
Tel: +39 0522 186 1500
Fax: +39 0522 92 7025
www.vetagro.com

OTHER LOCATIONS:

Vetagro Eastern Europe Kft.
Váci utca 81 1056 Budapest - Hungary
infoeasteu@vetagro.com
Tel: +39 0522 186 1500
Fax: +39 0522 92 7025

Vetagro Yem Ticaret A.Ş.
Levent Mahallesi, Cömert Sokak, No: 1
Yapı Kredi Plaza C blok Kat:17 No:40-41
Ofis:16 34330 Beşiktaş - Istanbul
info@vetagro.com
Tel: +90 212 318 9059
Fax: +90 212 317 4701

Vetagro Inc.
230 South Clark Street, # 320,
Chicago, IL 60604 - USA
infousa@vetagro.com
Tel: +1 773 610 2087
Fax: +1 773 442 0131