

# Did you know?

## Size Matters!

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MAAAX™ LONGfibe™ cubes contain forage particles of 4.5 cm and longer to secure sufficient chewing!

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*The longer the forage particles are, the higher the chewing rates. Short particles of less than 2.5 cm will decrease the chewing rates and the horses are more at risk for choking and gastric disturbances (Meyer et al, 2002). The picked-up forage will be chopped by the horse to a particle size of 2 mm in diameter and 1-4 mm of length, combined with larger parts (Meyer et al, 2002). The larger parts can influence the microbial flora in the hind gut by offering a different substrate to microbes. Depending on the type of feed, the horse will chew at different rates. Older research show chewing rates of 800-1200 chews per kg concentrates (Meyer, 1975) while forages are generally chewed way more often. The chewing rate of 1 kg of hay is around 3000-5000 chews per kg in horses and 7500 – 10000 chews per kg in ponies (Meyer, 1975). These numbers were confirmed by Cuddeford (1995), who reports the chewing rate with 5500 per kg hay in horses. When forage is chopped, it is very important to focus on the remaining particle size. Opposed to the reported particle size of Meyer et al (2002), Cuddeford and Ellis report a longer size that matters. If the particle length is less than 3.5 cm per particle average, there is no difference between the chewing rate of concentrates or chopped forage (Cuddeford, 1992, Ellis, 2003). Oats and concentrates are only chewed 10-20 minutes per kg in horses and 30-40 minutes per kg in ponies, while forage is chewed for at least 40-80 minutes. This means, that long forage particles are better than short ones. MAAAX™ LONGfibe™ cubes contain forage particles of even 4.5 cm and longer to secure sufficient chewing!*

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### *We recommend further reading:*

Cuddeford, D., Woodhead, A.,/Muirhead, R.: A comparison between the nutritive value of short cutting cycle, high temperature dried alfalfa and timothy hay for horses. Equine Veterinary Journal, Ausg. 24 1992, S.84-89

Ellis, A./Hill, J.: Nutritional physiology of the horse, Nottingham, 2005.

Frape, D.: Equine Nutrition and Feeding, 4. Edition. Oxford 2011

Meyer H, Ahlswede L, Pferdekamp M. Untersuchungen über Magenentleerung und Zusammensetzung des Mageninhaltes beim Pferd. Dtsch Tierarztl Wochenschr. 1980;87(2):43-7.

Meyer H. A report on the regulation of feed intake by horses. Dtsch Tierarztl Wochenschr. 1980;87(11):404-8.

Meyer H, Coenen M, Teleb H, Probst D. Untersuchungen über Futterzerkleinerung und Freisetzung von Futterinhaltsstoffen im Kopfdarm des Pferdes. Z Tierphysiol , Tierernährg u Futtermittelkde. 1986;56:266-75.

NRC National Nutrition Council: Nutrient requirements for horses, 5<sup>th</sup> Edition, 2007.

Geor, R.J., Harris, P.A., Coenen, M. : Equine Applied and Clinical Nutrition, Saunders, 2013