

## Daily routine of free-roaming horses

### Natural behavioral patterns

Under natural conditions, horses spend the greater part of their day eating; 50–70% of a 24-hour day. Following feed intake, standing in an awake (5–20%) or dozing state (10–20%) and locomotion independent of that during feeding (5–15%) take up most of their time. Comparatively little time is spent on behaviors such as lying down, drinking, comfort behavior, and so on. Many activities such as eating and resting are exhibited simultaneously by the members of a group. The reason for this synchronization of behaviors is the tendency to remain close to companions. The trigger for synchronous behavior is social facilitation.

Similar to physiologic processes, most behavioral patterns are subject to a daily rhythm that is determined by endogenous (“inner clock”) and exogenous factors (light, temperature). Independent of this circadian rhythm, however, other factors such as the weather, insects, and predators influence the daily routine. As a result, free-roaming horses do not have a strict daily routine, as is sometimes claimed, but are rather flexible.

Seasonal influences also have an effect on the behavior of free-roaming horses. A well known example is the seasonal migration of some equid populations, which is caused by extensive climatic changes and the resulting shortage of feed or water. The circannual rhythm is thought to be responsible for some behavioral changes of horses that occur during certain seasons. Among these are an increased unrest and a greater need for exercise during the spring and fall as well as increased feed intake at the beginning of winter.

### Implications for management and handling

#### ADAPTATION TO THE NATURAL TIME BUDGET

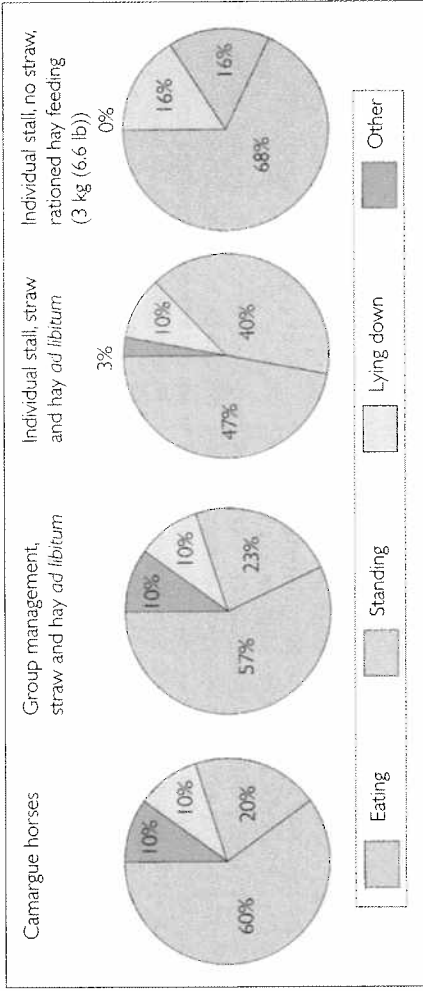
In captivity, depending on the type of management system and their use, the daily routine of horses differs to a greater or lesser extent from the natural activity rhythm. Figure 13 shows the time budget of horses living under near-natural conditions on the one hand and in captivity on the other. The comparison shows

by one third to 47%. An extreme shortening of eating time occurs with rationed feeding and strawless management. The time spent on feeding under those conditions is reduced to 16%. Divergences from the natural time budget such as these are not infrequently found in practice. They should, however, be strictly avoided because the emotional build-up resulting from an insufficient satisfaction of needs is the primary cause of management- and handling-induced behavioral aberrations.

### REGULAR OR IRREGULAR ORGANIZATION OF THE DAY?

With stalled horses it is customary to have a regular daily routine and, specifically, to maintain precise feeding times. The inner clock of horses is frequently given as a reason for this measure because horses react to delay in a very sensitive manner. They kick against the stall walls or rub their teeth against the bars or in general show an increased level of unrest and aggression. As a result, one tries very hard to maintain the correct time again at the next feeding. Is this exact timing necessary? As can be seen from the preceding explanations, horses tend to exhibit certain activities at certain times, but they are flexible and not at all fixed. The described behavior is caused, therefore, more by a learning process than by an inborn behavior. With stall management, it is therefore sensible not to let horses get too used to a fixed schedule. Horses show a more balanced behavior if they, as under natural conditions, have unlimited access to feed, or if they are fed several times during a 24-hour period without paying attention to a minute-by-minute time schedule. Many problem behaviors can be avoided in this manner. A divergence from schedule of several hours or more should, however, be avoided for ethologic and physiologic (digestion) reasons.

- An extreme divergence of individual activities from the natural daily routine leads to an insufficient satisfaction of needs and is the primary cause of behavioral disturbances.
- Letting horses get used to precise times, for example with regard to feeding and



13 Time budget of horses under different management conditions (according to Duncan 1980, Kiley-Worthington 1989).

## Social behavior

### Natural behavioral patterns

#### SOCIAL ORGANIZATION AND GROUP SIZE

Horses are social animals. Due to disease or exclusion from the group, they can temporarily become loners, but in most cases, social isolation ends in re-association with a different group or in the animal's speedy death. Naturally, horses live in harem groups (or bands) or in stallion or bachelor groups that can temporarily form herds of 100 animals or more. The individual groups are, however, independent of each other. While bachelor groups are structured more loosely, harem groups often stay together for years or even for life. The group's core usually consists of the leading stallion and his older mares. Bands with two or more cooperating stallions also exist, while one stallion always maintains the absolute alpha position.

Horse bands are relatively small and at most comprise 20 members. From observations of wild equids and mustangs that have run wild, it is known that a harem group usually consists of only one to six mares, their foals up to an age of 2 or 3 years and an adult stallion. The leadership of such a band is primarily incumbent on the dominant mare. The stallion also participates in this task. He is, however, primarily responsible for keeping the band

Even though horse bands have offspring every year, group size only varies within certain limits. This is primarily due to voluntary or forced wandering off of the offspring. The former often depends on the number of siblings, social pressure, and playmates. Young stallions are always driven away by their sire when they exhibit a strong interest in the older mares. If their advances are limited to the younger mares, the dominant stallion often is remarkably tolerant. In general, the relationship between the sire and his sons can be regarded as friendly, as long as the latter are not very dominant and do not claim an older mare. Young stallions that have wandered off form bachelor groups of most often two or three but up to 20 members. At an age of 5–6 years, when they have reached physical and psychological maturity, young free-roaming stallions can finally found their own band. In doing so, the keeping together of a group of mares appears to be more challenging than their acquisition. Only the strongest successfully “extract” mares from another harem in its entirety. Most often young stallions take over roaming, superfluous female offspring to found a band. Many young stallions never found their own band and remain in a bachelor group for life.

Similar to the stallions, young mares