



**SEE THE LIGHT – Advancing the Breeding Season for Early Foals**  
Press Release

Horse breeders face a dilemma every year as the breeding season nears. Should they breed for early foals or breed their mares to foal out in the spring and summer? The fact that all foals in the northern hemisphere share the same birthday—January 1st—contributes to this dilemma. If you are breeding a racehorse or perhaps a show horse, the closer your foal is born to January 1st, the closer its chronological age will be to the universal birthday for all horses.

For example, if a foal is born February 1st, it will be 11 months old when it is officially considered a year old. A foal born June 1st will only be 7 months old when it is officially considered to be a year old. In a competition for yearlings, say, in halter, the February foal will have an advantage in age and probably size. The June foal, if a racehorse who is running as a two-year-old, will only be 19 months of age when competing with the February foal who would be 23 months of age. This would potentially give the older foal an advantage in physical and mental development.

Therefore, many breeders choose to breed their mares early in the year. However, mares are seasonal breeders and their normal or physiologic breeding season is usually April to October. Mares come into heat in response to the lengthening of daylight that occurs in spring. As the days get longer, changes in melatonin secretion within the

brain ultimately stimulates the production of hormones that cause the mare to develop follicles and come into heat. Early in the spring, mares go through a “transitional” phase when they develop many small follicles on their ovaries that do not ovulate. Their behavior may be erratic as their hormonal systems “ramp up” for the breeding season. How, then, do these mares become pregnant early in the season while their hormonal system is just getting in gear?

The answer is light. Putting mares under lights late in winter will cause them to go through the transitional phase of their cycle in January and February instead of March and April. It takes mares at least sixty days of photoperiod stimulation for a mare in deep winter anestrus to first ovulate. Consequently, most farms start their mares under lights on December 1st.

The general start of the breeding season is usually around the 15th of February. Breeding any earlier, with a 340- to 350-day gestation length, may result in a foal being born in December, rather than January, which would make the foal a year old, legally, when it might only be days old chronologically. By starting mares under lights in December, they will have passed through the transitional stage of their annual cycle early, and their ovaries will therefore

respond as if it were May in the month of February.

In order to have an effective lighting protocol, mares must be exposed to 16 continuous hours of light every day. Many farms will set the lights on timers so that there is no error involved in forgetting to turn the lights on or off. In order to save on electricity, a program might have the lights go on at 7:00 am. The mares would then be turned outside by 10:00 am and brought back into the barn by 4:00 pm. The lights would be set to be on from 7:00 to 10:00 am (3 hours). The mares have from 10:00 am to 4:00 pm with ambient daylight (6 hours). The lights are then timed to stay on from 4:00 pm to 11:00 pm, when they automatically go out. This adds up to a total of 16 hours of light exposure. Some farms that don't keep mares in stalls have lights set up in paddocks to go on and off on a timer to ultimately provide the same amount of light.

A commonly asked question is how do you know how much light is enough? A good rule of thumb is if you can read a newspaper in the corner of the stall or the paddock when the light is on, it is adequate to provoke the desired response. A more specific technique would be to measure the intensity of light in all parts of the stall or paddock with a light meter (i.e. borrow one from an electrician).

It is recommended that mares be exposed to a minimum of 10 foot-candles of light during the 16-hour period. Note that leaving barn or paddock lights on for 24 hours a day is not advantageous. Allowing mares 8 hours of darkness is more physiologic and more effective.

Many breeders specifically do not want to breed for early foals—especially those that

live in northern states with severe weather early in the year. Others may not want early foals no matter where they live. It is certainly their choice as to when to begin breeding their mares. But for those breeders who desire early foals and want the best chance of getting mares pregnant early in the season—lights are the answer.

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