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Threat of Indian couch

Indian couch in the Burnett-Mary: Why we need to know more!

INDIAN couch (*Bothriochloa pertusa*), also known as Indian bluegrass, is an invasive naturalised grass found right across the eastern seaboard of Queensland.

It is a very successful grass that can invade both small and large spaces.

Whilst Indian couch tolerates grazing and provides good ground cover, concerns are that it is replacing desirable 3P (productive, palatable, perennial) grasses to form less productive 'monoculture' systems.

Despite its ability to arrest soil erosion, its shallower root system compared with desirable native or improved grasses is associated with reduced water infiltration, increased run-off, and greater susceptibility to drought making this grass a less reliable feed source.

The spread of Indian couch can also be a symptom of land degradation, with production losses a result of declines in land condition.

In the Burnett-Mary, Indian couch can be found in paddocks and road reserves and can be easily spread after wet periods and via farm machinery. It is believed to have spread since the early 80s, with very low levels observed in pastures at Gayndah in 1986.

On Brian Pastures Research Station in Gayndah, historical records of Indian couch were compared with more recent levels, showing Indian couch increased from zero to 18 per cent over the 80s and 90s, with a further increase to 32pc in 2018.

Indian couch has been observed further south of the Burnett-Mary along roadways in Surat and Roma districts.

What do producers think?

Some Burnett-Mary producers regard Indian couch as a nuisance grass that spreads rapidly. The issue of Indian couch is a double-edged sword.

On one hand, it is a source of feed for cattle but on the other hand, it grows less bulk than other pastures and threatens to reduce carrying capacity.

What is clear is that Indian couch can provide excellent ground cover and stabilise soil, and is a better option when compared to many other grasses found in the Burnett-Mary, such as African lovegrass, GRT, Grader grass, Chilean needle grass, Mexican feather grass, and green and blue couch. It is even known to out-compete creeping lantana.

What does the science reveal?

Controlled ageing trials conducted by the Tropical Weeds Research Centre, Charters Towers indicate Indian couch seed persists and remains viable for more than three years.

The University of Queensland (UQ) investigated pasture trends as related to different stocking rates. They found relationships for native 3P grasses but not for Indian couch. The proportion of Indian couch in the pasture could not be related to grazing strategy, suggesting grazing alone isn't enough to control Indian couch. In contrast, desirable native pasture species were affected by grazing strategy and preferred being rotationally grazed.

Production impacts are being quantified for Indian couch (left) relative to Black speargrass (right) at the Brian Pastures Research Station. Photo taken on May 22, 2019.

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Another study by UQ looked at the effects of fire on Indian couch seed relative to native Black speargrass. This preliminary work showed differential responses in germination and viability following exposure to heat and smoke treatments.

For Indian couch, there was both reduced heat tolerance and no stimulatory effect of plant-derived smoke on seeds compared to Black speargrass. It was speculated that the greater susceptibility of Indian couch to high temperatures is most likely attributed to seed morphology as it lacks a hard seed coat.

Where to from here?

Firstly, make sure you are managing the right grass! Indian couch can be easily mistaken for other tropical perennial grasses such as creeping bluegrass, Sheda and Angleton grass.

Adopting a combination of practices that are targeted at the management of both desirable and undesirable pasture species may be necessary.

The potential role of fire for controlling Indian couch has been implicated and could prove useful in reducing seed loads.

Management of desirable pasture species to ensure their survival in the pasture, such as through resting, will be essential for reducing opportunities for Indian couch invasion.

In situations where Indian couch has become the dominant species, options for management may need to focus on working with the grass rather than against it, such as increasing the productivity of Indian couch pastures with legumes or through a fertiliser regime, or otherwise by sowing competitive but more desirable grasses.

Over the next 12 months, 'best-bet' management guidelines will be developed for producers as part of a project led by the Department of Agriculture and Fisheries and jointly funded by Meat & Livestock Australia.

Both producer and research knowledge will be used to determine practical solutions.

For more information contact Dr Nicole Spiegel, Department of Agriculture & Fisheries, 0436 951 988.

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Raising poddy calves

Understand the challenges that come with raising poddy calves.

If the poddy calf is to survive, proper care during the first 24 hours is critical.

REARING a newborn calf can be extremely challenging and requires much patience and commitment.

The key to success is keeping the calf in a comfortable environment, well fed and free of sickness. Calves must be kept in a clean environment with access to a dry and covered area protected from the wind.

Newborn calves

Orphan calves often show signs of dehydration, depression, lack of appetite or scouring.

If the calf is to survive, proper care during the first 24 hours is critical.

It is essential for the newborn calf to receive colostrum within the first 36 hours of birth - either from the mother or artificial sources.

Colostrum provides passive immunity to disease and helps build up vitamin and mineral levels.

It is handy to have a bottle of colostrum in the freezer to feed newborn calves that may not have drunk from their mothers. Warm it up to 36 degrees before feeding and if you have ample supply, feed it for the first two days (normally up to 2L per feed), in the morning and evening.

Some milk replacers also contain colostrum.

Once the calf has received colostrum, it can be fed solely on whole milk or milk replacers.

Dehydrated calves

The calf should be rehydrated before getting any milk. Feeding a dehydrated calf with milk often results in scours and possibly death.

Electrolyte mixtures are commercially available or can be mixed at home from 1 teaspoon table salt, 1/2 teaspoon baking soda and 125mL glucose in 1.2L of water. Electrolytes should be fed for at least 24 hours before milk is given.

Once milk feeding has commenced, electrolytes should be fed to calves several hours after milk feedings and should never be mixed in with the milk or milk replacer.

Mixing electrolyte powder with the milk diet does not give a scouring calf the additional water required to rehydrate and can change digestion by altering the casein clot in the abomasum.

Under heat stress conditions, electrolytes should be given at an equal interval between milk feedings. For example, if calves are fed in the morning and evening, an electrolyte feeding should be offered at noon. If necessary, a second electrolyte feeding can be offered a few hours after the evening milk feeding.

Calculating electrolyte requirements

The amount of electrolyte solution needed by the calf to correct dehydration is calculated by multiplying the weight of the calf by the percentage dehydration.

As an example, the daily fluid requirement for a 30kg calf with 7 per cent dehydration is calculated as follows:

- Amount of electrolyte solution needed to correct 7pc dehydration = 30 7 100 = 2.1L per day.
- Amount of milk required to maintain hydration (10pc of body weight) = 30 10 100 = 3L per day.

Therefore, the estimated *total amount of fluid* (electrolyte + milk) = 5.1L per day.

> Colostrum provides passive immunity to disease and helps build up vitamin and mineral levels.

Tips for a successful calf-feeding program

- Milk replacers should contain at least 20pc protein and 10pc fat and no more than 10pc starch and sugars (sucrose). Milk replacers should be reconstituted and fed as directed by the manufacturers.
- Increasing the proportion of powder is often recommended for once-a-day feeding to reduce the total volume required.
- When rearing a large number of calves, it is best to draft them according to their feeding habit.
- Milk should be given in separate feeds in the morning and evening, preferably at a regular time. When calves are young, they need to be fed smaller amounts more often (every eight hours). As the calf gets older, one feed per day is acceptable - preferably in the morning with access to plenty of cool, clean water. Split feeding is ideal.
- It is essential to practice good hygiene at all times whilst rearing calves.
- Do not over-feed calves, especially during their first three weeks of life, as it may cause scouring. As a guide milk should be fed at 10pc of the calf's body weight per day.
- Start newborn and weak calves on 250mL of milk, five times a day for the first 24-48 hours.
- Do not suddenly change the quantity of milk being fed.
- Provide clean fresh water.
- As calves grow they will drink more, however, milk replacer is expensive. It is often cheaper to supplement the calf with pellets/grain. Make this available to calves all the time. They will gradually increase their intake of a grain supplement as they grow. This will also make them easier to wean.
- Solid feed such as good quality hay and concentrates can be introduced in limited amounts from one to two weeks of age.

For more information visit futurebeef.com.au.

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Technology to play a big role at Beef 2021

Camm Agricultural Group CEO and Beef Australia 2021 chairman Bryce Camm is a fourth-generation cattle producer.

THE Camm Agricultural Group is one of Queensland's largest family-run producers and operates at nine sites throughout the state.

They have beef cattle properties in North Queensland and Central Queensland and a feedlot outside Dalby on the Darling Downs.

"There have been many innovations that have allowed our family company to take what I call 'giant leaps forward' and achieve cost efficiencies in our production systems and maintain margins," Camm Agricultural Group CEO and Beef Australia 2021 chairman Bryce Camm said.

"These include helicopter mustering, the introduction of polythene to pipe water, the introduction of buffel grass into northern Australia and the breeding of tropically adapted cattle.

"On our properties at the moment, the AgTech we are investing in includes the conversion into solar to pump all our surface and bore water and GPS technologies in our tractors, headers and sprayers to minimise our inputs, such as fertilisers and chemicals.

"At the feedlot, we have invested heavily in connectivity ensuring we have high-speed wireless broadband from Dalby."

Mr Camm can see innovations coming in animal health monitoring, feeding efficiencies through the use of automated bunks, drones for mustering and microwave for grain processing, rather than steam flaking.

"The on-going support of Department of Agriculture and Fisheries (Queensland) in AgTech is welcome, as is the Queensland government's sponsorship of Beef 2021," he said.

"Queensland's agricultural industry continues to lead innovations for greater efficiencies and to meet consumer demands, and it's important we support our Agtech innovators as well as promote industry adoption.

"AgTech will form a big part of the offerings at Beef 2021, and we are proud to be presenting the Ken Coombe Tech Yards as part of the program.

"These Tech Yards will give us the opportunity to present the next game-changing innovations to the industry, and those attending can get hands-on with the technology."

The yards are named after Ken Coombe, the first Beef 2021 chairman who sadly passed away this year.

"His work at Stanbroke Pastoral Co and his contribution to beef breeding services have left a significant legacy for the northern beef industry," Mr Camm said.

Beef 2021 will be held in Rockhampton from May 2-8, 2021. Visit beefaustralia.com.au for more information.

Start planning your visit to Beef21 now. Photo by Department of Agriculture and Fisheries.

Beef 2021 gets the green light

BEEF Australia recently announced that Beef 2021 is going ahead in Rockhampton in May.

As a principal partner of the event, the Queensland government is thrilled to hear that Beef 2021 is on!

We'll have booths at the Sidney Kidman Pavilion and in the TechYards, showcasing regional initiatives, innovative ag-tech workshops and pop-up chat sessions.

Our Drought and Climate Adaptation Program (DCAP) team will be there to talk about ways to build resilience to drought and climate impacts that can help you manage financial risks while making important decisions around droughts and climate variability.

We'll also show you a range of tools and strategies to help manage degraded land and re-establish ground cover, plus new seminars around legumes for grass-fed beef production, pasture dieback research and drought and disaster management-just to name a few.

Tickets go on sale in February 2021.

Take steps to mitigate heat stress in your rams

AS WE approach the autumn joining season in Queensland, it's critical that sheep producers consider the impact of heat stress on ram fertility.

Effective ram management in the seven to eight weeks prior to joining is important to maximise ram fertility and productivity.

Due to husbandry advantages, industry has widely adopted shorter joining periods of approximately six weeks or less, making optimum ram fertility an even greater priority.

Veterinarian and Leading Sheep regional coordinator for the south region Dr Noel O'Dempsey, said that if overheated, rams can be rendered infertile for seven weeks.

"A ram that has suffered from heat stress before joining could successfully serve ewes for up to three weeks with stored mature sperm, as it's less likely to be affected than sperm in the early development phases," Dr O'Dempsey said.

"However, there will be a seven-week timeframe before new viable sperm is produced, which in shorter joining periods can create significant productivity problems for producers.

"Even if rams are joined at 2 per cent for maiden ewes, on average, they must find, tease and breed with approximately 50 ewes in the first cycle, so effective ram management leading up to joining is essential."

As both a producer and veterinarian, Dr O'Dempsey said there are several ram management practices that should be implemented to maximise the chance of successful joining.

Rams in a paddock located only a short distance from the yards.

Signs of heat stress

- Mild - mild to fast panting, but with a closed mouth.
- Moderate - fast panting, with rapid chest movements progressing to mouth slightly open, but the tongue is not extended beyond the lips.
- Severe heat stress - rapid, open-mouth panting, the neck extended, head held up and tongue extended.

Research shows increased heat stress can impact flock productivity.

"Rams should be palpated at least twice annually, well ahead of joining. As some rams age, they develop varicoceles above the testicle which can interfere with heat exchange and cooling. These rams should be culled and replaced," he said.

"To further protect rams from heat stress, they should be shorn at least one month ahead of joining to mitigate the impact of handling stress on the ram and to offer some wool for insulation and protection from heat. Optimum insulation is only seen when the fleece length reaches 30 to 40 millimetres. Shearing is critical to reducing flystrike as well, which in severe cases can render a ram infertile.

"Keep your ram paddock for rams only to avoid unnecessary mustering. When taking rams out for joining, consider trucking them or if walking, go slowly and be vigilant in monitoring for signs of heat stress.

"Watching breathing is the most effective way to monitor this, as 65pc of heat loss in sheep occurs through panting."

For more information and to subscribe to the Leading Sheep monthly 'Around the Camp' eNewsletter go to leadingsheep.com.au.

Managing ewes in the hot months

HEAT stress on ewes can significantly impact lambing success.

An increase in metabolic heat production during gestation can predispose ewes to heat stress, which in early pregnancy can result in abortion or reabsorption of the foetus.

Leading Sheep regional coordinator Dr Noel O'Dempsey, said ewes should be mustered and handled gently in the heat.

"Lambs are also highly susceptible to heat," he said.

"It's critical that lambs and ewes have easy access to water, but be sure to place bricks or blocks in troughs so lambs can easily get out if they fall in."

Help guide the future of Qld's sheep

WHAT does the Leading Sheep Producer Advisory Panel (PAP) offer you as a Queensland sheep and wool producer?

You get to meet with other forward-thinking industry leaders from right across the state, gain access to the latest sheep and wool industry findings and help guide the future investment and direction of Leading Sheep.

PAP membership is a small commitment. The panel meets only two to three times a year, using a mix of face-to-face meetings and teleconferencing.

To nominate, submit your short, no more than one page, expression of interest at leadingsheep.com.au.