CYDECTIN 0.5%

Pour-On for Cattle

CATTLE WORM-CONTROL STRATEGIES

As concentrate feed costs rise, it is even more important to achieve high growth rates at pasture in the spring and summer. Feed conversion efficiency will be maximised if parasites are well controlled. The following worming strategies are recommended:

Spring-calving beef herds

Most of the over-wintered worm larvae are ingested and killed in immune cows.

First grazing season	Second grazing season
Consider a dose during August/September, depending upon likely challenge. Dose again at housing.	Calves are susceptible to parasitic gastroenteritis during their second grazing season. Dose throughout the grazing season, based upon risk of lungworm and gut worm.

Dairy herds

Over-wintered larvae ingested by calves in the spring and early summer develop to adult worms, which are the major source of infective larvae on the pasture to cause disease during August/September.

Dairy heifers first grazing	Dairy heifers second grazing season	Adult dairy cows
Dose throughout grazing season and at housing.	Calves may not acquire immunity, so they remain susceptible to disease during the following grazing season. Anthelmintic treatments may be necessary during the animals' second grazing season and at housing.	Adult dairy cows can pick up a worm burden during the grazing season. For more details on worming dairy cows, please turn over to next page.

FOR BEEF CATTLE

Benefits of the different approaches

Strategic pour-on
Flexible – no need to set stock animals.
Easy-to-use Pour-On approach.
Short meat withdrawal.

Unique active ingredient
moxidectin molecule

Longest dosing interval – 8–10 weeks
with shortest withdrawal – 14 days

Lice-free guarantee
from housing to turnout

Rainfast formulation
makes dosing easier

Environmental impact
means minimal impact on dung beetle populations

Dosing interval

Pour-on product	Dosing interval	Meat withdrawal
CYDECTIN	8-10 weeks*	14 days

moxidectin
CYDECTIN®
Pour On for Cattle

Lice-free guarantee

Animals treated with CYDECTIN Cattle or CYDECTIN TriclaMox Pour-On from 5 weeks pre-housing to 4 weeks post-housing will remain free of lice from housing to turnout, so long as the management conditions are met.

If lice persist following treatment and if the management conditions have been met, Zoetis will provide product free of charge to retreat your cattle.

WHY CONTROL WORMS IN DAIRY CATTLE?

90% of cows are infected with stomach worms

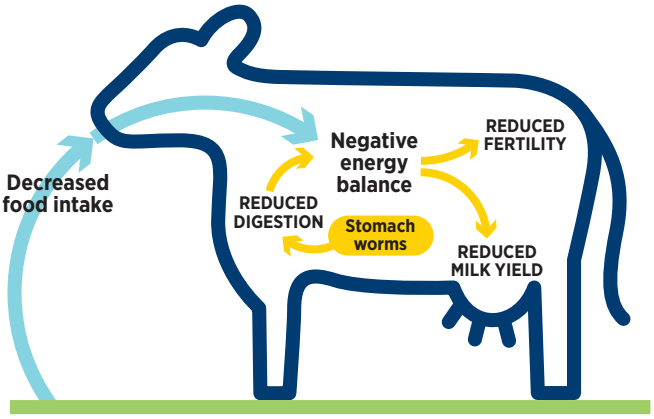
All grazing cattle, including heifers and adults, are susceptible to infection by gut worms. Although adult dairy cows rarely show overt clinical signs of disease, over 90% can be infected.[1,2] Stomach worm (*Ostertagia ostertagi*) is much more frequently identified in dairy cows than any other worm species.[1,2]

The risk of exposure is influenced by the duration of the grazing season and time spent grazing each day.[3] However, even modest access to pasture can result in cattle being exposed to stomach worms.

Worms reduce milk yield

Worms reduce appetite. The presence of GI worms in adult cows has been shown to reduce grazing time and herbage intake.[4]

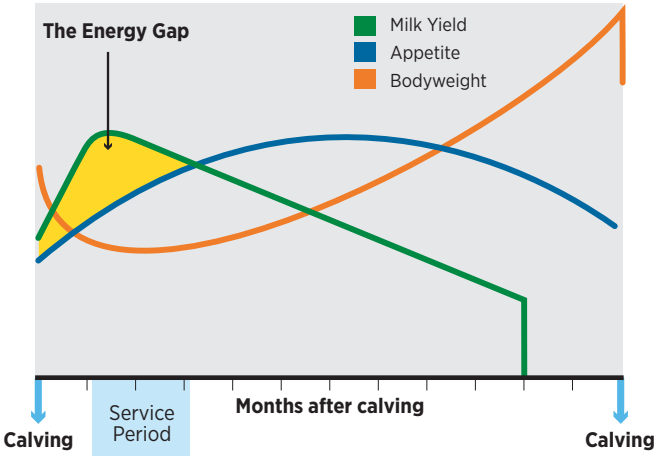
Treating worms may improve the ability of cows to digest forage and reduce the nutritional cost to the cows of maintaining an immune response to worms.[5,6,7]



Yield response to treatment

Milk yield response following treatment in recent studies in pastured dairy herds is around 1 kg/cow per day.[8]

Milk composition (percentage of fat and protein) is maintained.[6,7] Improvements in reproductive performance have been reported but this remains uncertain.[8]



1. Agneessens, J *et al* (2000) Veterinary Parasitology 90, 83-92
2. Borgsteede, FHM *et all* (2000) Veterinary Parasitology 89, 287-296
3. Bennema, SC *et al* (2010) Veterinary Parasitology 173, 247-254
4. Forbes, AB *et al* (2004) Veterinary Parasitology 125, 353-364
5. Gibb, MJ *et al* (2005) Veterinary Parasitology 133, 79-90
6. Colditz, IG (2008) Parasite Immunology 30, 63-70
7. Charlier, J *et al* (2010) Preventive Veterinary Medicine 93, 147-152
8. Charlier, J *et al* (2009) Veterinary Parasitology 164, 70-79

WHEN TO TREAT DAIRY COWS

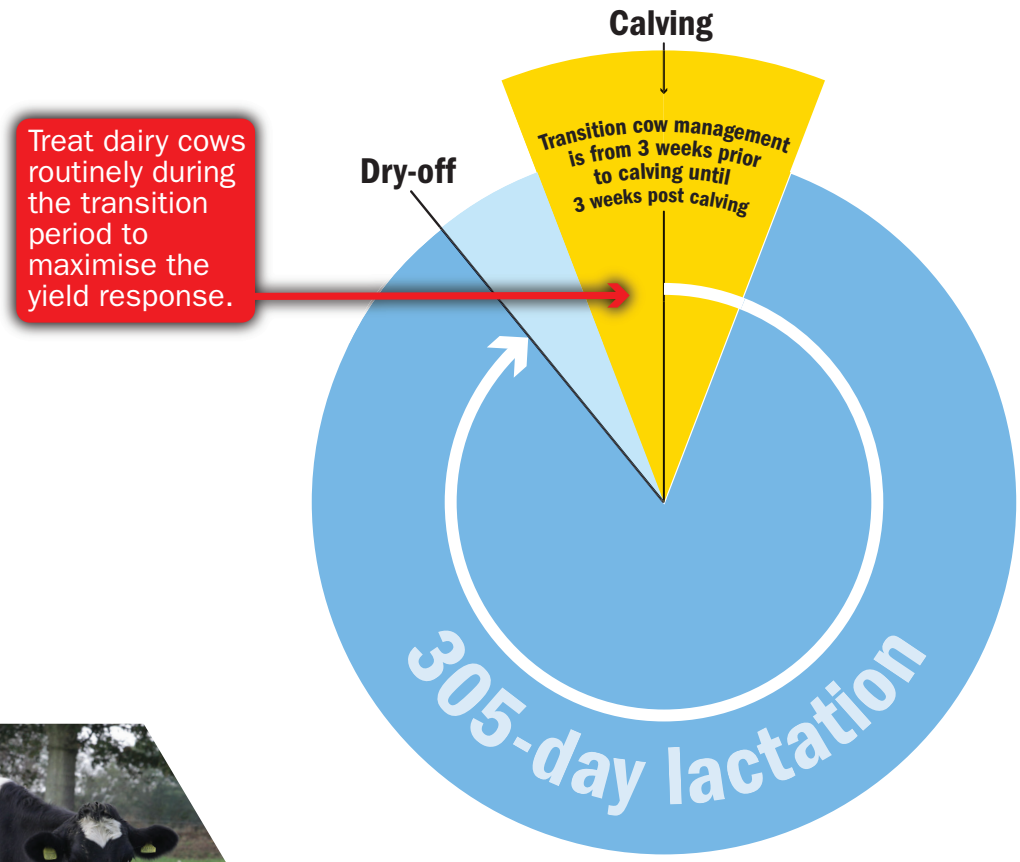
Which herds respond to treatment?

The level of antibodies to stomach worms (*Ostertagia*) in bulk-tank milk samples is a useful indicator tool. Zoetis can provide bulk-tank milk tests which can be used to identify herds which may respond to treatment. Anthelmintic treatments in adult cows should be targeted to those herds with a high larval challenge and a reduced productivity.

When to treat

Milk yield responses have been obtained when cattle were dosed at calving, mid-lactation or at drying off, independent of calving season. The greatest response to treatment will occur in cattle with a high level of exposure to stomach worms and the longest duration of lactation remaining.

It is recommended that to maximise the milk yield response to treatment, animals are wormed pre-calving, during the transition cow period, so that they can benefit throughout their entire lactation.



FOR DAIRY COWS

CYDECTIN Pour-On for Cattle now has a claim for use in dairy cows

It provides:

- The longest persistency against the key worms that affect dairy performance: 35 days against stomach worm (*Ostertagia*) and 42 days against lungworm (*Dictyocaulus*)
- A cost-effective alternative for dairy farmers
- Maximum financial return from treatment when used pre-calving

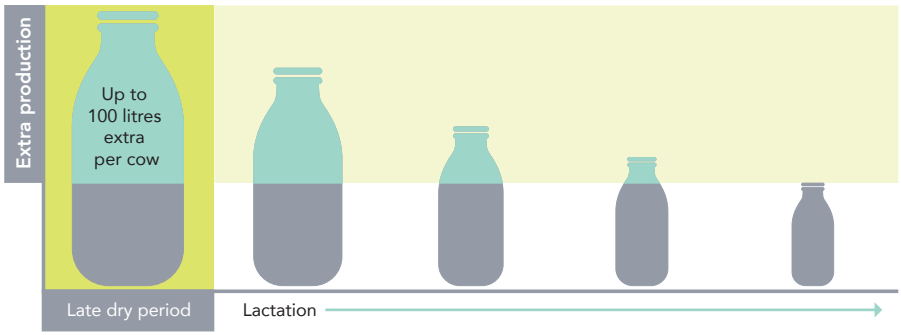
Worms reduce milk yield

Worms reduce appetite and the ability of cows to digest forage[1,2].

Yield response to treatment

In recent studies in pastured dairy herds, the milk yield response following treatment is around 1kg/cow per day[3].

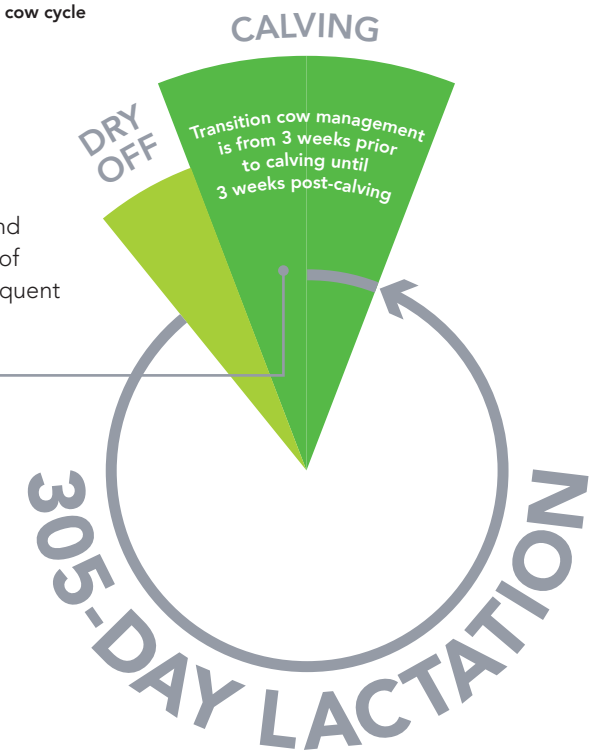
Worm early to maximise returns



Time of worming in dairy cow cycle

Treat in the late dry period to maximise financial return

Current knowledge indicates the financial benefit from worming is maximised when treatment is applied around calving[4]. Treatment supports the cow in the beginning of lactation and increases peak production and the subsequent lactation curve.



Treat dairy cows routinely during the transition period to maximise the yield response

1

Milk yield response is greater

The daily milk yield response to treatment is greater when cows are treated around calving[5].

2

Milk yield response lasts longer

The duration of the milk yield response to treatment is longer because it has the potential to occur across the entire 305-day lactation; the milk yield response to a treatment applied during lactation only lasts for the remainder of the lactation period[4,6].

3

Opportunity to improve reproductive performance

Improvements in reproductive performance can occur[3,4].

The 6-day milk withdrawal means that CYDECTIN Pour-On can be easily included into your pre-calving dry cow management routine to maximise financial returns

	Time of treatment	
	End of dry period	Mid-lactation (day 150)
Milk yield response to treatment (kg/d)[a]	0.96	0.49
Increase in yield across lactation (kg)*	175.68	76.11
Difference (kg)	+99.57	-
Difference x 100-cow herd (kg)	+9,957	-

Based on:
Charlier, J *et al.*, (2012): Journal of Dairy Science 95, 2977-2987.
Forbes, A *et al.*, (2008): Veterinary Parasitology 157, 100-107.

This is an example only to illustrate the benefits of treatment during the dry period compared with treatment during lactation. The milk yield response to treatment depends on multiple factors, including the level of exposure to stomach worms.

a Average milk yield response 0.96kg/d decreasing by 0.00315 kg/d for each day in milk (duration of lactation preceding treatment).

* A conservative approach is adopted: the duration of the specified milk yield response to treatment is the number of days until the end of lactation, with a maximum duration of 6 months. A 305-day lactation period is assumed.

Bulk tank milk tests

Zoetis offers a bulk tank milk testing service to farmers through veterinary medicine prescribers:

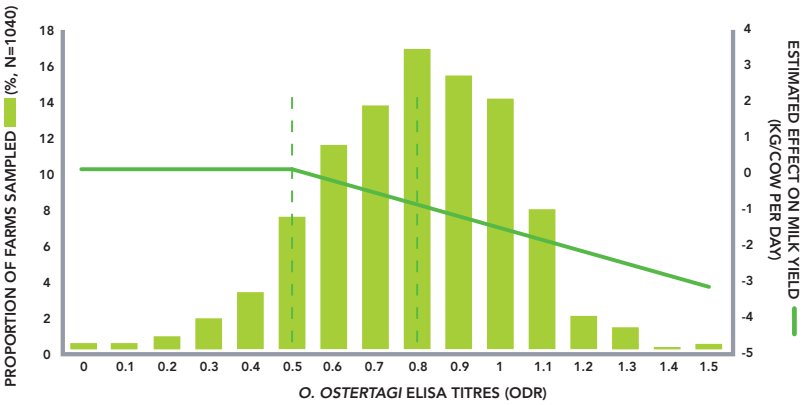
- The results can be used to predict the milk yield response to treatment
- This helps to ensure treatment is targeted to the herds which can benefit most

2014 cumulative results

Since the testing scheme was launched in 2011, 1040 samples have been collected to date. The test results revealed 92% of herds with ODR >0.5 had the potential to benefit from a greater yield by following a wormer programme.

59% of herds sampled with ODR ≥0.8 had the opportunity to increase yield substantially by 1kg/cow per day or more.

Guide to interpretation of milk test results (ODR) in relation to potential impact on individual daily milk yield in dairy herds



1. Forbes, AB *et al.*, (2004), Veterinary Parasitology 125, 353-364. 2. Gibb, MJ *et al.*, (2005), Veterinary Parasitology 133, 79-90. 3. Charlier, J *et al.*, (2009), Veterinary Parasitology 164, 70-79. 4. Charlier, J *et al.*, (2012), Journal of Dairy Science 95, 2977-2987. 5. Charlier, J *et al.*, (2010), Preventive Veterinary Medicine 93, 147-152. 6. Nødtvedt, A *et al.*, (2002), Veterinary Parasitology 105, 191-206.