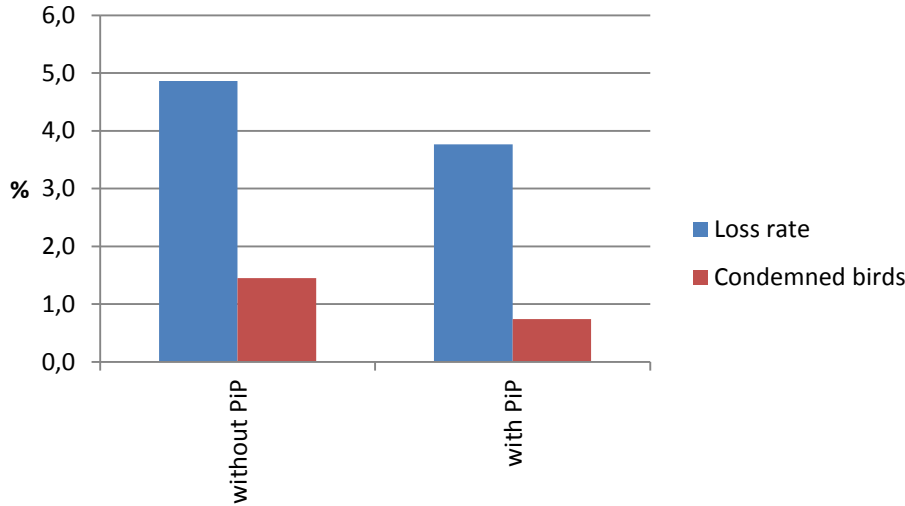
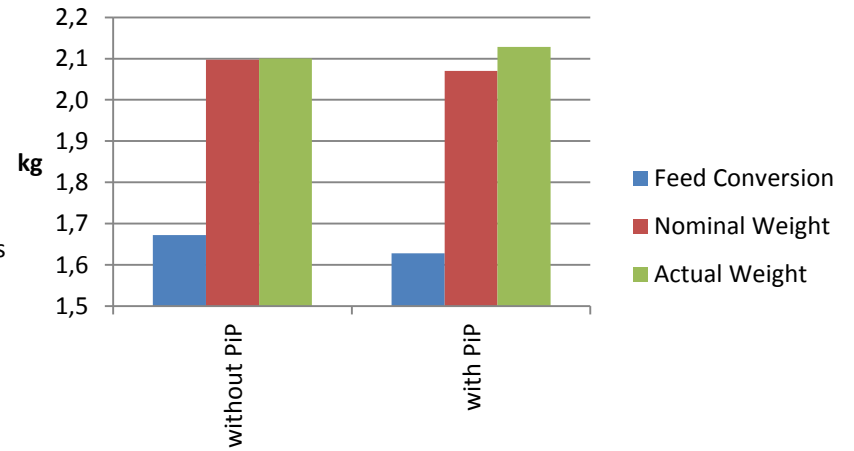


# Summary of all Farms (PiP Use)

## Mortality and Condemned Birds



## Feed Efficiency / Weight



	Cycles with antibiotic use	Cycles without antibiotic use	Cycles with disinfection	Cycles without disinfection	Campylobacter not detected *	Campylobacter detected *
<b>Without PiP</b> 46 Cycles ca. 655'000 birds	17 <b>= 37 %</b>	29	46 <b>= 100 %</b>	0	11	30 <b>= 73 %</b>
<b>With PiP</b> 71 Cycles ca. 1'050'000 birds	6 <b>= 8 %</b>	65	17 <b>= 24 %</b>	54	43	9 <b>= 17 %</b>

\* This analysis does not exist for all integrators corresponding to the sum does not correspond to the number of cycles.

## Use of PIP in poultry production

These statistics document the achievements and performance changes from Swiss poultry growers who used PiP for an average of one year. This documentation can also be found [www.pip-probiotics.ch](http://www.pip-probiotics.ch)

The data were taken from the slaughterhouse input and the production cost accounting documents provided by the growers

### CONCLUSION OF THE FIELD EXPERIMENT- OBSERVATIONS BY GROWERS THAT USED PIP PRODUCTS

- Animal losses were reduced
- Feed efficiency was improved
- There was a 50 % reduction in Campylobacter occurrence from historical levels
- Antibiotic use was reduced
- Disinfectant use was reduced
- The use of PIP improved results on a long-term basis with no loss in efficacy over time.

#### **Note about Campylobacter:**

The average occurrence of Campylobacter in Switzerland over the whole year is 34%. With the use of PIP the rate of Campylobacter occurrence fell to 17%.

Almost all of the companies used PIP for an entire year, therefore seasonal variations in Campylobacter are accounted for.

It should be noted that the style of poultry housings which contribute to a high Campylobacter load are common, so the the reduction in occurrence is particularly significant.

#### **Note about the use of antibiotics:**

Before the PiP application the growers used antibiotics during 37% of the cycles. This was in spite of a large cleaning and disinfection effort to improve the situation. With the use of PiP the use of antibiotics was reduced to 8%. The Swiss poultry industry has a goal to reduce antibiotic use below 10% of poultry cycles. This goal could be achieved with PiP.

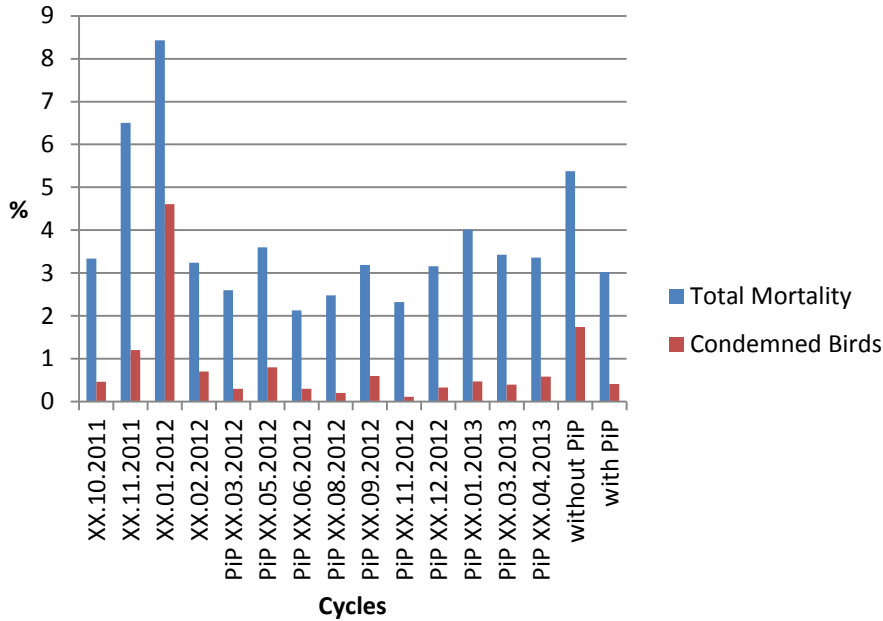
There are many external factors during the poultry cycles that affected the results (chick quality, climate, etc.), and during the period of the study there were over 70 reports of these factors that, while they clearly adversely affected the results, were included.

Following are the results by farm from all the companies that made their data available to the survey.

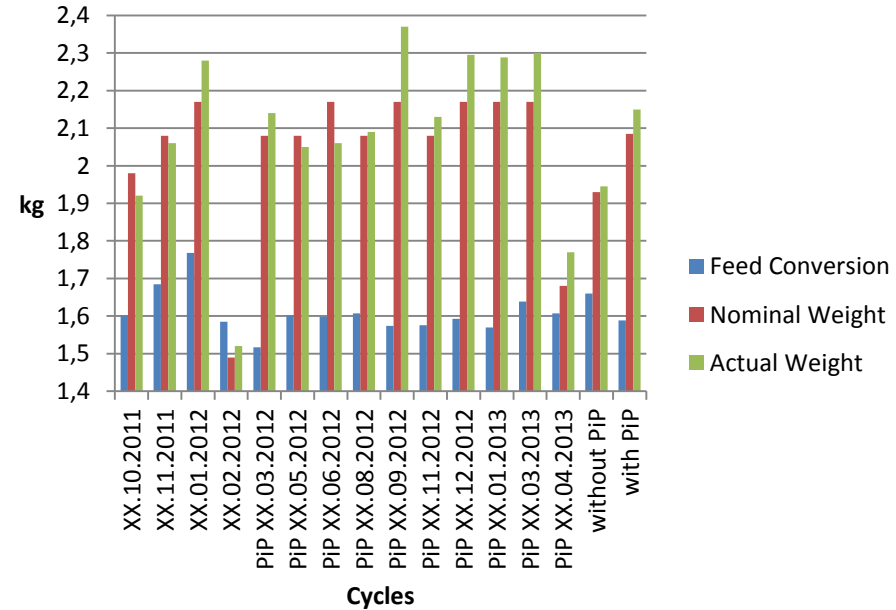
\*The term Kombi-Mast refers to the practice of slaughtering 1/3 of the birds at 31 days and the balance at 37 days.

# Farm A

## Mortality and Condemned Birds



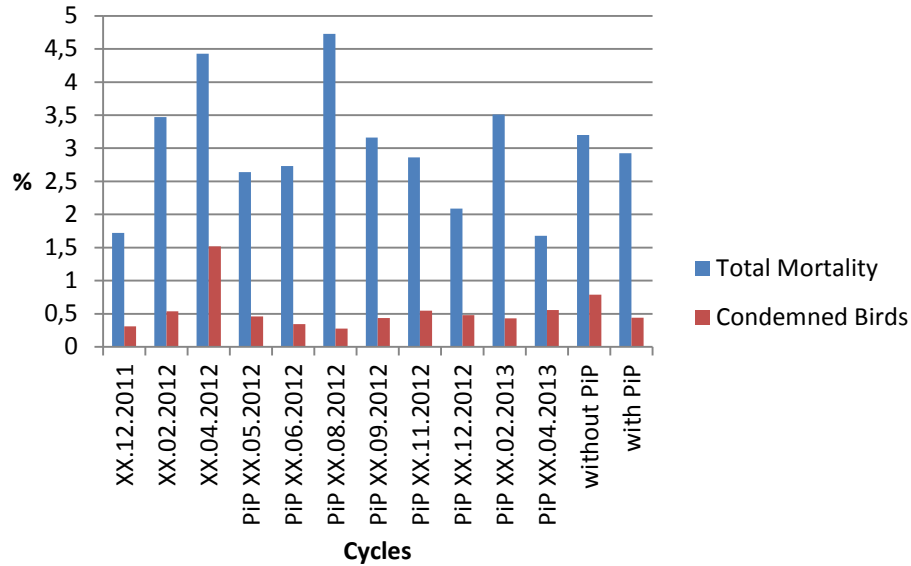
## Feed Efficiency / Weight



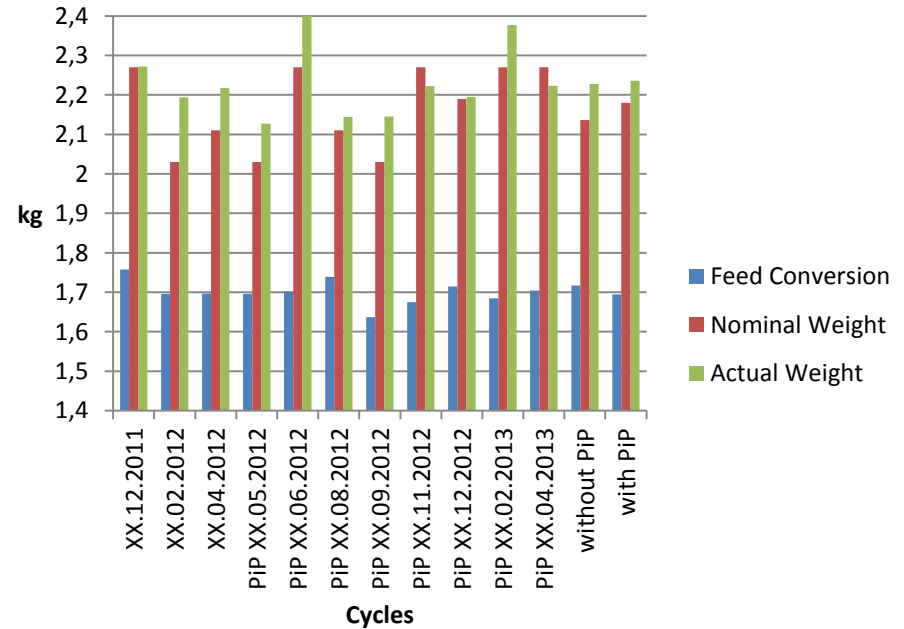
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 11'000 Birds
XX.10.2011	No AB	Yes	No	Short
XX.11.2011	Antibiotics	Yes	No	Normal
XX.01.2012	No AB	Yes	No	Normal
XX.02.2012	No AB	Yes	Yes	Ultra short
XX.03.2012 PiP	No AB	No.	No	Kombi
XX.05.2012 PiP	No AB	No.	Yes	Kombi
XX.06.2012 PiP	No AB	No.	No	Normal
XX.08.2012 PiP	No AB	No.	Yes	Normal
XX.09.2012 PiP	No AB	No.	Yes	Normal
XX.11.2012 PiP	No AB	No.	No	Normal
XX.12.2012 PiP	No AB	No.	No	Normal
XX.01.2013 PiP	No AB	No	No	Normal
XX.03.2013 PiP	No AB	No	No	Normal
XX.04.2013 PiP	No AB	No	No	Ultra short

# Farm C

## Mortality and Condemned Birds



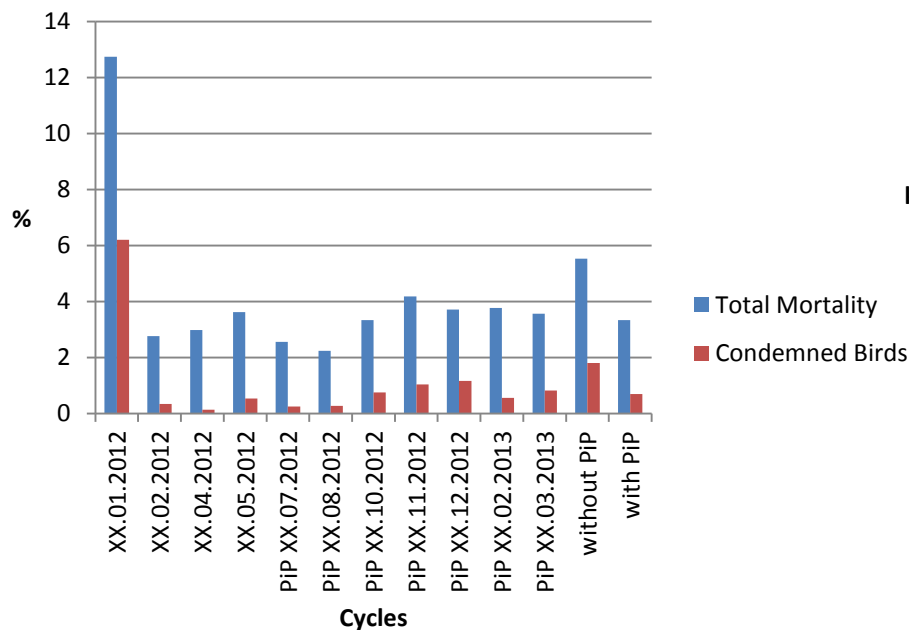
## Feed Efficiency / Weight



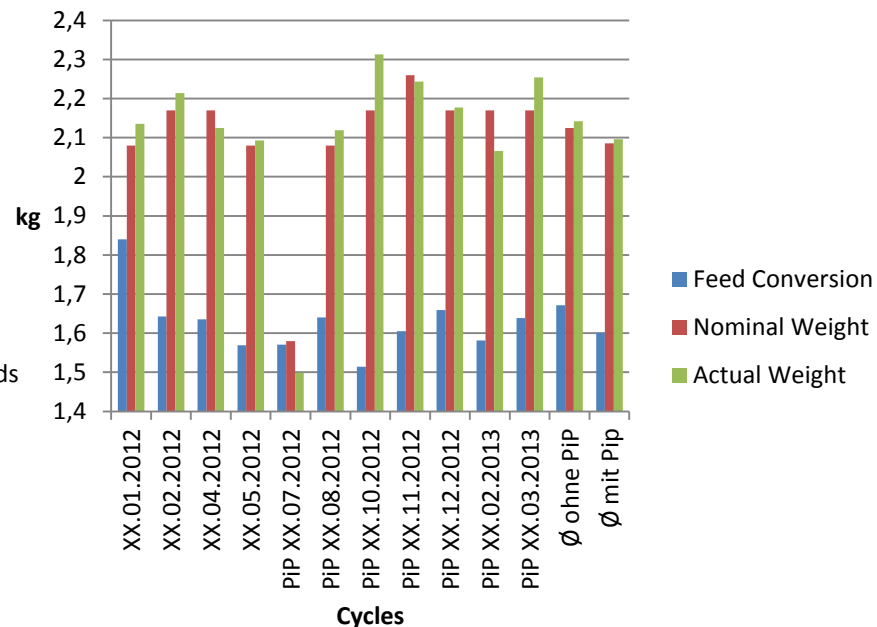
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* =17'000 Birds
XX.12.2011	No AB	Yes	n.v.	Kombi
XX.02.2012	No AB	Yes	n.v.	Kombi
XX.04.2012	No AB	Yes	n.v.	Kombi
XX.05.2012 PiP	No AB	No.	n.v.	Kombi
XX.06.2012 PiP	No AB	No.	n.v.	Kombi
XX.08.2012 PiP	No AB	No.	n.v.	Kombi
XX.09.2012 PiP	No AB	No.	n.v.	Kombi
XX.11.2012 PiP	No AB	No.	n.v.	Kombi
XX.12.2012 PiP	No AB	Yes	n.v.	Kombi
XX.02.2013 PiP	No AB	Yes	n.v.	Kombi
XX.04.2013 PiP	No AB	Yes	n.v.	Kombi

# Farm F

## Mortality and Condemned Birds



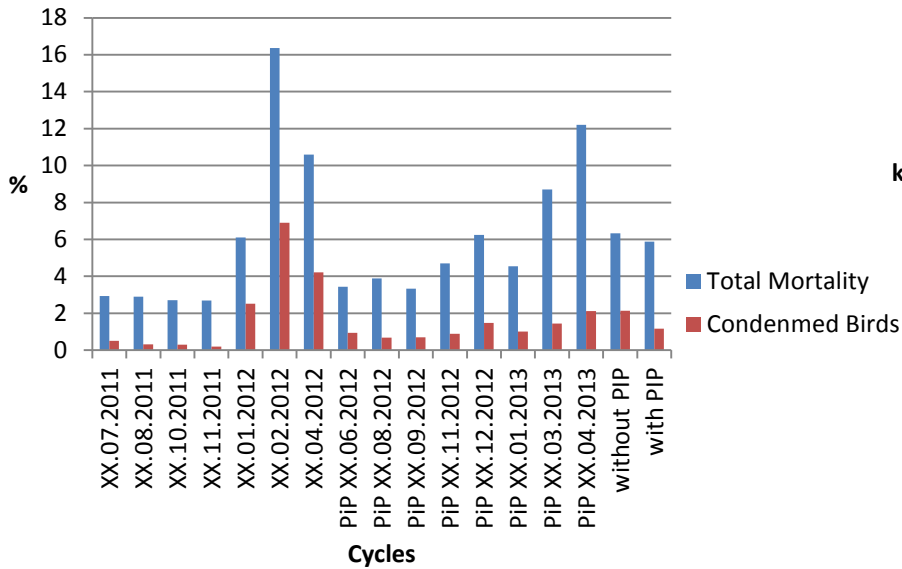
## Feed Conversion / Weight



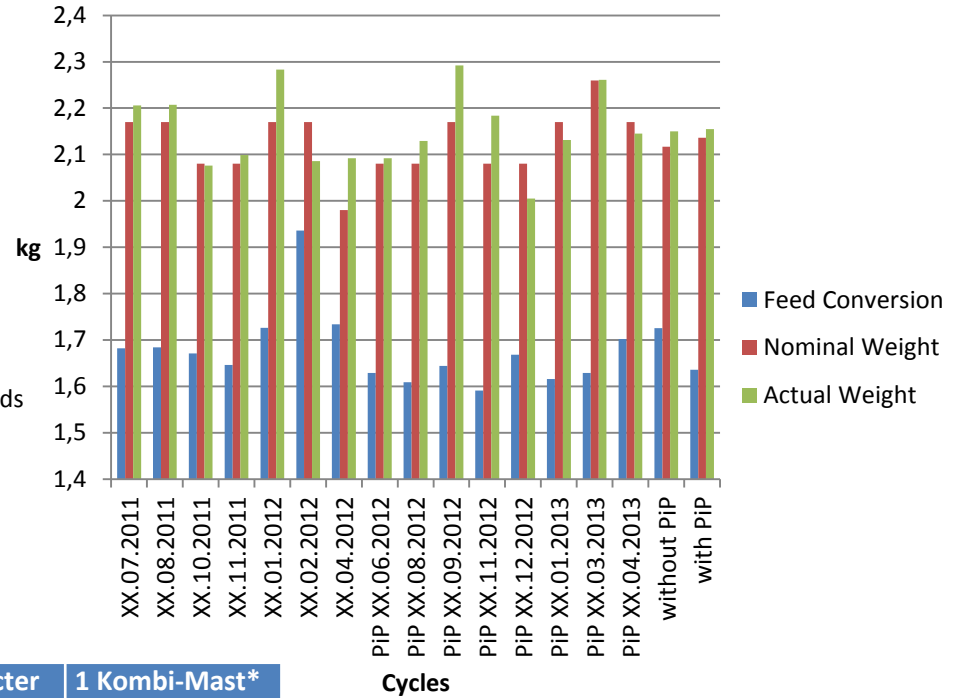
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 23'000 Birds
XX.01.2012	Antibiotics	Yes	Yes	Kombi
XX.02.2012	Antibiotics	Yes	Yes	Kombi
XX.04.2012	Antibiotics	Yes	Yes	Kombi
XX.05.2012	No AB	Yes	Yes	Normal
XX.07.2012 PiP	No AB	No.	No	Ultra short
XX.08.2012 PiP	No AB	No.	Yes	Normal
XX.10.2012 PiP	No AB	No.	No	Normal
XX.11.2012 PiP	No AB	No.	Yes	Kombi
XX.12.2012 PiP	No AB	No.	No	Kombi
XX.02.2013 PiP	Antibiotics	No.	No	Kombi
XX.03.2013 PiP	Antibiotics	No.	Yes	Kombi

# Farm G

## Mortality and Condemned Birds



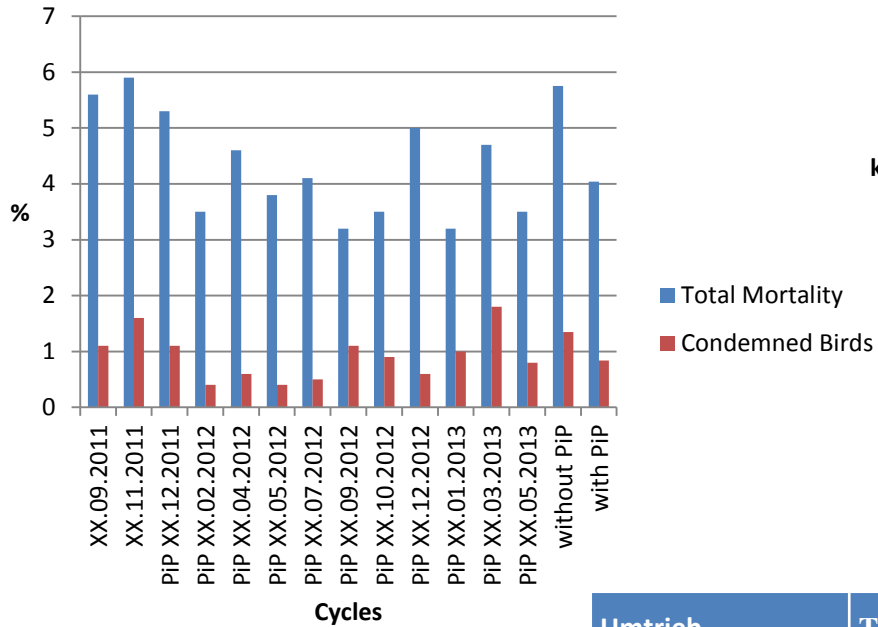
## Feed Conversion / Weight



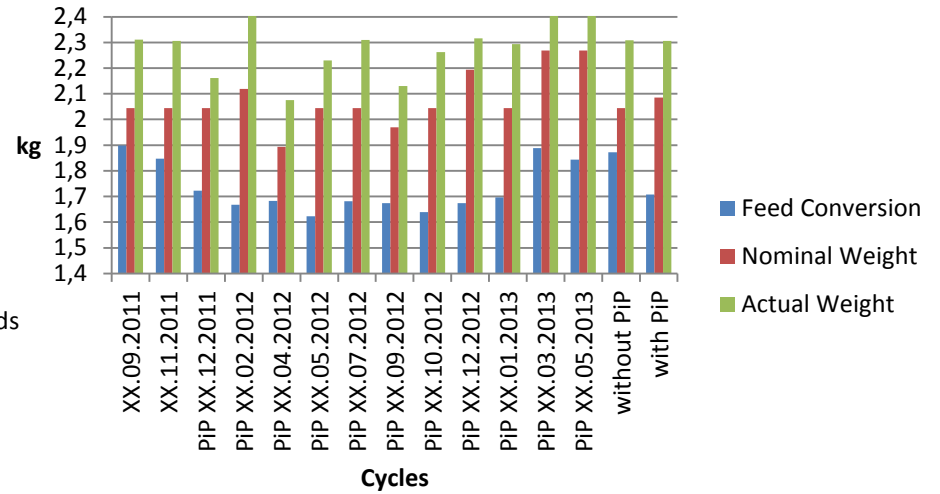
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 17'000 Birds
XX.07.2011	Antibiotics	Disinfection	Yes	Kombi
XX.08.2011	No AB	Disinfection	Yes	Kombi
XX.10.2011	No AB	Disinfection	Yes	Kombi
XX.11.2011	Antibiotics	Disinfection	No	Kombi
XX.01.2012	Antibiotics	Disinfection	Yes	Kombi
XX.02.2012	No AB	Disinfection	Yes	Kombi
XX.04.2012	Antibiotics	Disinfection	No	Short
XX.06.2012 PiP	No AB	No.	Yes	Kombi
XX.08.2012 PiP	No AB	No.	Yes	Kombi
XX.09.2012 PiP	No AB	No.	Yes	Kombi
XX.11.2012 PiP	No AB	Disinfection	No	Kombi
XX.12.2012 PiP	No AB	No.	No	Kombi
XX.01.2013 PiP	No AB	Disinfection	No	Kombi
XX.03.2013 PiP	No AB	Disinfection	No	Kombi
XX.04.2013 PiP	No AB	No.	No	Kombi

# Farm I

## Mortality and Condemned Birds



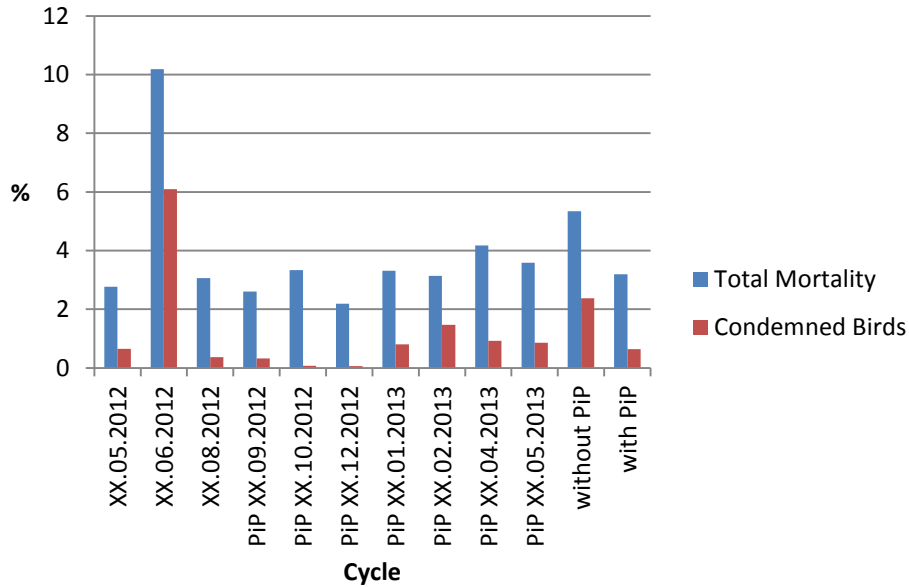
## Feed Conversion / Weight



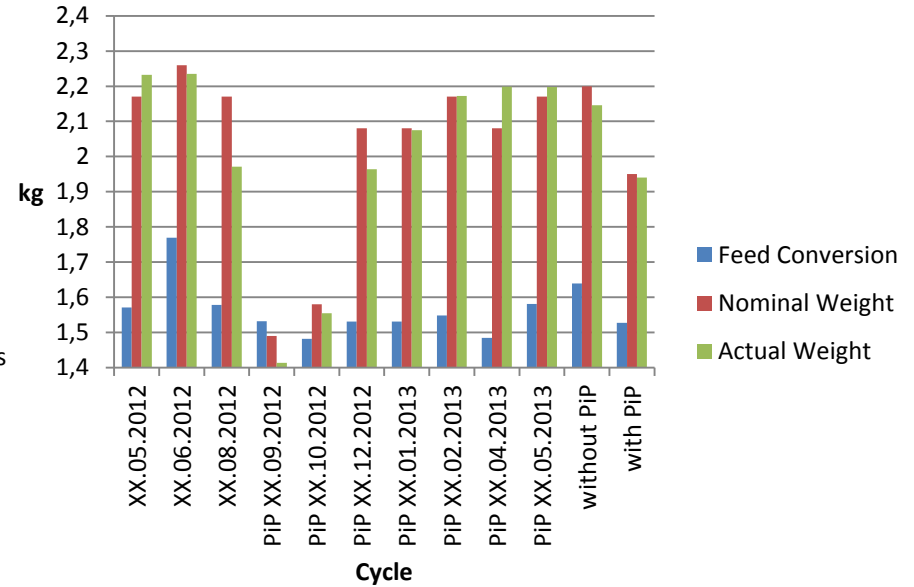
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 15'800 Birds
XX.09.2011	Antibiotics	Disinfection	n.v.	Kombi
XX.11.2011	No AB	Disinfection	n.v.	Kombi
XX.12.2011 PiP	No AB	Disinfection	n.v.	Kombi
XX.02.2012 PiP	No AB	Disinfection	n.v.	Kombi
XX.04.2012 PiP	No AB	Disinfection	n.v.	Kombi
XX.05.2012 PiP	No AB	Disinfection	n.v.	Kombi
XX.07.2012 PiP	No AB	No.	n.v.	Kombi
XX.09.2012 PiP	No AB	Disinfection	n.v.	Kombi
XX.10.2012 PiP	No AB	No.	n.v.	Kombi
XX.12.2012 PiP	No AB	No.	n.v.	Kombi
XX.01.2013 PiP	No AB	No.	n.v.	Kombi
XX.03.2013 PiP	No AB	No.	n.v.	Kombi
XX.05.2013 PiP	No AB	No.	n.v.	Kombi

# Farm M

## Mortality and Condemned Birds



## Feed Conversion / Weight

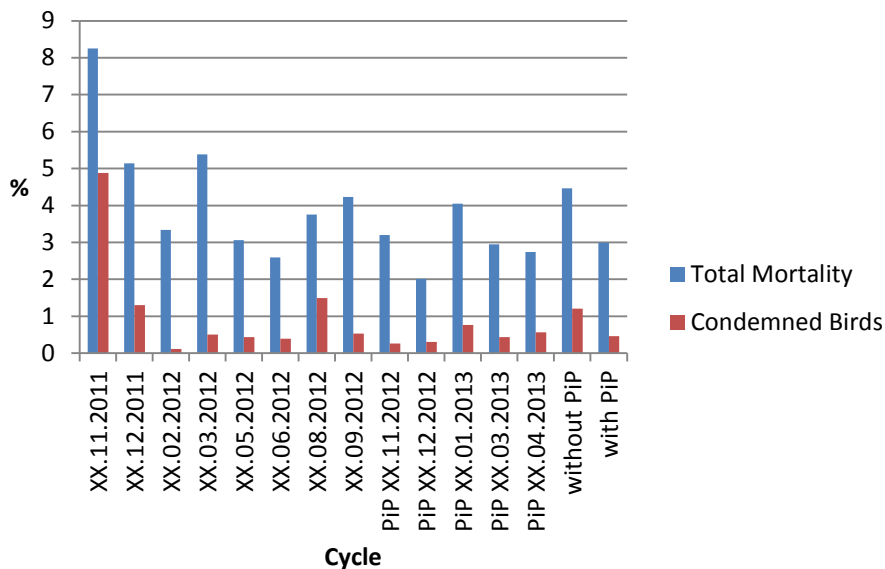


Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 11'000 Birds
XX.05.2012	No AB	Disinfection	Yes	Kombi
XX.06.2012	No AB	Disinfection	Yes	Normal
XX.08.2012	No AB	Disinfection	Yes	Normal
XX.09.2012 PiP	No AB	No.	No	Ultra short
XX.10.2012 PiP	Antibiotics	No.	No	Ultra short
XX.12.2012 PiP	No AB	No.	No	Normal
XX.01.2013 PiP	No AB	Yes	No	Kombi
XX.02.2013 PiP	No AB	Yes	No	Kombi
XX.04.2013 PiP	Antibiotics	Yes	No	Normal
XX.05.2013 PiP	No AB	Yes	No	Kombi

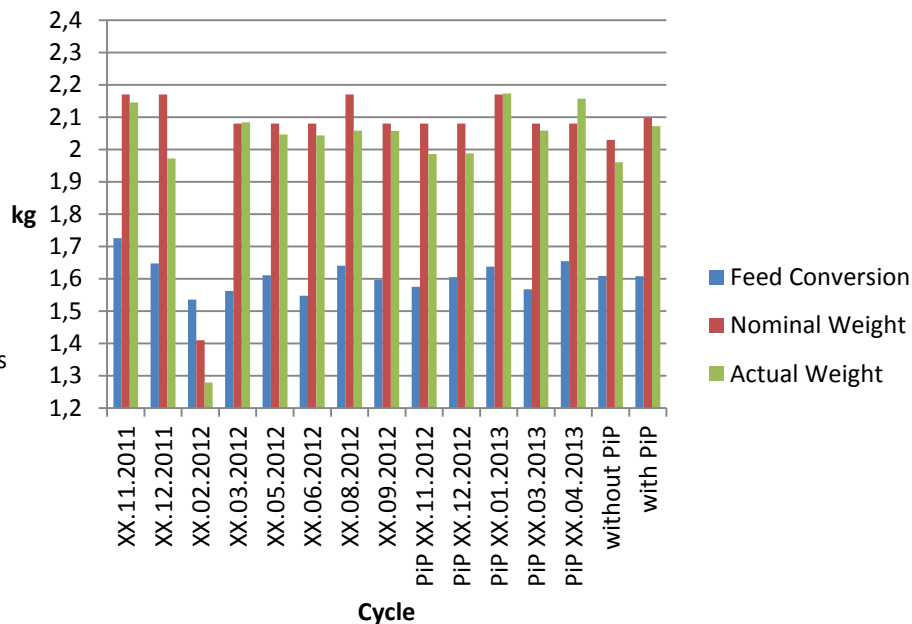


# Farm N

## Mortality and Condemned Birds



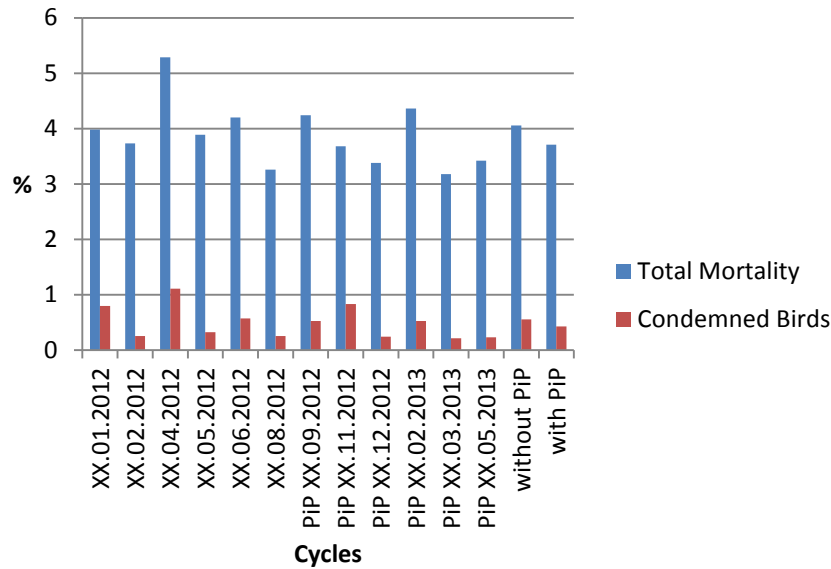
## Feed Conversion / Weight



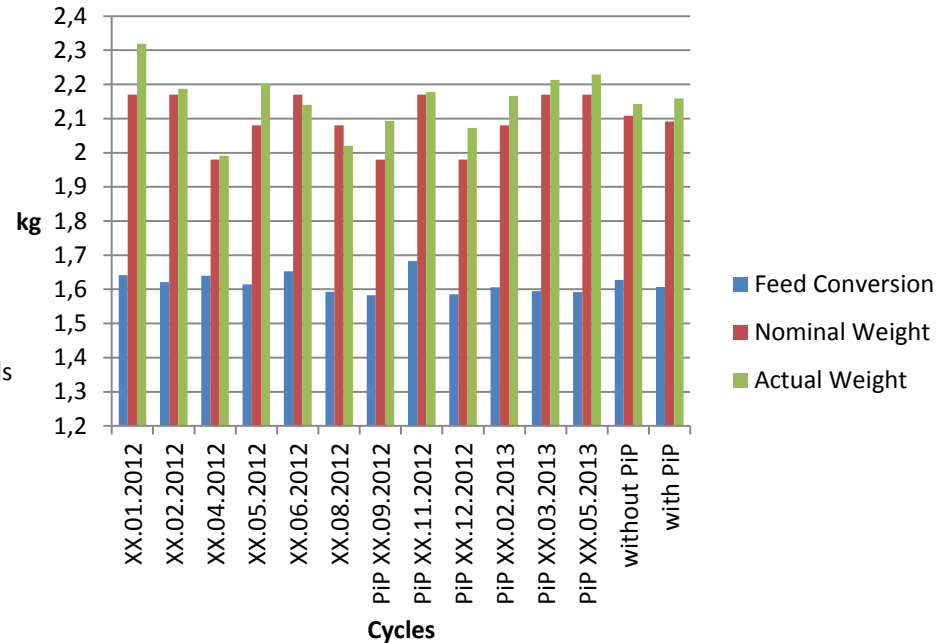
Umtrieb	Treatment	Disinfection	Campylobacter Detected	1 Kombi-Mast* = 11'500 Birds
XX.11.2011	No AB	Disinfection	Yes	Kombi
XX.12.2011	Antibiotics	Disinfection	Yes	Kombi
XX.02.2012	Antibiotics	Disinfection	No	Ultra short
XX.03.2012	Antibiotics	Disinfection	Yes	Kombi
XX.05.2012	No AB	Disinfection	Yes	Kombi
XX.06.2012	No AB	Disinfection	Yes	Normal
XX.08.2012	No AB	Disinfection	Yes	Kombi
XX.09.2012	Antibiotics	Disinfection	Yes	Kombi
XX.11.2012 PiP	No AB	Disinfection	No	Kombi
XX.12.2012 PiP	No AB	No.	No	Kombi
XX.01.2013 PiP	No AB	No.	No	Kombi
XX.03.2013 PiP	kein AB	No.	No	Kombi
XX.04.2013 PiP	kein AB	No.	No	Kombi

# Farm O

## Mortality and Condemned Birds



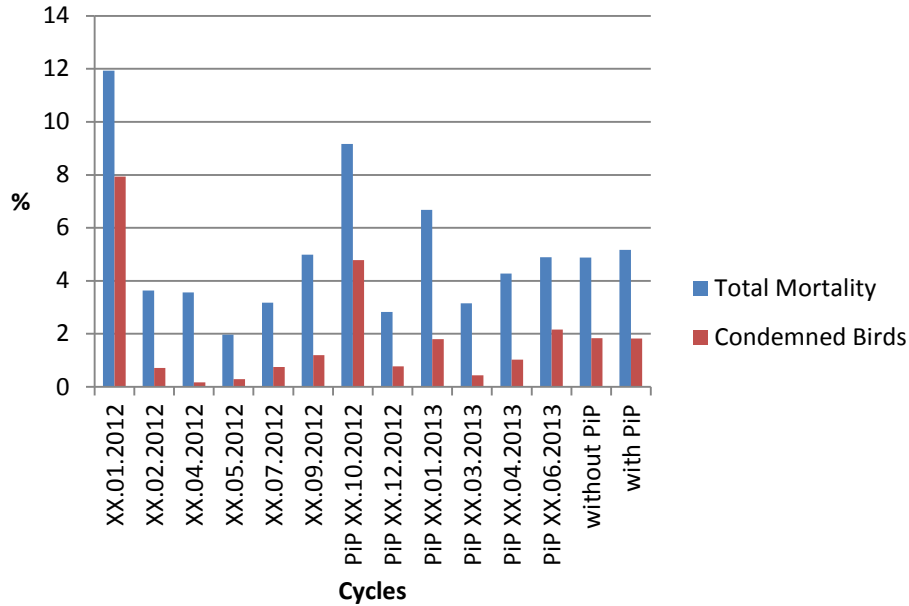
## Feed Conversion / Weight



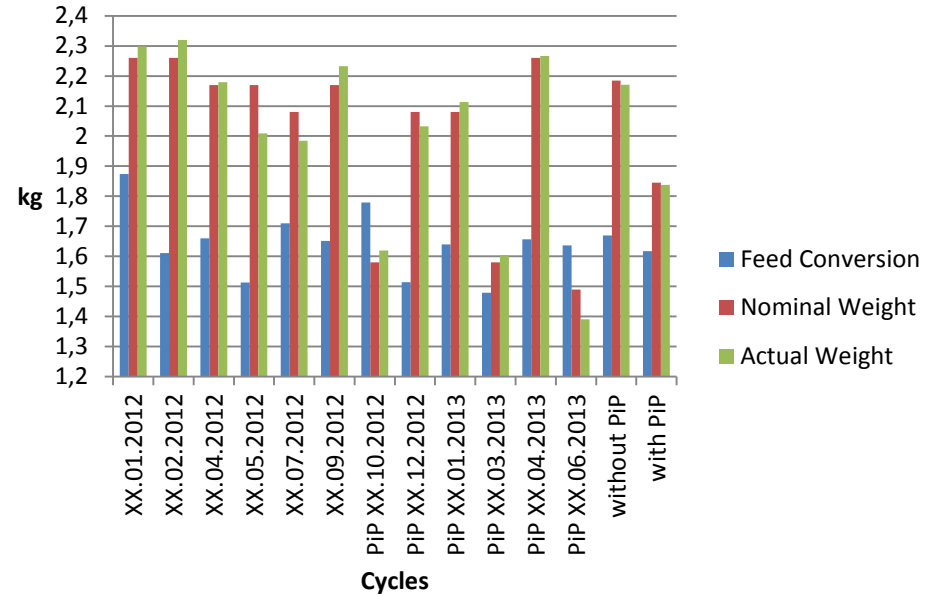
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 17'500 Birds
XX.01.2012	No AB	Disinfection	No	Kombi
XX.02.2012	No AB	Disinfection	Yes	Kombi
XX.04.2012	Antibiotics	Disinfection	Yes	Kombi
XX.05.2012	Antibiotics	Disinfection	Yes	Kombi
XX.06.2012	Antibiotics	Disinfection	No	Kombi
XX.08.2012	No AB	Disinfection	Yes	Kombi
XX.09.2012 PiP	No AB	No.	No	Kombi
XX.11.2012 PiP	No AB	No.	No	Normal
XX.12.2012 PiP	No AB	No.	No	Normal
XX.02.2013 PiP	No AB	No.	No	Kombi
XX.03.2013 PiP	No AB	No.	No	Kombi
XX.05.2013 PiP	No AB	No.	No	Kombi

# Farm P

## Mortality and Condemned Birds



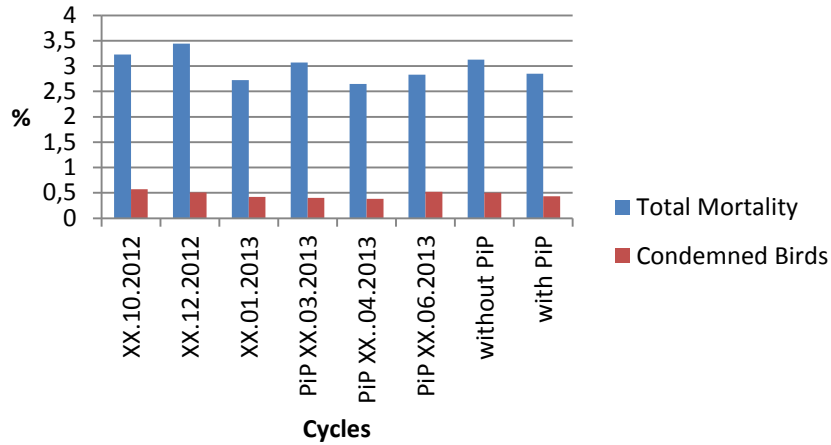
## Feed Conversion / Weight



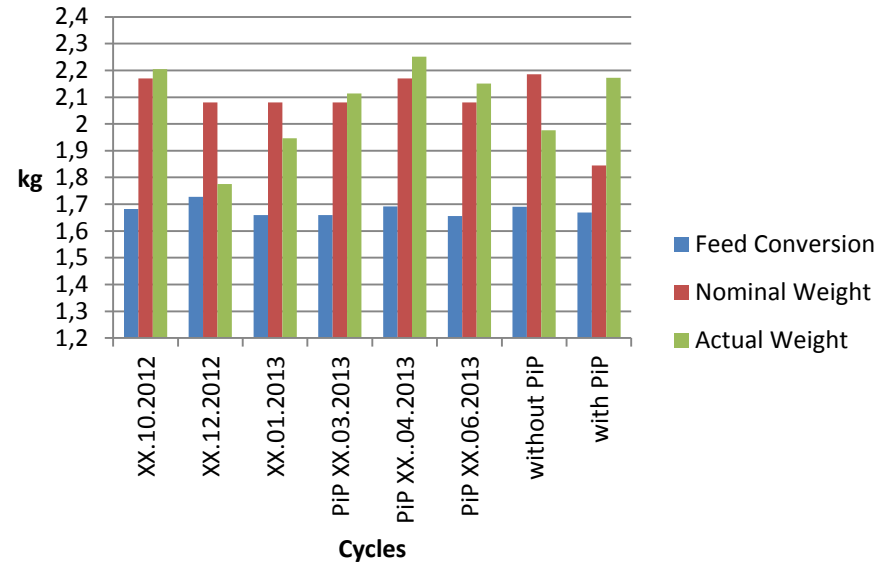
Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 6'100 Birds
XX.01.2012	No AB	Disinfection	Yes	Normal
XX.02.2012	No AB	Disinfection	Yes	Normal
XX.04.2012	No AB	Disinfection	Yes	Normal
XX.05.2012	No AB	Disinfection	Yes	Kombi
XX.07.2012	No AB	Disinfection	No	Normal
XX.09.2012	No AB	Disinfection	Yes	Normal
XX.10.2012 PiP	No AB	No.	No	Ultra short
XX.12.2012 PiP	No AB	No.	No	Normal
XX.01.2013 PiP	Antibiotics	No.	No	Normal
XX.03.2013 PiP	No AB	No.	No	Ultra short
XX.04.2013 PiP	No AB	No.	No	Kombi
XX.06.2013 PiP	No AB	Disinfection	No	Ultra short

# Farm Q

## Mortality and Condemned Birds



## Feed Conversion / Weight



Umtrieb	Treatment	Disinfection	Campylobacter detected	1 Kombi-Mast* = 17'400 Birds
XX.10.2012	No AB	Disinfection	No	Kombi
XX.12.2012	Antibiotics	Disinfection	No	Kombi
XX.01.2013	No AB	Disinfection	No	Kombi
XX.03.2013 PiP	Antibiotics	No.	No	Kombi
XX.04.2013 PiP	No AB	No.	No	Kombi
XX.06.2013 PiP	No AB	No.	No	Kombi