



NIBIO

NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH

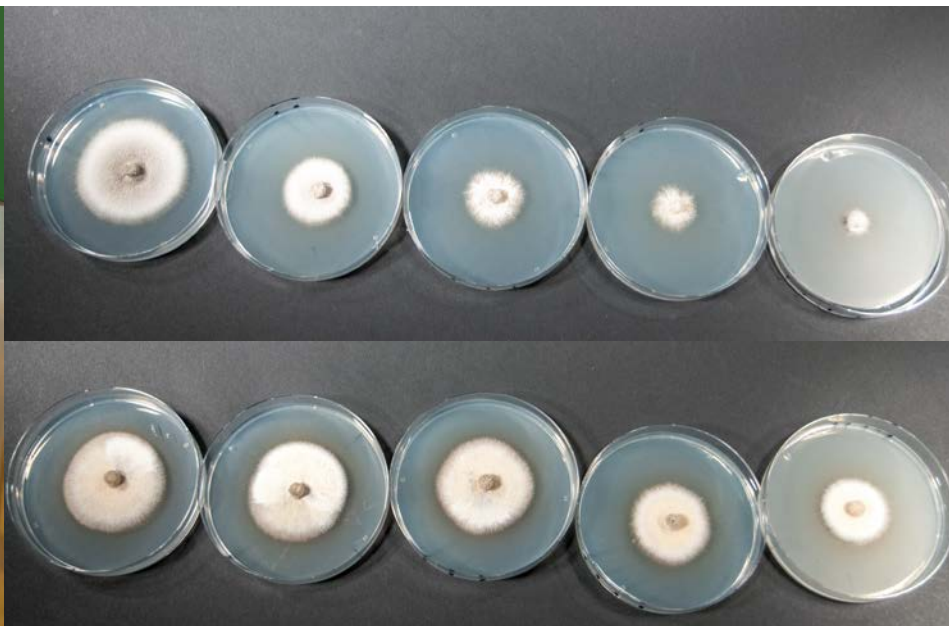
FUNGICIDE RESISTANCE IN NORDIC *PARASTAGONOSPORA*
NODORUM ISOLATES
ANDREA FICKE



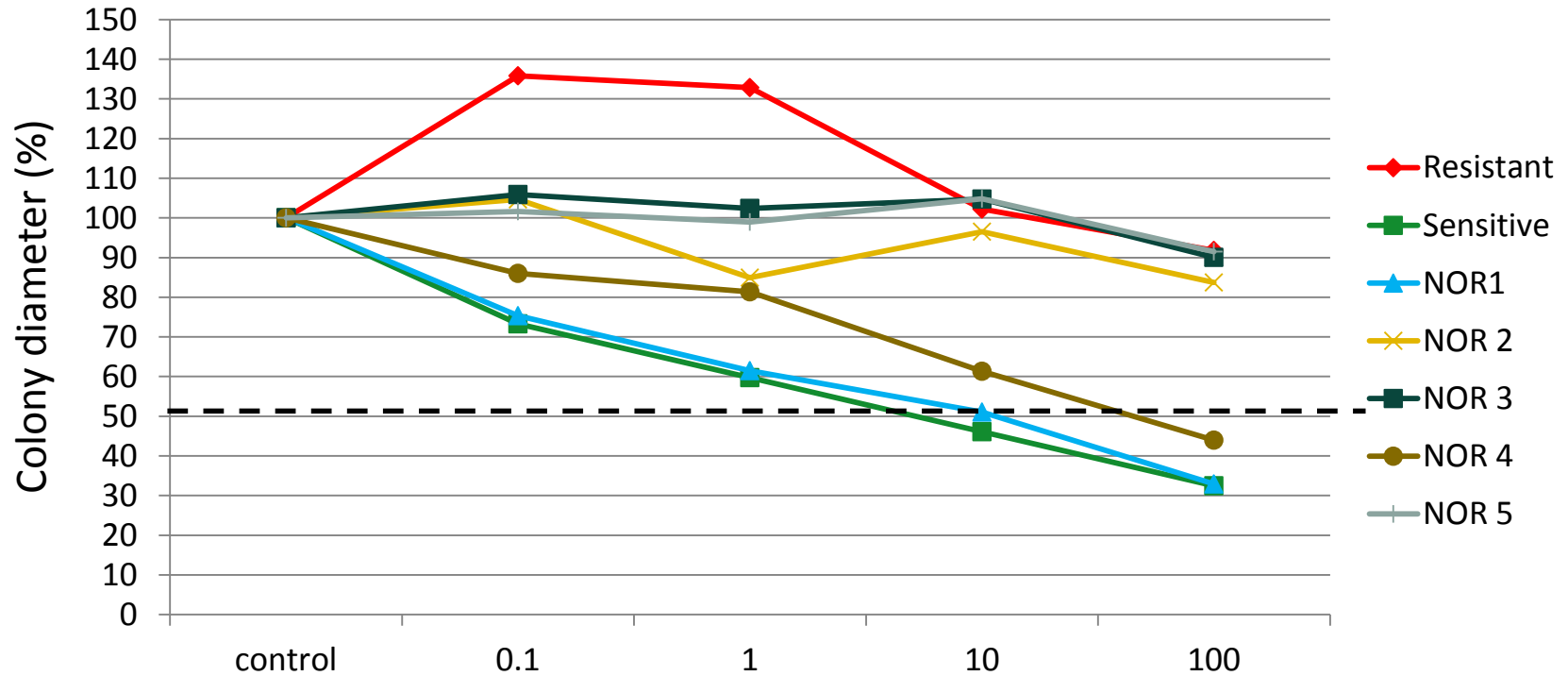
OVERVIEW OF LEAF SAMPLES RECEIVED FOR TESTING

Country	Samples received	Nr of ss <i>P. nodorum</i> isolates
Sweden	2	2 (1 from barley)
Danmark	-	
Estonia	5	4
Latvia	-	
Lithuania	-	
Finland	-	
Norway	5	5

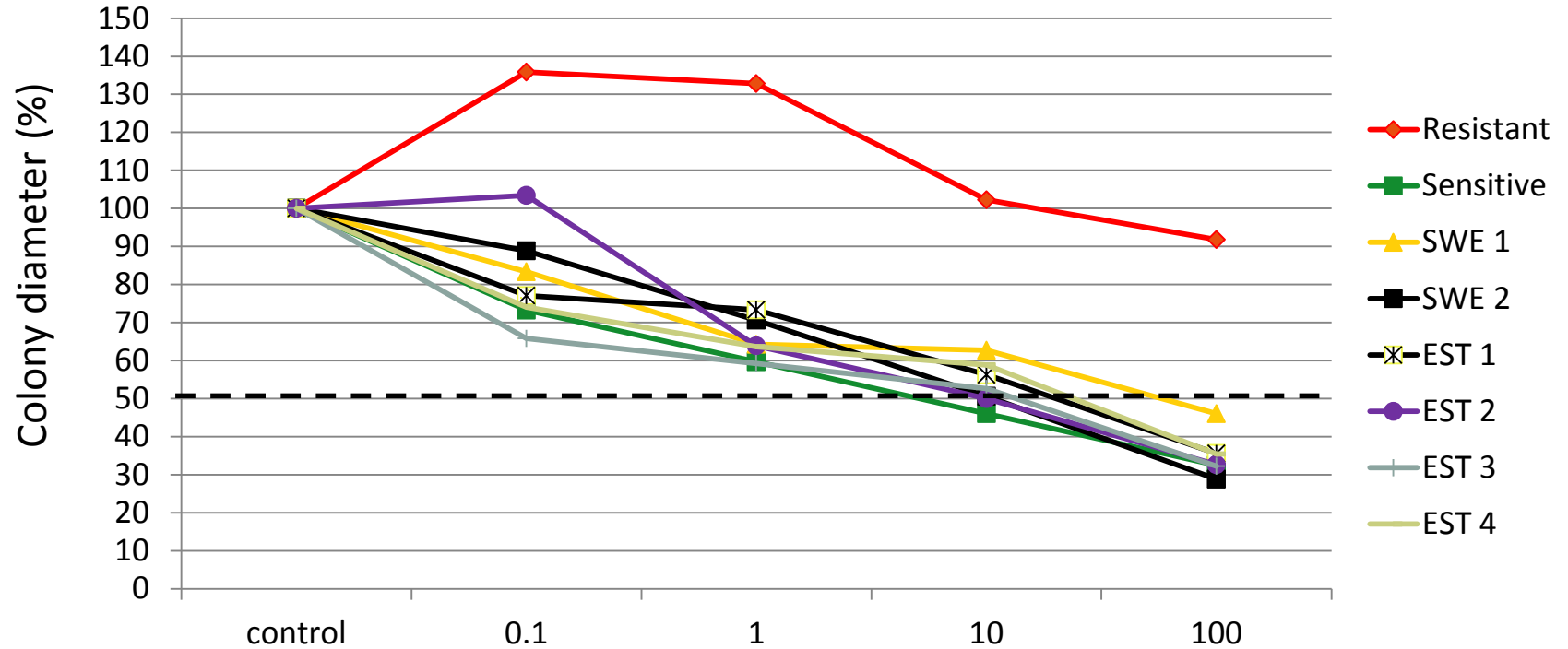
METHOD:



COLONY GROWTH OF NORWEGIAN SNB ISOLATES 7DPI ON AMISTAR



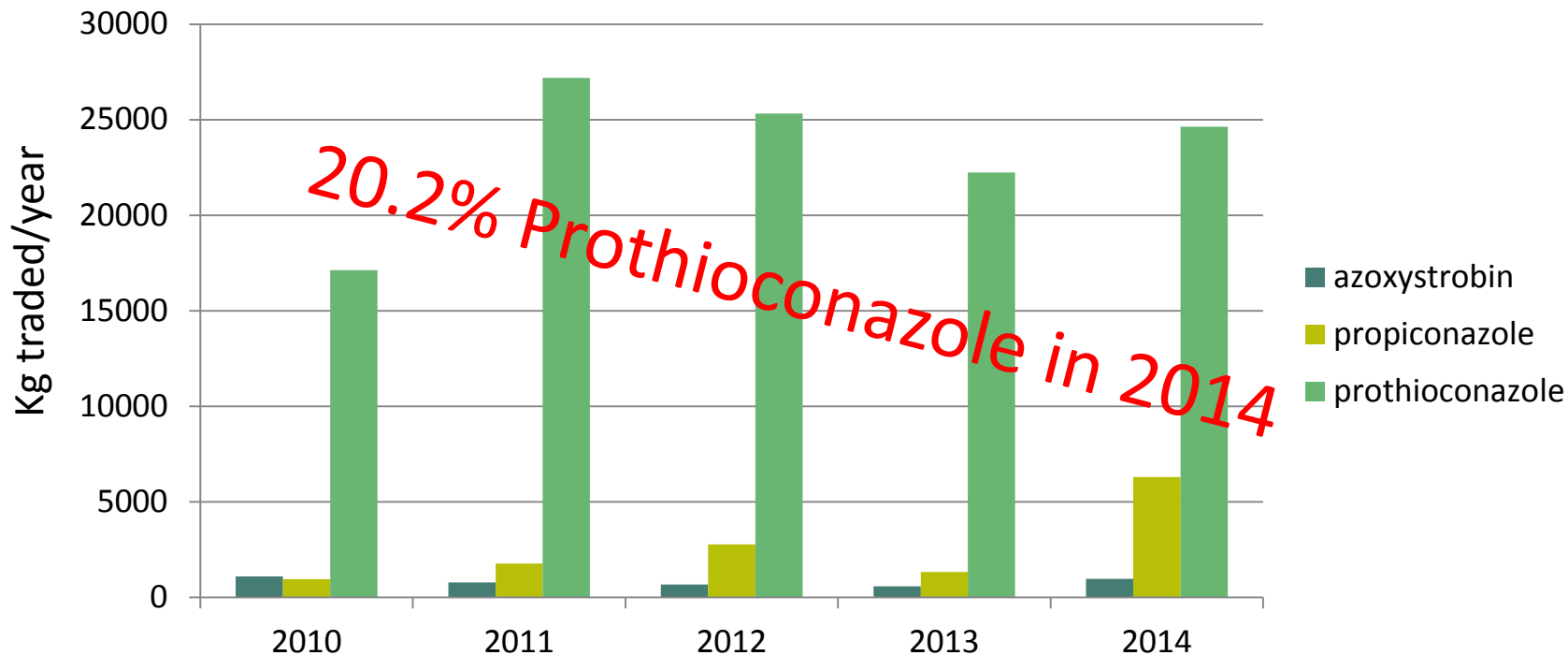
COLONY GROWTH OF SWEDISH AND ESTONIAN SNB ISOLATES 7DPI ON AMISTAR



HOW RELEVANT IS THIS IN THE FIELDS?



HOW MUCH OF WHAT ACTIVE INGREDIENTS ARE USED IN NORWAY?



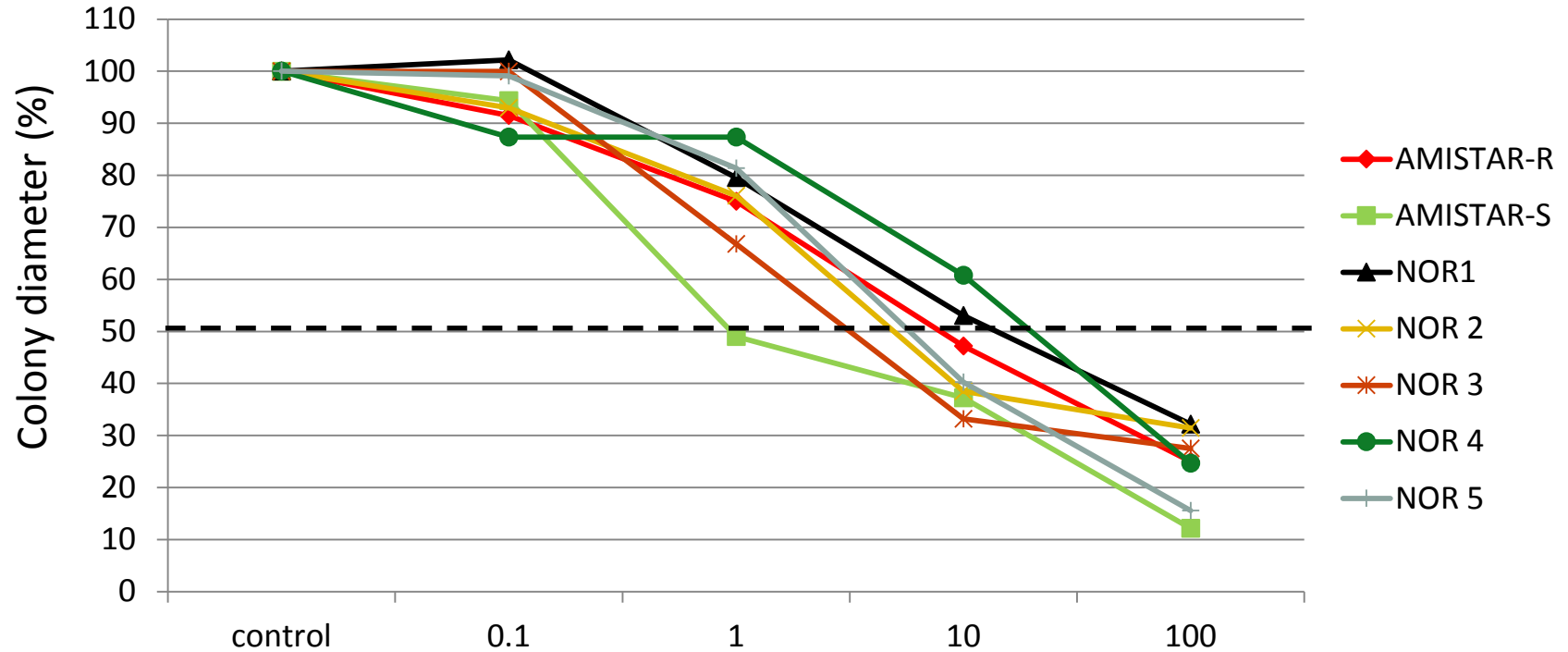
WHAT IS SPRAYED HOW OFTEN IN WHEAT?

- 70% spring wheat, 30% winter wheat
- 1-2 times fungicides applied in spring wheat
- 2 times fungicides applied in winter wheat
- Full dose applications most common
- Proline (Prothioconazole) 0.8l/ha
- Amistar (Azoxystrobin) 0.75l/ha
- Bumper (Propioconazole) 0.5l/ha

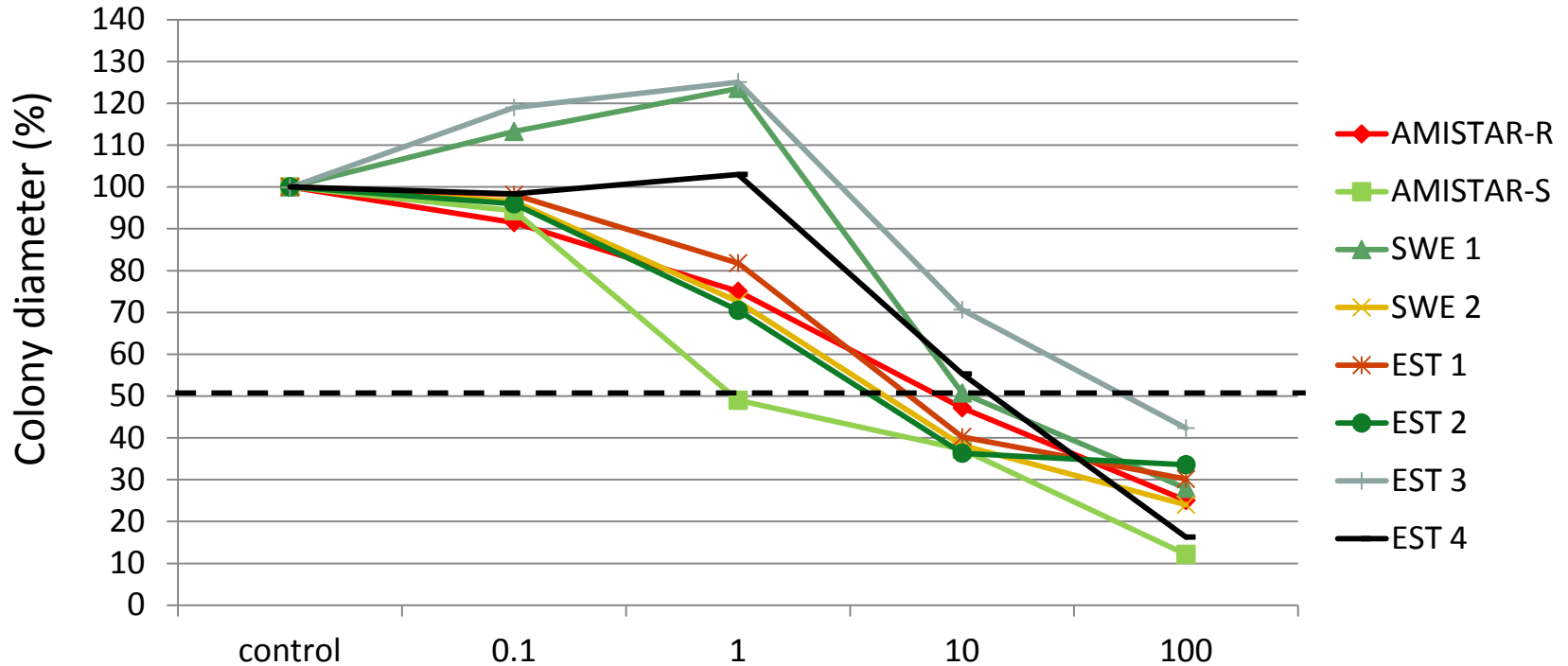
Let's look at Proline and Bumper

From the norwegian central office of statistics (www.SSB.no)

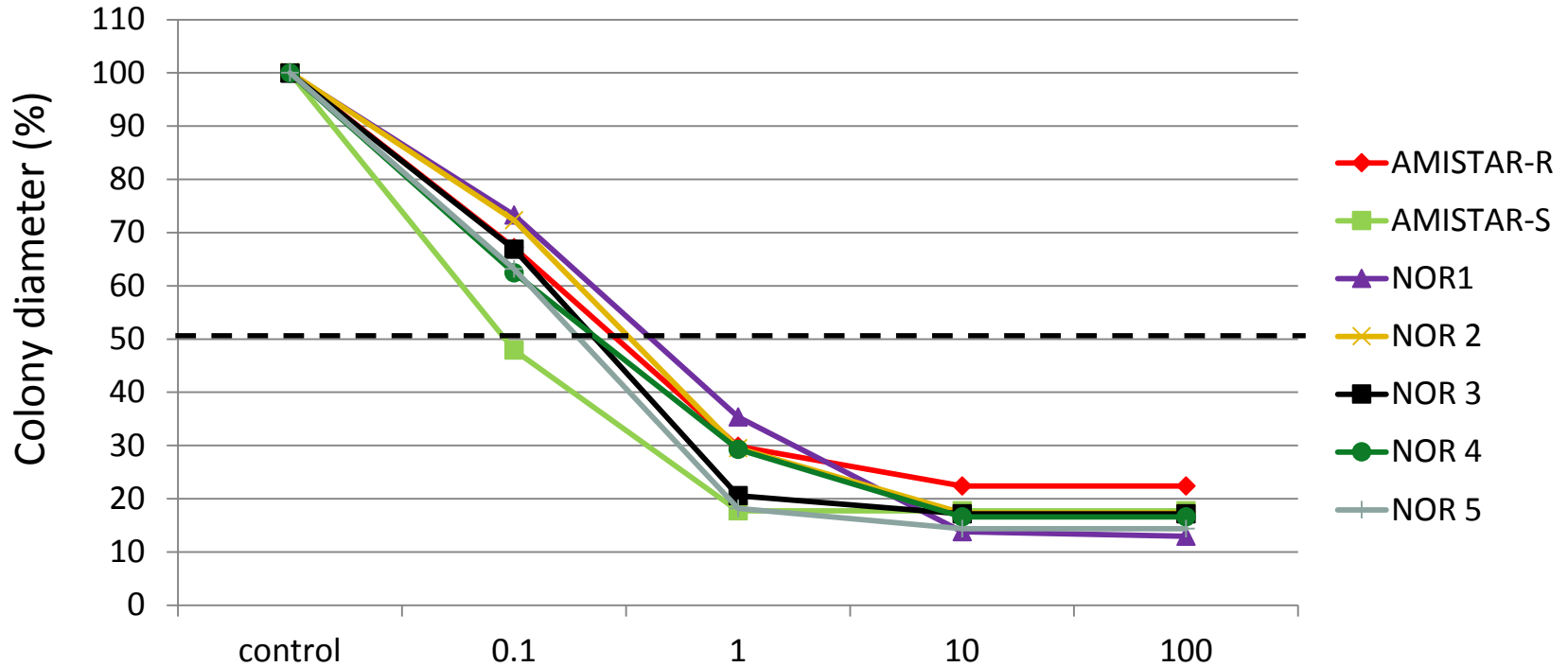
COLONY GROWTH OF NORWEGIAN SNB ISOLATES 7DPI ON PROLINE



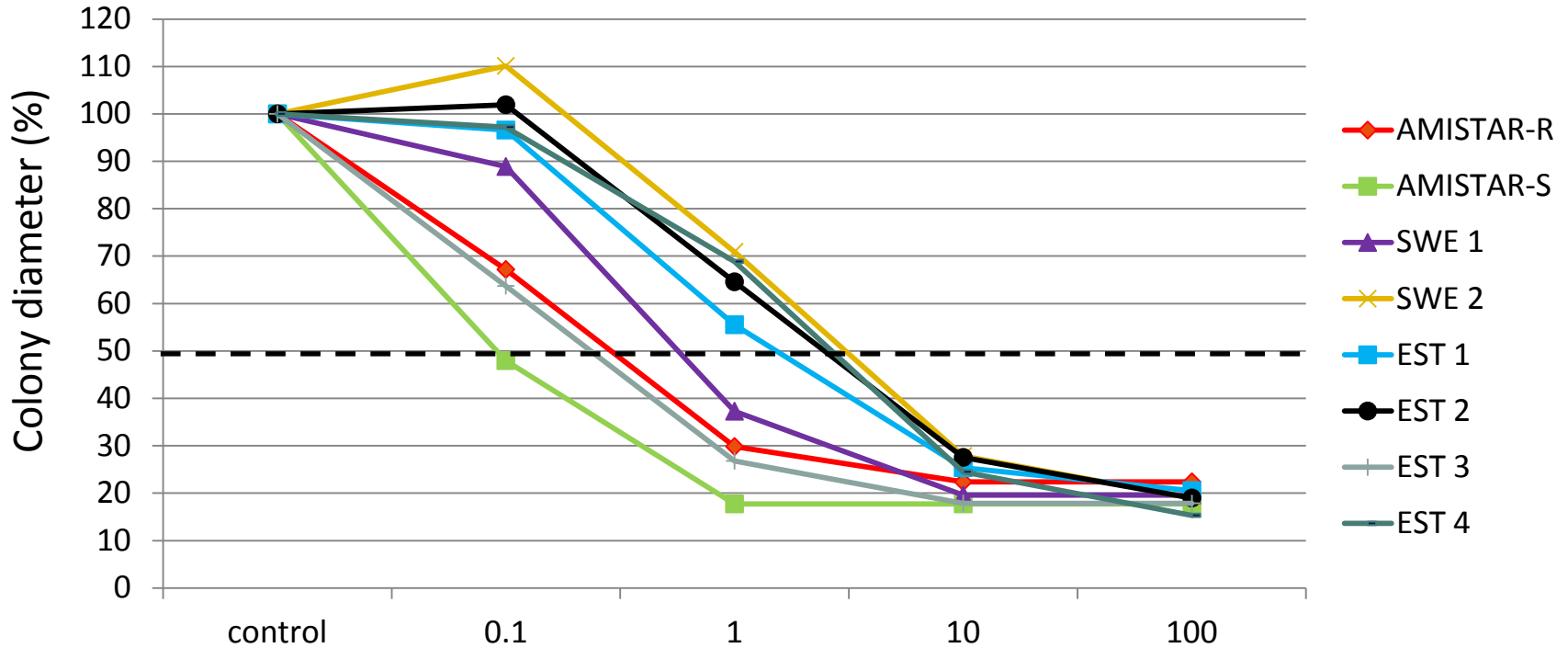
COLONY GROWTH OF SWEDISH AND ESTONIAN SNB ISOLATES 7DPI ON PROLINE



COLONY GROWTH OF NORWEGIAN SNB ISOLATES 7DPI ON BUMPER



COLONY GROWTH OF SWEDISH AND ESTONIAN SNB ISOLATES 7DPI ON BUMPER



FOOD FOR THOUGHT:

- Testing hveteaksprikk for triazoler?
- What reference isolates to use?
- Molecular methods (CYP51)?
- Funding?