

Innhold (klikk på sidetallet, så kommer du dit direkte ...)

Denne ukas viktigste	2
<i>Høringssak – framlegg til tiltak og organisering av arbeidet med etikk og redelighet i utdanningen...</i>	2
<i>Viktige tidsfrister</i>	2
Essentials in English	3
<i>Request for feedback to a proposal an initiative relating to ethics and integrity issues in education ...</i>	3
<i>Hospital-bred antibiotic-resistant bacteria kill 19 000 annually in the US</i>	3
<i>IT services will be stopped this weekend, Saturday 07:00-14:00.....</i>	3
Siste nytt fra BIO	3
<i>Sykehusbakterie tar 19.000 liv årlig i USA</i>	3
<i>New name for skeletal group.....</i>	4
Siste nytt fra verden rundt oss	4
<i>Full stans på alle sentrale IT-tjenester lørdag: ikke mulig å få tak i hjemmekatalogen din.....</i>	4
<i>Lokale lønnsforhandlinger er fullført.....</i>	4
<i>Tora Aasland ny forskningsminister.....</i>	4
Forskning: utlysninger, nye satsinger og prosjekter	4
<i>NFR – søknadsfrister 2007 – 2008.....</i>	4
<i>Endret søknadsfrist: FUGE lyser ut brukerstyrte prosjekter</i>	4
<i>BIA utlyser inntil 50 mill.kr. til prosjekter med oppstart 1.4.2008.....</i>	4
<i>The Research Council's project database is now accessible.....</i>	4
<i>Faculty positions open at the University of Alaska, School of Fisheries and Ocean Sciences</i>	5
<i>ICoMM Postdoctoral Scientist - Marine Biological Laboratory, Woods Hole.....</i>	5
Ukens bilde	5
Ny doktorgrad	5
<i>Claus Stenberg: rekrutteringsprosesser hos grønlandsk blåkkeite</i>	5
Avsluttende mastergradseksamen	5
<i>Henrik Espedal: klassifikasjonssystem for kystlynghei på Vestlandet.....</i>	5
Gjesteforelesninger, seminarer og kollokvier	6
<i>BTO konferansen 2007: Rocket Science i Bergen.....</i>	6
<i>PET-seminar ved Institutt for biomedisin.....</i>	6
<i>10th International Estuarine Biogeochemistry Symposium</i>	6
<i>World Conference on Marine Biodiversity.....</i>	6
<i>Oslo conference on research cooperation between South Africa and Norway.....</i>	6
Nye artikler	7
<i>Anita-Elin Fedøy og Ida Helene Steen: struktur og funksjon til kulde-aktivt enzym.....</i>	7
<i>Anne Gro Veia Salvanes & Olav Moberg: tidlige opplevelser påvirker gruppeatferd hos fisk</i>	7
<i>Ivar Rønnestad, Yoko Kamisaka & Sigurd Tonheim: hormonell kontroll under fordøyelse av proteiner, peptider og aminosyrer.....</i>	7
<i>Ivar Rønnestad: redusert vekst ved for høyt lipidnivå i maten til fiskelarver?.....</i>	8
<i>Sigurd Stefansson: økt CO2 ga lavere vekst hos laks.....</i>	8
<i>Albert Imsland: vekst hos flekksteinbit i ulike typer tanker.....</i>	9
Ny bok	9
<i>Jarl Giske & Per Jakobsen: revidert utgave av lærebok i evolusjon og økologi.....</i>	9

Denne ukas viktigste

Høringssak – framlegg til tiltak og organisering av arbeidet med etikk og redelighet i utdanningen

En arbeidsgruppe ved UiB har i vårsemesteret 2007 utarbeidet en innstilling om tiltak og organisering av arbeidet med etikk i utdanning. Utdanningsavdelingen har oversendt innstillingen og den tilknyttete kartleggingen av tiltak og ressurser i forhold til etikk i utdanningen til høring til fakultetene og nå i neste omgang instituttene.

Fakultetets studiestyre drøftet høringssaken på møtet 17. oktober. Eventuelle innspill og kommentarer til innstillingen har frist for tilbakemelding **31. oktober**.

Dokumentene i saken omfatter følgende:

- "Utdanning i akademisk redelighet - tiltak for etikk i utdanningene ved Universitetet i Bergen"
- Vedlegg "Kartlegging av tiltak og ressurser i forhold til etikk i utdanningen"
- Tilleggsinnstillingen "Reglement til etikkutdanningen"

Alle dokumentene kan finnes på: www.etikk.uib.no

Ved instituttet blir de ulike programstyrelederne, leder for forskerutdanningsutvalget og studentrepresentant innkalt til et møte for en diskusjon, men alle står fritt til å komme med innspill! Eventuelle kommentarer kan sendes til eli.hoie@bio.uib.no.

Hilsen Eli Høie

Viktige tidsfrister

Mer info om følgende utlysninger og mange flere (inkl. løpende, dvs. uten frister) finner du [her](#)
Husk å sende søknadsutkastet til post@bio.uib.no 1 uke i forveien (gjelder ikke mindre bevilgninger som legater og fonds)

- | | | | |
|---------------|---|----------------|---|
| Nov. | Call for IDEAS Advanced Investigator Grant | 28. nov | NFR numerous deadlines kl.18:00 |
| | Call for CAPACITIES Research Infrastructure | | More information on bio-web |
| 1. nov | Nordic Marine Academy: mobility grants, scientific workshops and seminars | 19. des | Norsk-polsk Forskningsfond |

Essentials in English

Request for feedback to a proposal an initiative relating to ethics and integrity issues in education

UiB has established a working group to consider ethics and integrity issues in education. Last spring the group developed a proposal about how to organise some concrete initiatives in this area. UiB's Education Department has sent the proposal as well as a description of the related actions and resource use for consideration at the Faculties. Now feedback is requested at the department, centre and institute level. The proposal was presented to the MatNat Faculty Board 17 October. The deadline for feedback is 31 October.

Documents relating to the proposal can be found at: www.etikk.uib.no (in Norwegian)

Programme leaders, research and education committee members and student representatives will be called in to a meeting to discuss the proposal – but all are welcome to give feedback. Please send a mail to: eli.hoie@bio.uib.no

Hospital-bred antibiotic-resistant bacteria kill 19 000 annually in the US

Wednesday the New York Times reported that an anti-biotic resistant bacteria was responsible for nearly 19 000 deaths in the US in 2005. It is disturbing to reflect that very few medical students around the world are trained to think about the fact that trying to destroy disease-causing organisms actually results in their evolution towards better resistance. The better we are at combating pests and infectious agents, the more we encourage them to evolve better defensive strategies. Does the responsibility for these 19 000 deaths lie with those responsible for medical education? What about here in Bergen, should we not include evolution in medical curricula? At this point fish health students at BIO are the only ones learning about this dangerous cycle.

IT services will be stopped this weekend, Saturday 07:00-14:00

This means that it will be impossible to use your computer at UiB during this period. It will affect VPN access, e-mail, internet and any IT-based networks and catalogues. Plan accordingly.

Siste nytt fra BIO

Sykehusbakterie tar 19.000 liv årlig i USA

På onsdag rapporterte [The New York Times](http://www.nytimes.com) at en resistent bakterie var årsaken til nesten 19.000 dødsfall i amerikansk helsevesen i 2005.

Et annet perspektiv er at svært få helseutdanninger i verden tar inn over seg at å drepe en sykdomsfremkallende organisme faktisk er å påvirke dens evolusjon. Jo flinkere vi blir til å drepe skadedyr og sykdomsagenter, desto mer styrke gir vi til de evolusjonære kreftene som fører til tilpasninger hos disse artene. Dermed kan man til en viss grad skyld på utdanningsystemene for at disse 19.000 døde.

Hva med litt evolusjon i helseprofesjonsutdanningene i Bergen? Det er trolig bare innen fiskehelse at studentene lærer om dette.

Hilsen Jarl Giske

The New York Times

Health

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION

RESEARCH FITNESS & NUTRITION MONEY & POLICY VIEWS

Search Health 3,000+ Topics

Deadly Bacteria Found to Be More Common

By KEVIN SACK
Published: October 17, 2007

ATLANTA, Oct. 16 — Nearly 19,000 people died in the United States in 2005 after being infected with virulent drug-resistant bacteria that have spread rampantly through [hospitals](#) and [nursing homes](#), according to the most thorough study of the disease's prevalence ever conducted.



An Johansson for The New York Times

The government study, which is being published Wednesday in The Journal of the [American Medical Association](#), suggests that such infections may be twice as common as previously thought, according to its lead author, Dr. R. Monina Klevens.

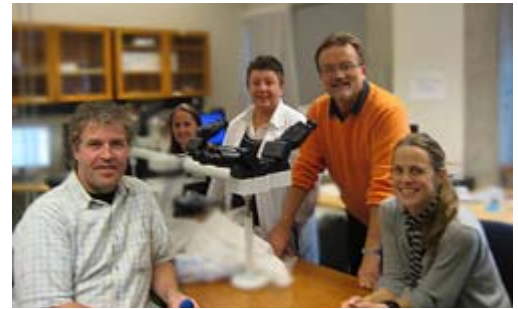
If the mortality estimates are correct, the number of deaths associated with the germ, methicillin-resistant *Staphylococcus aureus*, or MRSA, would exceed those attributed to [H.I.V.](#)-AIDS, [Parkinson's disease](#), [emphysema](#) or homicide each year.

E-MAIL
PRINT
REPRINTS
SAVE
SHARE

ARTICLE TOOLS
SPONSORED BY
DARJEELING
LIMITED

New name for skeletal group

The Skeletal Development Group has a new name; *Vertebrate evolution and development* that better reflects the group's research activity into new break-through mechanisms for the development of the vertebral column. [Learn more](#)



Siste nytt fra verden rundt oss

Full stans på alle sentrale IT-tjenester lørdag: ikke mulig å få tak i hjemmekatalogen din

Konsekvensene av nedetiden er at det vil bli umulig å jobbe med datamaskin på uib-campus i morgen. Både hjemmekataloger, e-post, websider og nettverk mot IT-avd vil være utilgjengelig.

Alle systemene ved IT-avdelingen vil bli stanset lørdag 20. oktober fra kl. 07:00 til 14:00.

Pga planlagt nødvendig strømstans vil ingen tjenester levert av IT-avdelingen være tilgjengelig i dette tidsrommet. Dette inkluderer nettverk, telefoni og servertjenester.

Lokale lønnsforhandlinger er fullført

Selv om potten til lokale forhandlinger bare var en tredjedel av det den var i fjor, var det like mange som søkte om opprykk. Les mer [På Høyden](#) ..

Tora Aasland ny forskningsminister

– Jeg er glad for at Regjeringen med dette markerer at de tar sikte på å en bedre oppfølging av sine egne forskningsambisjoner, sier rektor **Sigmund Grønmo**.

Les mer [På Høyden](#) og i [Morgenbladet](#)



Forskning: utlysninger, nye satsinger og prosjekter

NFR – søknadsfrister 2007 – 2008

Søknadsfrister 2007: 28. november

Søknadsfrister 2008: 13. februar, 16. april, 4. juni, 3. september, 15. oktober, 26. november

Endret søknadsfrist: FUGE lyser ut brukerstyrte prosjekter

Frist for å søke om støtte til næringsrettede prosjekter (BIP) er 28. november.

Fristen er utsatt for å få med prosjektideer etter konferansen "Bioteknologi i sentrum" i september.

<http://www.forskningsradet.no/servlet/Satellite?c=GenerellArtikkel&pagename=ForskningsradetNorsk/GenerellArtikkel/VisMedHovedtilhorighet&cid=1187636486363>



BIA utlyser inntil 50 mill.kr. til prosjekter med oppstart 1.4.2008

BIA utlyser midler til Brukerstyrte innovasjonsprosjekter (BIP) og Kompetanseprosjekter med brukermedvirkning (KMB). Det legges ikke opp til tematiske eller bransjemessige prioriteringer i utlysningen. Frist 28.11.2007

<http://www.forskningsradet.no/servlet/Satellite?c=GenerellArtikkel&pagename=ForskningsradetNorsk/GenerellArtikkel/VisMedHovedtilhorighet&cid=1190048616311>

The Research Council's project database is now accessible

From 1997 to the present, the Research Council of Norway has granted funding to more than 20 000 R&D projects. A database containing information on these projects is now accessible to the public on the Research Council website. Users can search the database to find information about projects within a specific subject field, learn where a project was carried out, and more.

<http://www.forskningsradet.no/servlet/Satellite?c=GenerellArtikkel&pagename=ForskningsradetEngelsk/GenerellArtikkel/VisMedHovedtilhorighet&cid=1192474823190>

Faculty positions open at the University of Alaska, School of Fisheries and Ocean Sciences

9 positions open. Check at <http://www.sfos.uaf.edu/employment/>

ICoMM Postdoctoral Scientist - Marine Biological Laboratory, Woods Hole

The Marine Biological Laboratory is seeking applicants for a full-time, year round Postdoctoral position in the Josephine Bay Paul Center in Comparative Molecular Biology and Evolution as part of the International Census of Marine Microbes (ICoMM). [Complete description and application details](#)

Ukens bilde

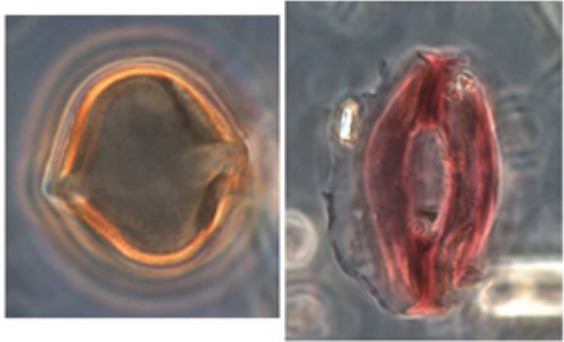


Figure legend: A pollen grain of *Astragalus sp.* and a juniper stomata

Photographer: [Aage Paus](#), førsteamanuensis in Palaeoecology in the Ecological and environmental change research group

Description: "These two botanical microscopic fossils just a few thousandths of a millimeter in size, come from a sediment core taken from the bottom of a lake at Dovrefjell.

(<http://www.eecrg.uib.no/Places/Dovre/Dovre.dwt>).

They were deposited in the sediments during the last

part of the ice age and are maybe 14-15 000 years old. This proves that Dovrefjell became icefree some thousands of years earlier than previously thought."

Ukens bilde: You are invited to submit photos (electronically!) for a "Ukens bilde". Please include a very short description and credit information. Picture can be of researchers / students in action, technology, organisms, field sites ... Please send your pictures to Ukensbildekomiteen c/o Elinor Bartle (preferable format jpg, gif; size around 300px sq; saved for web - under 60kb).

Ny doktorgrad

Claus Stenberg: rekrutteringsprosesser hos grønlandsk blåkveite

Claus Stenberg disputerer den 19. oktober for PhD-graden ved Universitetet i Bergen med avhandlingen:

"Recruitment processes in West Greenland waters - with special focus on Greenland halibut (*Reinhardtius hippoglossoides*, W.)"

Blåkveiten i Vestgrønland er med årlige landinger på omkring 30 000 tonn en av de viktigste fiskeriressurser i Grønland. Blåkveitebestandens størrelse og dynamikk bestemmes etter all sannsynlighet allerede tidlig i blåkveitens livshistorie. Selv små endringer i overlevelsen av egg, larver og ungfisk vil nemlig bety stor variasjon i rekruttering til den voksne og fiskbare delen av bestanden. Biologisk er kunnskap om spesielt blåkveitens tidlige livshistorie sterkt begrenset. Den manglende forståelse av årsakene til bestandssvingninger og sammenhenger mellom bestander kan derfor ha alvorlige konsekvenser for forvaltningen av ressursene. De biologiske og hydrografiske prosessene som har betydning for blåkveitens rekrutteringssuksess fra egg og larver til bunnslått ungfisk (metamorfoserer og går fra det pelagiske larvestadiet til det bunnlevende stadiet), er temaet for Stenbergs doktoravhandling. [Les mer..](#)



Avsluttende mastergradseksamen

Henrik Espedal: klassifikasjonssystem for kystlynghei på Vestlandet

Henrik Espedal holder fredag 26. oktober avsluttende presentasjon av sin mastergrad i botanikk.

Tittel på oppgaven: Et klassifikasjonssystem for ETM+ -data for kartlegging av gjengroende og intakt kystlynghei på Vestlandet.

Veileder: Knut Krzywinski. Sensor: Ivar Herfindal (NTNU)

Tid og Sted: fredag 26. oktober, 10:15. aud. 4 i Realfagbygget. Alle interesserte velkommen!

Gjesteforelesninger, seminarer og kollokvier

BTO konferansen 2007: Rocket Science i Bergen

Forskernes kompetanse - en nøkkelfaktor for å styrke næringslivets konkurransekraft

Bergen Teknologioverføring AS inviterer ledere, mellomledere, forskere og vitenskapelige ansatte til kommersialiseringskonferanse 7. november 2007. I år vil konferansen vil foregå i store auditorium i det nye VilVite-senteret på Marineholmen.

Målet med konferansen er å inspirere flere til å forfølge det kommersielle potensialet i sin forskning, og å synliggjøre forskningens betydning for næringslivets konkurransekraft.

Tid: Onsdag 7. november kl 10.00

Sted: Store Auditorium, VilVite senteret på Marineholmen

Påmelding: www.bergento.no/konferanse2007/pamelding.htm



Delta på vår konferanse, og møt andre forskere og vitenskapelige ansatte ved forskningsinstitusjonene i Bergen, næringsliv, og aktører i Bergens kommersialiseringsmiljø.

Velkommen til en inspirerende og lærerik dag! Les mer om konferansen og programmet her:

www.bergento.no/konferanse2007/

PET-seminar ved Institutt for biomedisin

Torsdag 8. november, kl 12-16. sende påmelding til frits.thorsen@biomed.uib.no innen tirsdag 6. november. ([more information](#))

10th International Estuarine Biogeochemistry Symposium

The "10th International Estuarine Biogeochemistry Symposium – estuaries in a changing world" will be held at the State Key Laboratory of Marine Environmental Science, Xiamen University, Xiamen, China, on May 18-22, 2008. This is the second announcement for the symposium with the name list of themes and plenary speakers.

The online registration and abstract submission will be open on October 18, 2007, and the deadline of abstract submission is February 28, 2008.

More details and news will be coming up at the website: http://mel.xmu.edu.cn/meeting/10th_iebs.

Should you have any questions, please don't hesitate to contact us at 10th-iebs@xmu.edu.cn or vera_shiwei@xmu.edu.cn.

World Conference on Marine Biodiversity

On behalf of the organizing committee we are pleased to present the first announcement to the World Conference on Marine Biodiversity that will be held in Valencia (Spain) from November 11-15, 2008. The deadline for sessions is November 1st 2007 (call is open). The deadline for abstracts is February 1st 2008 (registration opens in November). More information is available at our website.

<http://www.marbef.org/worldconference>.

Oslo conference on research cooperation between South Africa and Norway

The Research Council of Norway (RCN) and the National Research Foundation of South Africa (NRF), are joint organisers of the conference on research cooperation between Norway and South Africa in Oslo 31 October - 2 November.

<http://www.forskningsradet.no/servlet/Satellite?c=GenerellArtikkel&pagename=ForskningsradetEngelsk/GenerellArtikkel/VisMedHovedtilhorighet&cid=1192474882743>

Nye artikler

Anita-Elin Fedøy og Ida Helene Steen: struktur og funksjon til kulde-aktivt enzym

Fedøy AE, Yang N, Martinez A, Leiros HKS, Steen IH 2007. Structural and functional properties of isocitrate dehydrogenase from the psychrophilic bacterium *Desulfotalea psychrophila* reveal a cold-active enzyme with an unusual high thermal stability. *Journal of Molecular Biology* 372: 130-149

Abstract: Isocitrate dehydrogenase (IDH) has been studied extensively due to its central role in the Krebs cycle, catalyzing the oxidative NAD(P)(+)-dependent decarboxylation of isocitrate to alpha-ketoglutarate and CO₂. Here, we present the first crystal structure of IDH from a psychrophilic bacterium, *Desulfotalea psychrophila* (DpIDH). The structural information is combined with a detailed biochemical characterization and a comparative study with IDHs (PcIDH), human cytosolic (HcIDH) and the hyperthermophilic *Thermotoga maritima* (TmIDH). DpIDH was found to have a higher melting temperature (T_m = 66.9 degrees C) than its mesophilic homologues and a suboptimal catalytic efficiency at low temperatures. The thermodynamic activation parameters indicated a disordered active site, as seen also for the drastic increase in K_m for isocitrate at elevated temperatures. A methionine cluster situated at the dimeric interface between the two active sites and a cluster of destabilizing charged amino acids in a region close to the active site might explain the poor isocitrate affinity. On the other hand, DpIDH was optimized for interacting with NADP(+) and the crystal structure revealed unique interactions with the cofactor. The highly acidic surface, destabilizing charged residues, fewer ion pairs and reduced size of ionic networks in DpIDH suggest a flexible global structure. However, strategic placement of ionic interactions stabilizing the N and C termini, and additional ionic interactions in the clasp domain as well as two enlarged aromatic clusters might counteract the destabilizing interactions and promote the increased thermal stability. The structure analysis of DpIDH illustrates how psychrophilic enzymes can adjust their flexibility in dynamic regions during their catalytic cycle without compromising the global stability of the protein.

Anne Gro Vea Salvanes & Olav Moberg: tidlige opplevelser påvirker gruppeatferd hos fisk

Salvanes AGV, O Moberg & VA Braithwaite 2007. Effects of early experience on group behaviour in fish. *Anim Behav* 74: 805-811

Animals that undergo a habitat shift face a number of challenges as they move between habitats; for example, they may encounter new predator species and may be vulnerable as they adapt to their new surroundings. An ability to adapt quickly to the new environment is likely to influence post-transition survival, and an understanding of the development of this ability is important in species that we rear for conservation and reintroduction programmes. Juvenile cod, *Gadus morhua*, undergo a habitat shift during their development, and they are also a species where reintroduction work has been tried. Here, we describe an experiment that investigated the effects that rearing environment has on cod shoaling behaviour. Cod were tested just after they had undergone the transition from a pelagic to a more benthic existence. We found that cod reared in either an enriched or in a plain, standard hatchery environment differed in terms of their shoaling responses; the shoaling tendency of fish reared in enriched tanks varied between testing environments, but fish reared in plain environments responded in the same way across the testing conditions. We discuss the influence of early experience on the development of appropriate behavioural responses and the importance of this for captive-reared species that are released into the wild.

Ivar Rønnestad, Yoko Kamisaka & Sigurd Tonheim: hormonell kontroll under fordøyelse av proteiner, peptider og aminosyrer

Rønnestad I, Kamisaka Y, Conceicao LEC, Morais S, Tonheim SK 2007. Digestive physiology of marine fish larvae: Hormonal control and processing capacity for proteins, peptides and amino acids. *AQUACULTURE* 268: 82-97

Abstract: For the majority of marine fish larvae a fully developed digestive tract, including gastric digestion, is acquired weeks to months (depending on species) after onset of exogenous feeding. Still, the processing capacity (capability to degrade and absorb dietary nutrients) of the larval gut is sufficient to support fast larval growth by digesting prey naturally available in the sea. However, the physiological constraints of the gut with respect to digestion of cultivated live prey and particularly

formulated starter feeds still remain to be elucidated. This paper reviews some recent findings in the areas of control and efficiency of digestive function of marine fish larvae. For studies on the hormonal control, the peptide hormone cholecystokinin (CCK) has been targeted, since it is believed to play an important role in controlling digestion in vertebrates. Recent work on the processing capacity include studies of the digestibility and transfer kinetics of macronutrients from live prey and experimental work on absorption of protein, peptides and free amino acids from the lumen of the digestive tract into the tissues of larval fish and how this changes during ontogeny. The molecular and in vitro characterization of transporters is currently being integrated with ongoing in vivo studies.

Ivar Rønnestad: redusert vekst ved for høyt lipidnivå i maten til fiskelarver?

Morais S, LEC Conceição, I Rønnestad, W Koven, C Cahu, JLZ Infante & MT Dinis 2007. Dietary neutral lipid level and source in marine fish larvae: Effects on digestive physiology and food intake. *Aquaculture* 268, 106-122

Abstract A growth depressing effect of high dietary neutral lipid levels in marine fish larvae has been reported. This may be a result of a decrease in the efficiency or activity of digestive enzymes, a reduction in absorption efficiency and/or a decrease in food intake. The present work reviews recent studies carried out on commercially valuable species (Atlantic herring, Senegalese sole, European seabass and gilthead seabream) that investigated the effects of neutral lipid level and lipid source (fatty acid composition) on some of these key factors influencing larval growth. The results seem to collectively indicate that lipid transport from the enterocytes into the body may be more problematic in larval stages dealing with high neutral lipid diets than lipolytic enzymatic capacity, although both factors are likely to intervene. In seabass, lipase activity was significantly affected by the source of dietary lipid but not by its dietary level. Lipid sources differing in chain length and degree of saturation of their fatty acids may thus affect the efficiency or synthesis of neutral lipase through effects on substrate specificity. Phospholipid digestion appears to be more efficient than that of neutral lipids, although neutral lipase synthesis might not be a limiting factor for larval growth. High neutral lipid larval diets result in the accumulation of large lipid droplets in the enterocytes, which may in turn reduce fatty acid absorption efficiency and ultimately larval growth. Nonetheless, not all fatty acids are equally affected and mechanisms of specific essential fatty acid absorption probably exist. Food intake in seabream larvae is not strictly regulated by total lipid content of the diet and lipid source may have an important role in controlling ingestion. Therefore, the neutral lipid level in diets for marine fish larvae has a significant impact in several factors influencing growth but clearly it cannot be dissociated of its fatty acid composition, which appears to play a central role on the nutritional and physiological effects of dietary lipid, at the ingestion, digestion and absorption levels.

Sigurd Stefansson: økt CO₂ ga lavere vekst hos laks

Fivelstad S, R Waagbø, S Stefansson & AB Olsen 2007. Impacts of elevated water carbon dioxide partial pressure at two temperatures on Atlantic salmon (*Salmo salar* L.) parr growth and haematology. *Aquaculture* 269: 241-249

Abstract Atlantic salmon (*Salmo salar* L.) parr (10–13 g) were exposed to two levels of carbon dioxide partial pressure (0.3–0.5 mm Hg, control group and 12 mm Hg, high group) at two different temperatures (5 °C and 15 °C) for 47 days in an open flow system. Fish density was low in all groups (less than 7–8 kg m⁻³) and the specific water flow was high (higher than 1 L kg⁻¹ min⁻¹) to avoid accumulation of other metabolites. Sodium bicarbonate was added to the water with high carbon dioxide concentration, stabilizing the pH in the range 6.4–6.9 for all four groups. Final mean weight, length and condition factor of the high carbon dioxide groups were significantly reduced compared to their respective control group ($p < 0.05$). The reduction in specific growth rate was more pronounced at 5 °C than at 15 °C. At 5 °C there was almost no growth at elevated carbon dioxide concentrations, with mean reduction in weight of 80% relative to the control group. The weight reduction caused by high carbon dioxide concentration was much less at 15 °C (approx 30%) even though the oxygen saturation was lowest in this group.

Significant gill lesions, mortality and nephrocalcinosis were not detected in any group. Red blood cell count did not differ between the groups. However, erythrocyte volume declined and erythrocyte haemoglobin content increased in fish exposed to high water carbon dioxide levels at low temperature. The present investigation showed that the impact of elevated carbon dioxide was lowest in the high temperature group.

Albert Imsland: vekst hos flekksteinbit i ulike typer tanker

Imsland AK, Gunnarsson S, Foss A, Sparboe LO, Øiestad V & Sigurdsson S 2007. Comparison of juvenile spotted wolffish, *Anarhichas minor*, growth in shallow raceways and circular tanks.

JOURNAL OF THE WORLD AQUACULTURE SOCIETY 38: 154-160

Abstract: We compared growth properties of juvenile spotted wolffish with initial mean weight (+/- SE) 105.9 (+/- 3.1) g reared in shallow raceways and conventional circular tanks in a 202-d-long growth trial at ambient temperature (approximately 4.0 C). From Day 41 onward, the fish in the shallow raceways was significantly larger, and final mean weights were 356.3 (+/- 18.2) and 318.2 (+/- 15.6), in the shallow raceways and the circular tanks, respectively. Overall, growth rates were 14% higher (0.62%/d) in the shallow raceway group compared to the circular tanks (0.52%/d). Feed conversion efficiency differed and was 17% higher in the shallow raceways (1.01) compared to the circular tanks (0.84). Correlation between adjacent growth rates was more profound in the circular tanks (mean Spearman's rank, $r(Sp) = 0.38$) than in the shallow raceways (mean $r(Sp) = 0.15$). This could indicate a stronger social hierarchy in conventional tanks leading to suppressed growth, which is in line with the growth data presented in this study. The findings of the present study may have important consequences for optimization of commercial production of spotted wolffish and could be applicable to other bottom-dwelling species.

Ny bok

Jarl Giske & Per Jakobsen: revidert utgave av lærebok i evolusjon og økologi

Giske, J. & P. Jakobsen 2007. *Evolusjon og økologi – en innføring*. 2. utgave. Fagbokforlaget, Bergen. 417 pp.

