%PDF-1.2 %忤燇 2 0 obj << /Length 11002 >> stream 1 1 1 rg /GS1 gs 1 -4.507 598.215 846.507 re f 0.8 0.8 0.8 rg 1 i 55.549 785 487.521 -26.619 re f* BT /F3 1 Tf 23.142 0 0 23.142 57.031 763.349 Tm 0 0 0 rg -0.001 Tc 0.001 Tw [(ORIGINAL ARTICLES)-7562(AAEM)]TJ /F5 1 Tf 10.032 0 0 10.032 363.976 749.088 Tm 0 Tc 0 Tw [(Ann Ag)-6(ric)-6(Environ Med 2)-6(002, 9, 2)-6(07\2262)-6
(13)]TJ /F7 1 Tf 17.705 0 TD ( )Tj -48.301 -65.949 TD ( )Tj 8.037 0 0 8.037 57.031 77.928 Tm 0.002 Tc -0.004 Tw [(Receiv)6(e)-1(d:)7( )-135(10 S)5(e)-1(ptem)7(ber 2)6(0)6(0)-2(2)]TJ 10.032 0 0 10.032 156.838 77.915 Tm ( )Tj 8.037 0 0 8.037 57.031 68.694 Tm [(Acce)6(pted:)10( )-1390(23 Octo)6(ber 2)6(0)-2(0)6(2)]TJ 10.032 0 0 10.032 156.838 68.681 Tm ( )Tj ET 0 0 0 RG 1 J 1 j
0.513 w 10 M []0 d 57.031 89.771 m 97.843 89.771 l S BT /F5 1 Tf 12.084 0 0 12.084 81.256 665.016 Tm -0.001 Tc 0.001 Tw (PREVALENCE AND RISK FACTORS FOR AIRWAY DISEASES IN FARMERS -)Tj 2.024 -1.5 TD (SUMMARY OF RESULTS OF THE EUROPEAN FARMERS\222 PROJECT)Tj /F7 1 Tf -1.09 -2.298 TD (Katja Radon)Tj 8.037 0 0 8.037 153.19 624.615 Tm (1)Tj 12.084 0 0 12.084 157.237 619.124 Tm -
0.001 Tw (, Eduard Monso)Tj 8.037 0 0 8.037 234.643 624.615 Tm (2)Tj 12.084 0 0 12.084 238.69 619.124 Tm 0.001 Tw [(, Christoph W)9(e)-5(ber)]TJ 8.037 0 0 8.037 327.439 624.615 Tm (3)Tj 12.084 0 0 12.084 331.486 619.124 Tm [(, B)6(r)-3(igitta Danuser)]TJ 8.037 0 0 8.037 417.556 624.615 Tm (3)Tj 12.084 0 0 12.084 421.603 619.124 Tm -0.001 Tw (, Martin Iversen)Tj 8.037 0 0 8.037
499.009 624.615 Tm (4)Tj 12.084 0 0 12.084 503.056 619.124 Tm 0 Tc (,)Tj -33.613 -1.146 TD 0 Tw (Ulrike Opravil)Tj 8.037 0 0 8.037 167.611 610.764 Tm (5)Tj 12.084 0 0 12.084 171.658 605.273 Tm -0.001 Tc -0.001 Tw (, Kelley Donham)Tj 8.037 0 0 8.037 254.308 610.764 Tm (6)Tj 12.084 0 0 12.084 258.355 605.273 Tm 0 Tc 0 Tw (, J\366rg Hartung)Tj 8.037 0 0 8.037 327.781 610.764 Tm
(7)Tj 12.084 0 0 12.084 331.828 605.273 Tm -0.002 Tw [(, Soe)5(r)-2(en Pedersen)]TJ 8.037 0 0 8.037 417.955 610.764 Tm (8)Tj 12.084 0 0 12.084 422.002 605.273 Tm -0.001 Tc -0.001 Tw (, Susanne Garz)Tj 8.037 0 0 8.037 494.62 610.764 Tm (9)Tj 12.084 0 0 12.084 498.667 605.273 Tm 0 Tc (,)Tj -25.58 -1.146 TD -0.001 Tc 0.001 Tw (David Blainey)Tj 8.037 0 0 8.037 259.609 596.913 Tm
0.004 Tc (10)Tj 12.084 0 0 12.084 267.703 591.422 Tm 0 Tc -0.005 Tw (, Uta Rabe)Tj 8.037 0 0 8.037 318.889 596.913 Tm 0.004 Tc (11)Tj 12.084 0 0 12.084 326.983 591.422 Tm -0.001 Tc 0.001 Tw (, Dennis Nowak)Tj 8.037 0 0 8.037 405.016 596.913 Tm (1)Tj 12.084 0 0 12.084 409.063 591.422 Tm ( )Tj 6.042 0 0 6.042 102.118 568.596 Tm (1)Tj 9.063 0 0 9.063 105.139 564.534 Tm 0 Tc -0.005
Tw [(Institut)8(e)-3(of Occupati)8(o)-3(nal and Environ)-9(m)17(ental Medici)8(ne,)-7(L)7(u)-3(dwig-Maxi)-5(m)17(ilians-Universit)14(y)-9(,)-2(Muni)8(ch,)-7(Ger)-7(m)17(any)-9( )]TJ 6.042 0 0 6.042 209.563 556.57 Tm (2)Tj 9.063 0 0 9.063 212.584 552.507 Tm 0.002 Tw [(Hospital)7(Germ)11(ans Trias i Pujol, Badal)8(ona, Spain)]TJ 6.042 0 0 6.042 105.88 544.486 Tm (3)Tj 9.063
0 0 9.063 108.901 540.423 Tm [(Institut)8(e)-3(for)7(Hy)-9(gi)8(ene)7(and)7(Applied P)9(h)3(y)-9(s)-1(i)9(o)-3(log)9(y)-9(, Swiss F)9(e)-3(deral)8( )7(Institut)8(e)-3(of T)7(e)-3(chnolog)9(y)-9(, Z)7(u)-3(ri)8(ch, Switzerland)]TJ 6.042 0 0 6.042 161.227 532.401 Tm (4)Tj 9.063 0 0 9.063 164.248 528.339 Tm 0.002 Tc -0.006 Tw [(De)6(partm)19(ent)-6(of Res)7(p)-1(irat)10
(or)8(y)-7(Dis)7(eas)7(es,)7( )-6(A)7(a)-1(rh)5(us)7(Uni)10(versit)16(y)-7( )-6(H)7(o)-1(s)7(p)-1(ital, De)6(nm)19(ark)]TJ 6.042 0 0 6.042 169.205 520.375 Tm (5)Tj 9.063 0 0 9.063 197.65 516.312 Tm -0.007 Tw [(Centr)8(e)-1(of Wo)5(r)8(k)-1(-Rel)10(a)-1(te)6(d Dise)6(a)6(s)1(es,)7( )-7(Bru)5(ns)7(b)5(u)-1(ttel)10(,)0( )-7(G)7(e)-1(rm)19(an)5(y)]TJ 6.042 0 0 6.042 76.525
508.29 Tm (6)Tj 9.063 0 0 9.063 79.546 504.228 Tm -0.001 Tw [(De)6(partm)19(ent of)6(Prev)5(enti)10(ve M)10(e)-1(d)5(i)3(cine)6(a)6(n)5(d E)9(nvir)8(onm)19(ental He)6(alt)10(h)-1(, C)9(o)-1(lle)6(ge)6(o)5(f)2(M)10(edi)10(cin)5(e)-1(,)6(Uni)10(ver)8(sit)10(y)-7( )6(of I)8(o)-1(w)7(a)-1(, I)8(o)5(wa Cit)16(y)-7(,)6(USA)9( )]TJ 6.042 0 0 6.042 60.28 496.207 Tm (7)Tj 9.063 0
0 9.063 63.301 492.144 Tm 0 Tc 0.002 Tw [(Institut)8(e)-3( )7(of)7(Ani)8(m)17(al Hy)-9(giene, Ani)-5(m)17(al)7(W)-12(e)-3(l)8(f)0(are)7(and Behavi)8(our of Far)-7(m)17(Ani)-5(m)17(als, School)7(of Veti)8(e)-3(rinary)-9( )7(Medici)8(ne,)7(Hanover,)7(Germ)11(any)-12( )]TJ 6.042 0 0 6.042 83.194 484.18 Tm (8)Tj 9.063 0 0 9.063 86.215 480.117 Tm 0.002 Tc 0 Tw [(Res)7(ear)8
ch)5(Ce)6(nt)10(re B)5(y)-7(g)5(h)5(o)-1(lm)19(, Hors)7(ens)7(, D)7(e)6(n)-7(m)19(ark;)]TJ 6.042 0 0 6.042 258.868 484.18 Tm (9)Tj 9.063 0 0 9.063 262.038 480.117 Tm -0.005 Tw [(Institut)8(e)-3(of Occupati)8(o)-3(nal Medici)8(ne,)-7(Uni)8(v)3(ersit)8(y)-9(of)-7(Ha)-9(m)17(burg,)-7(Germ)17(any)-8( )]TJ 6.042 0 0 6.042 112.549 472.095 Tm (10)Tj 9.063 0 0 9.063
118.591 468.033 Tm [(Broo)-9(m)17(fields Hospital,)-9(Essex,)-7(United)-7(Ki)8(ngdo)-9(m)17(;)1( )]TJ 6.042 0 0 6.042 292.726 472.095 Tm (11)Tj 9.063 0 0 9.063 298.768 468.033 Tm 0.002 Tc -0.007 Tw [(Hospit)10(al of)-7(R)9(e)-1(s)7(p)-1(irat)10(or)8(y)-7( )6(Dise)6(ase)6(s)1(,)-7(B)9(eelit)10(z, Germ)19(an)5(y)]TJ 8.037 0 0 8.037 156.838 435.546 Tm 0.01 Tw [(Rado)6(n K,)4
(M)5(onso)7(E,)4( )-7(W)10(e)-1(ber C,)4(Dan)6(u)-2(ser B,)4(Ivers)8(e)-1(n M)12(,)4(Opravil U,)4(Don)6(h)-2(am)7(K,)4(Hartung J,)4(P)5(e)-1(derse)6(n)-2(S)5(,)4(Garz S)5(,)4(Blainey D,)4(Rabe U,)4(Nowak D)]TJ 8.037 0 0 8.037 156.838 399.364 Tm ( )Tj 8.037 0 0 8.037 156.838 390.445 Tm 0.001 Tc (Abstract:)Tj /F7 1 Tf 4.064 0.002 TD 0.002 Tc 0.074 Tw [(Th)6(e ai)11(m)7(of)9(the Europ)6(e)-1(a)6(n)-2(F)5(a)-1(rm)7(ers\222 P)5(r)2(oje)6(c)-1(t was to)6(d)6(e)-1(term)7(ine)7(prev)6(alen)6(ce)7(an)6(d)6( )]TJ -4.064 -1.156 TD 0.053 Tw [(risk f)9(actors of)9(respiratory dis)8(ease)6(s)1(in f)9(a)-
1(rm)7(ers across)8(Europe.)4(A cross-)9(section)6(a)-1(l study in)13( )]TJ 0 -1.149 TD 0.244 Tw [(7 centr)9(es was c)6(a)-1(rried o)6(u)-2(t.)4(In the f)9(i)3(rst phase of)9(the stud)6(y,)4(nearl)11(y)6(8,)4(000 f)9(a)-1(rm)7(ers in)6( )]TJ T* 0.486 Tw [(Denm)7(ark, G)8(e)-1(rm)7(any, S)5(w)1(itzerl)11(a)-1(nd)6(, the UK,)8(an)6(d)6(S)5(p)-2(ain)8(answ)8(ere)6(d)-2

278.932 648.684 0.855 -0.057 re f* 280.699 648.684 1.026 -0.057 re f* 278.932 648.627 0.798 -0.057 re f* 280.699 648.627 1.026 -0.057 re f* 278.875 648.57 0.855 -0.057 re f* 280.756 648.57 1.026 -0.057 re f* 278.875 648.513 0.798 -0.057 re f* 280.756 648.513 1.026 -0.057 re f* 278.818 648.456 0.855 -0.057 re f* 280.813 648.456 1.026 -0.057 re f* 278.761 648.399 3.078 -0.057 re

Tf 8.037 0 0 8.037 57.031 775.706 Tm 0 0 0 rg 0.002 Tc -0.004 Tw [( )-21639(Results of)9(the Europe)6(an F)5(a)-1(rm)7(ers\222 P)5(r)2(oject)9( )]TJ 10.032 0 0 10.032 526.54 775.689 Tm 0 Tc (211)Tj 8.037 0 0 8.037 541.588 775.706 Tm ( )Tj /F5 1 Tf 10.032 0 0 10.032 62.845 446.532 Tm 0.001 Tc -0.001 Tw [(Stage II: Qua)-5(n)0(titative ex)7(p)-6(o)1(sure assessment, detailed)]TJ

1.273 -1.153 TD 0 Tc 0 Tw [(evaluation of)-6(farming characteristics a)-6(n)-7(d lung)]TJ 4.869 -1.153 TD [(function measurem)-6(ents)]TJ /F7 1 Tf -5.727 -1.155 TD ( )Tj /F5 1 Tf 0 -1.146 TD 0.001 Tc 0.044 Tw [(Ex)7(pos)4(u)0(re assess)4(ment.)]TJ /F7 1 Tf 9.568 -0.002 TD 0 Tc 0.041 Tw [(In t)-6(h)0(e second stage of t)-6(h)0(e stud)-6(y)]TJ

[(cells/)-7(m)]TJ ... [(\), total bact)-6(eria \(4.7)636(\327)630 ... [(poultry hou)-6(ses in)-6(Switzerland. In these b)-6(uilding)-6(s)-6(the)]TJ 0 -1.148 TD 0 Tw [(median)-6 ... [(endotoxin)-6(s \(0.36 ng/)-12(m)]TJ ...

[(Detailed results o)-6(f)3(expo)-6(sure assessment have b)-6(e)-5(en)-6( )]TJ 0 -1.148 TD 0.001 Tc -0.001 Tw (reported earlier [11].)Tj 0.994 -1.153 TD 0 Tj /F5 1 Tf 0 -1.152 TD 0 Tc 0.524 Tw [(Respi)-6(r)1(atory)-6(health, fa)-6(rming chara)-6(c)1(teristics an)-7(d)]TJ -0.994 -1.153 TD 0.001 Tc 0.033 Tw [(exposure as)4(sess)4(ment.)]TJ

[(Pig farmi)-6(ng)-6(in Den)-6(m)0(a)-6(r)-3(k and p)-6(oult)-6(ry fa)-6 ... [(In pig far)-8(m)5(er)-8(s, ventilati)-6(on)-6 ... [(No sig)-6(nifi)-6(c)1(ant decrease)-6(in spiro)-6(m)5(etri)-6(c ... [(for lung)-6(fu)-6(ncti)-6(on declin)-6(e ov)-6(er the feedin)-6(g)-6(period.)]

[(0 -)-9( )-1830( )-896(not)-9(w)14(o)-1(rking inside sw)5(ine confinem)9(n)-7(ent bui)5(ld)9(ings \(either because)10(of not)]TJ ... [(Preval)10(ence Odds Ratio \(POR\) \(95% CI\) of)8(work-related)]TJ ... [(respirator)9(y symptoms per quartile of)8(daily duration of)8(work in swine)]TJ ... [(Region)-6248(Denm)7(ark)1256(S)5(c)-1(hleswig-Holst)11(e)6(in Lower)4412(S)5(a)-1(xo)6(ny)-1085(S)5(w)1(itzerland)-3595(S)5(p)-2(ain)]TJ ... [(Type of)8(f)8(a)-2(rming)-9007(Pigs)-8603(Cattle)-8561(Pigs)-7334(Poultry)-5114(Greenhouses)]TJ ... [(Health indicator)-3490(FEV)]TJ ... [(Ventilation +)Tj ... [(Tem)7(p)-2(erature \226)]TJ ... [(Area 0)4730(+)]TJ ... [(Num)7(b)-2(er of)9(anim)7(als)-9064(0)-10135(0)-9816(\226)]TJ ... [(+: positive associ)10(ation; \226: negative associ)10(ation; 0:)7(no statistical association; \330: Parameter not relevant,)10(\206: protective f)8(a)-2(cto)]TJ 50.162 0 TD [(rs; \207: risk f)8(actors. W)9(R)-6(S:)-5( )]TJ -50.162 -1.149 TD -0.003 Tw [(work-rel)10(a)-2(ted respiratory symptoms.)]TJ ET endstream endobj 33 0 obj << /ProcSet [/PDF /Text] /Font << /F5 5 0 R /F7 6 0 R /F9 7 0 R /F15 17 0 R /F17 34 0 R >> /ExtGState << /GS1 8 0 R >> >> endobj 36 0 obj << /Length 14867 >> stream 1 1 1 rg /GS1 gs 1 -4.507 598.215 846.507 re f BT /F7 1 Tf 10.032 0 0 10.032 57.031 775.709 Tm 0 0 0 rg 0 Tc

[(212)-6( )]TJ 8.037 0 0 8.037 75.613 775.722 Tm 0.002 Tc -0.004 Tw [(Rado)6(n K,)4(M)5(onso)7(E,)4( )-7(W)10(e)-1(ber C,)4(Danuser B,)4(Iverse)6(n M)5(,)4(Opravil U,)4(Donh)6(am)7(K,)4(Hartung J,)4(P)5(e)-1(derse)6(n)-2(S)5(,)4(Garz S)5(,)4(Blainey D,)4(Rabe U,)4(Nowak D)]TJ 10.032 0 0 10.032 523.063 775.709 Tm ( )Tj /F9 1 Tf -45.46 -2.841 TD 0 Tc 0.097 Tw [(Pig
farming i)-6(n)0(Lower Saxo)-6(n)0(y.)]TJ /F5 1 Tf 12.432 0 TD ( )Tj /F7 1 Tf 0.347 0 TD -0.001 Tc 0.098 Tw [(A sig)-7(nifi)-7(c)-6(ant declin)-7(e in)]TJ -13.773 -1.153 TD 0.001 Tc 0.005 Tw [(FVC \(3.25%\),)-5(FEV)]TJ 6.555 0 0 6.555 135.919 734.18 Tm (1)Tj 10.032 0 0 10.032 139.225 735.638 Tm [(\(4.44%)-7(\) and MMEF)]TJ 6.555 0 0 6.555 223.756 734.18 Tm 0.003 Tc [(25/7)7
(5)]TJ 10.032 0 0 10.032 238.747 735.638 Tm 0.001 Tc [(\(5.25%\) was)]TJ -18.114 -1.153 TD 0 Tc 0.041 Tw [(seen over the feeding perio)-6(d)0(in 100 sy)-6(mpto)-6(matic far)-8(m)0(ers.)-6( )]TJ T* 0.267 Tw [(In a)-6(m)11(ultiv)-6(ariate)-6(model th)-6(e decrease o)-6(v)0(er the feedi)-6(n)0(g)-6( )]TJ T* 0.17 Tw (period in FVC and FEV)Tj 6.555 0 0 6.555 160.372 699.467 Tm
(1)Tj 10.032 0 0 10.032 163.678 700.925 Tm [(% predicted was)-6(signi)-6(ficantly)-6( )]TJ -10.631 -1.148 TD 0.119 Tw [(negativel)-6(y)0(co)-6(rrelated with air velocity.)-6(Higher respir)-8(able)]TJ 0 -1.153 TD 0.649 Tw [(dust concent)-6(r)-2(ations were sho)-6(w)0(n)-6(to)-6(be signi)-6(ficant)-6( )]TJ T* 0.108 Tw [(predictors for)-8( )6(MMEF)]TJ 6.555 0 0 6.555
145.609 664.811 Tm 0.004 Tc [(25/)12(75)]TJ 10.032 0 0 10.032 160.543 666.269 Tm 0 Tc 0.102 Tw [(decline.)-6(Baseli)-6(ne lung functi)-6(on)]TJ -10.318 -1.153 TD 0.642 Tw [(result)-6(s were shown to)-6(be signi)-6(ficantly negati)-6(vel)-6(y)-6( )]TJ T* 0.091 Tw [(associat)-6(ed wit)-6(h an air outlet)-6(in the wall,)-6(manual)-6(feedin)-6(g,)-6( )]TJ 0 -1.148 TD 0 Tw
[(duration o)-6(f)3(empl)-6(oy)-6(ment)-6(an)-6(d nu)-6(mber o)-6(f)3(p)-6(igs on t)-6(h)0(e)-6(far)-8(m)5(.)]TJ 0.994 -1.153 TD 0.068 Tw [(In these)-6(far)-8(m)0(ers, th)-6(e)-6(median con)-6(centratio)-6(ns o)-6(f)3( )-6(Der p)-6(1)-6( )]TJ -0.994 -1.153 TD 0.136 Tw [(and Der 2 in the)-6(mattress dust were si)-6(g)-6(nificantly hig)-6(her)]TJ T* 0.233 Tw [(than in
samp)-6(les o)-6(f)3( )-6(mattress d)-6(u)0(st o)-6(f)3(22)-6(urban dwell)-6(er)-8(s)]TJ T* 0.136 Tw [(\(53.4 \265)-74(g/g d)-6(u)-6(s)3(t)]TJ /F9 1 Tf 6.773 0 TD -0.001 Tc (vs)Tj /F7 1 Tf 0.83 0 TD 0 Tc [(1)-6(.05 \265)-80(g)0(/)-6(g)0(dust, p)-6(= 0.)-6(001; 19.6)-6(\265)-74(g)0(/)-6(g)6( )]TJ -7.602 -1.153 TD -0.001 Tc (dust)Tj /F9 1 Tf 1.972 0 TD (vs)Tj /F7 1 Tf
0.835 0 TD 0 Tc 0.051 Tw [(2.2)-6(\265)-74(g)-6(/g du)-6(st; p)-6(<)-6(0.)-6(0001, respecti)-6(vely\). The)-12(mit)-6(e)1( )]TJ -2.807 -1.148 TD 0.034 Tw [(concentrati)-6(o)0(n)-6(s)3(in)-6(the transit)-6(areas were)-6(st)-6(rongly related)-6(to)]TJ 0 -1.153 TD 0.795 Tw [(bedroo)-6(m ex)-6(posures. Ad)-6(ditionally, a dose-respo)-6(n)0(se)]TJ T* 0.166 Tw
[(relationship was seen bet)-6(w)0(een Der p1)-6(concentrati)-6(o)-6(n)0(s in)]TJ T* -0.001 Tc 0.467 Tw [(far)-9(m)4(er)-9(s\222 b)-7(e)0(d)-7(s)2(and sen)-7(s)2(it)-7(isation to)]TJ /F9 1 Tf 15.983 0 TD 0.005 Tc (D.)Tj /F7 1 Tf 0.977 0 TD ( )Tj /F9 1 Tf 0.716 0 TD 0 Tc [(pteron)-6(y)1(ssin)-6(us)]TJ /F7 1 Tf 5.506 0 TD 0.006 Tc (.)Tj -23.182 -1.153 TD 0 Tc 0.017 Tw
[(Despite high)-6(Der p 1 concentrations in d)-6(u)0(st samples taken)-6( )]TJ T* -0.001 Tc 0.225 Tw [(fro)-7(m)4(far)-9(m)4(in)-7(g)-7(and ho)-7(me environ)-7(ment)-7(s, far)-9(m)4(er)-9(s did)-7(n)-7(ot)]TJ 0 -1.148 TD 0 Tc 0.091 Tw [(show)-6(a high)-6(er prevalen)-6(ce o)-6(f)3(sen)-6(s)3(itisation)-6(to this)-6(allerg)-6(en)-6( )]TJ 0 -1.153 TD [(co)-6(mpared t)-6
(o)0(t)-6(h)0(e gen)-6(e)1(ral po)-6(pulation in)-6(Ger)-8(m)5(any \(16%)-8( )]TJ /F9 1 Tf 22.602 0 TD -0.001 Tc (vs)Tj /F7 1 Tf 0.835 0 TD ( )Tj -23.438 -1.153 TD 0 Tc 0 Tw [(18%, resp)-6(ecti)-6(v)0(ely\).)]TJ 0.994 -1.153 TD ( )Tj /F9 1 Tf T* 0.082 Tw [(Greenhou)-6(ses in Spain.)-6( )]TJ /F7 1 Tf 9.534 0 TD 0.08 Tw [(Of t)-6(h)0(e 38)-6(grower)-8(s)3(parti)-6(c)1
(ipating)-11( )]TJ -10.528 -1.153 TD 0.409 Tw [(in the)-6(seco)-6(n)-6(d)0(part o)-6(f)3(th)-6(e stud)-6(y in)-6(Spain, 13)-6(were)]TJ 0 -1.148 TD 0.149 Tw [(sen)-6(s)3(itised to flowers or mo)-11(ulds \(34.2%\).)-6(No asso)-6(ciati)-6(on)]TJ 0 -1.153 TD 0.758 Tw [(was seen between greenhou)-6(se characteristics and)-6( )]TJ T* 0.398 Tw [(sen)-6(s)3(itisation.)-6
(However, as in th)-6(e ani)-6(m)5(al)-6(hou)-6(ses, the)]TJ T* 0.153 Tw [(ventilation)-6(rat)-6(e)1(in)-6(side t)-6(h)0(e)-6(b)-6(uildings was)-6(associat)-6(ed)-6(wit)-6(h)6( )]TJ T* 0.165 Tw [(the prevalence of wheezin)-6(g in greenho)-6(use workers \()-8(O)0(R)]TJ T* 0 Tw [(0.11, 95%)-8(CI)-6(0.01-1.04\).)]TJ 0.994 -1.148 TD ( )Tj /F5 1 Tf 7.659 -1.154 TD [(DIS)-
7(CUSS)-7(I)3(O)-6(N)1( )]TJ /F7 1 Tf -7.659 -1.153 TD ( )Tj T* 0.04 Tw [(This study on)-6(prevalence and risk fact)-6(ors of respiratory)-6( )]TJ -0.994 -1.153 TD -0.001 Tc 0.223 Tw [(morbi)-7(dity among European)-7(far)-9(m)4(ers i)-7(s)2(amo)-7(ng the mo)-7(st)-7( )]TJ T* 0.069 Tw [(co)-7(mprehensiv)-7(e studies of it)-7(s kind. Apart)-6(fro)-7(m)10(it)-7(s si)-7(ze,
its)]TJ 0 -1.148 TD -0.008 Tc 0.025 Tw [(m)9(a)-2(in adva)4(nta)4(g)-2(e)4(was)6(the)4( )-6(us)6(e)-6(of)-6(s)6(t)3(anda)4(rdised ques)6(tionna)4(ire)4(s)0(,)]TJ 0 -1.153 TD -0.001 Tc 0.365 Tw [(same samp)-7(li)-7(ng method)-7(s,)-7( )6(and)6(stan)-7(dar)-9(dised spiro)-7(m)-1(etric)]TJ T* 0 Tc 0.176 Tw [(measurement)-6(s)-3(in all p)-6(a)1(rtici)-6(p)0(ating centres.
This all)-6(owed,)]TJ T* 0.301 Tw [(for th)-6(e)-6(first)-6(ti)-6(m)11(e)-5(, co)-11(mpar)-8(ison)-6(s b)-6(e)1(tween countries)-6(and)-6( )]TJ T* 0.001 Tw [(different ty)-6(pes o)-6(f)3( )-5(far)-8(m)5(ing.)]TJ 0.994 -1.153 TD 0.557 Tw [(The finding)-6(s of this su)-6(rvey have advanced our)]TJ -0.994 -1.148 TD 0.023 Tw [(underst)-6(a)1(nding)-6(of the respiratory
health o)-6(f)3(far)-8(m)5(er)-8(s as t)-6(h)0(ere)]TJ 0 -1.153 TD -0.001 Tc 0.535 Tw [(is now a)-6(solid datab)-7(a)0(se on respirat)-7(ory sy)-7(mpto)-7(ms)-10(,)-7( )]TJ T* 0.1 Tw [(expo)-7(sure paramet)-7(e)0(rs, and l)-7(ung fu)-7(nction result)-7(s of ani)-7(m)4(al)-13( )]TJ T* 0 Tc 0.085 Tw [(and)-6(crop)-6(far)-8(m)0(ers in)-6(di)-6(fferen)-6(t European)-6(co)-6
(untries.)-6(This i)-6(s)-3( )]TJ T* 0.289 Tw [(i)-6(m)11(p)-6(o)0(rtant for far)-8(m)5(ers\222 h)-6(e)-5(alth. Secon)-6(d)0(l)-6(y, the European)-6( )]TJ T* 0.108 Tw [(Union and national legisl)-6(a)1(ti)-6(on will be better)6(infor)-8(med)-6( )6(t)-6(o)0( )]TJ 0 -1.148 TD 0.028 Tw [(control exp)-6(o)0(sure insid)-6(e ani)-6(m)5(al)-6(con)-6(f)3(ine)-11(ment buildin)-6
(gs)-6(and)-6( )]TJ 0 -1.153 TD 0.409 Tw [(greenhou)-6(ses)-6(since d)-6(o)0(se-respon)-6(se relati)-6(onship)-6(s can be)]TJ T* 0.001 Tw [(deduced fro)-11(m)5( )-5(our findi)-6(ngs.)-6( )]TJ 0.994 -1.153 TD 0.176 Tw [(Pig far)-8(m)5(er)-8(s were sho)-6(wn t)-6(o)0(be at highest risk for the)]TJ -0.994 -1.153 TD 0.034 Tw [(develop)-11(ment)-6(of respiratory)-6(sy)-6
(mpto)-11(ms. Po)-6(ultry and flo)-6(w)-5(er)]TJ 0 -1.148 TD 0.29 Tw [(far)-8(m)5(er)-8(s)6(h)-6(a)1(d an)6(increased risk for)6(th)-6(e develop)-11(ment o)-6(f)-2( )]TJ 24.858 65.688 TD -0.001 Tc 0.194 Tw [(sy)-7(mpto)-12(ms o)-7(f)-3(ast)-7(h)-7(m)4(a.)-7(Thu)-7(s)2(, esp)-7(ecially)-7( )-6(in these)-6(far)-9(ming)]TJ 0 -1.153 TD -0.018 Tc 0.069 Tw [(e)6(nviron)-7(m)
10(ents)7(,)5(p)5(r)-3(o)5(t)-1(ec)6(tive)6(m)10(e)0(asu)5(r)-3(es)7(s)7(hou)5(ld)5( )6(be)6( )6(re)6(co)-7(mm)10(ended.)]TJ T* 0 Tc 0 Tw [(This was con)-6(f)-2(ir)-8(m)11(e)1(d)-6(in the)-6(second p)-6(a)1(rt o)-6(f)3( )-6(our study)-6(. In t)-6(his)]TJ T* 0.001 Tc 0.05 Tw [(part o)-5(f)4(the survey,)-6(median)-5(exposure lev)-5(e)2(ls for)-6(endoto)-5(xin)-5(s)]TJ
T* 0 Tc 0.041 Tw [(and microorg)-6(a)1(nisms were shown to exceed reco)-6(mmen)-6(ded)]TJ 0 -1.148 TD -0.001 Tc 0.154 Tw [(expo)-7(sure)-6(stan)-7(dards)-6(not o)-7(n)-1(l)-7(y)-1(in ran)-7(d)-1(o)-7(m)4(l)-7(y)-1(cho)-7(s)2(en)-7(ani)-7(m)4(al)-13( )]TJ 0 -1.153 TD 0 Tc 0.115 Tw [(building)-6(s but)-6(also i)-6(n)0(green)-6(houses [11]. We h)-6(a)1(ve l)-6(ear)-7
(ned)]TJ T* 0.132 Tw [(that ventilatio)-6(n o)-6(f)3(the ani)-6(m)0(al hou)-6(ses and)-6(greenho)-6(uses is)]TJ T* 0.108 Tw [(an i)-6(m)5(portant)-6(fact)-6(or in i)-6(m)5(pr)-8(oving prev)-6(ent)-6(ion)-6(measures)-6(in)]TJ T* 0.028 Tw [(ani)-6(m)5(al buil)-6(di)-6(ngs [12, 1)-6(3, 1)-6(5)0(]. Thus, in regions)-6(with war)-8(m)5( )]TJ 0 -1.148 TD 0.239 Tw [(winters
v)-6(e)1(ntil)-6(ation via the wall \(no walls but draug)-6(ht-)]TJ 0 -1.153 TD 0.051 Tw [(excluder/p)-6(o)0(rch nets arou)-6(nd)-6(the stabl)-6(e)1(, 3)-6(walls and 1 o)-6(p)0(en)]TJ T* [(side,)-6(or gaps)-6(between the p)-6(l)0(anks\))-12(might)-6(be reco)-11(mmen)-6(ded)-6( )]TJ T* 0.006 Tw [(for new cattle houses [1)-6(3]. In pig and po)-6(ul)-6(try con)-6(f)3
(ineme)-11(nt)]TJ T* -0.018 Tc 0.132 Tw [(b)5(u)-1(ild)5(ings)7(a)6(bette)6(r)2(co)5(ntro)5(l)6(of)6(ve)6(ntila)6(tion)5(cou)5(l)-1(d)5(a)6(l)-1(so)6(i)-7(m)10(prov)5(e)]TJ T* 0.126 Tw [(wo)5(rkplace)6(e)6(xpos)7(ure)6(an)5(d)5(th)5(ere)6(by,)5( )6(dim)10(inish)5(the)6(o)5(ccu)5(patio)5(n)-1(a)6(l)-1( )]TJ 0 -1.148 TD 0 Tc 0.149 Tw [(risk of airway diseases in
far)-8(m)5(er)-8(s [12, 15]. Intervent)-6(ion)]TJ 0 -1.153 TD -0.018 Tc 0.001 Tw [(stud)5(ies a)6(r)-3(e)6(n)5(o)-1(w)5(wa)6(rran)5(ted)5(to)6(tes)7(t)-1( )6(the)6(effect of)8(such)5( )-6(m)10(easu)5(r)-3(es)7(.)6( )]TJ 0.994 -1.153 TD 0 Tc 0.159 Tw [(We have)-6(sho)-6(wn that)-6(far)-8(m)0(ers are)-6(expo)-6(sed to a)-6(higher)]TJ -0.994 -1.153 TD -0.001 Tc 0.098
Tw [(concentrati)-7(on of)6(ho)-7(use)6(du)-7(st)-7(m)10(i)-1(t)-7(e)0(s and sto)-7(r)-3(age mites)6(than)]TJ T* 0 Tc 0.313 Tw [(urban citi)-6(zen)-6(s [14]. On t)-6(h)0(e other)-8(han)-6(d, far)-8(m)5(ers h)-6(a)1(ve)]TJ T* 0.001 Tc 0.312 Tw [(shown a lower prevalence of nasal all)-5(e)2(rgies t)-5(h)1(an t)-5(h)1(e)]TJ 0 -1.148 TD 0 Tc 0.267 Tw [(general p)-6(opul)-6
(ation [10]. T)-8(his i)-6(s)3(an)-6(i)-6(mportant point)-6(in)-6( )]TJ 0 -1.153 TD 0.403 Tw [(underst)-6(a)1(nding)-6(the)-6(m)11(e)-5(chan)-6(isms o)-6(f)3(sensitisation. So)-6(me)-11( )]TJ T* 0.17 Tw [(mig)-6(ht suggest)-6(that the lower prevalen)-6(ce of)-6(sensiti)-6(sati)-6(on)-6( )]TJ T* 0.54 Tw [(among far)-8(m)5(i)-6(ng populatio)-6(ns may be due to health)-6
( )]TJ T* 0.001 Tc 0.131 Tw [(selection processes. On the other hand,)-5(far)-7(m)6(own)-5(ers are)7( )]TJ T* 0 Tc 0.257 Tw [(less lik)-6(ely to)-6(chan)-6(ge t)-6(h)0(eir)-8(occu)-6(pation)-6(t)-6(h)0(an workers in)]TJ 0 -1.148 TD 0.074 Tw [(other occupati)-6(ons [2)-6(2]. Ad)-6(d)-6(itionally,)-6(chil)-6(dren living)-6(on)-6(a)]TJ 0 -1.153 TD 0.023 Tw [(far)-8(m)5
(had a sig)-6(nificantly lower sen)-6(s)3(itizatio)-6(n rate co)-6(mpar)-8(ed)-6( )]TJ T* 0.09 Tw [(to children liv)-6(ing in rural environ)-6(ment b)-6(ut not on a far)-8(m)5( )]TJ T* 0.001 Tc 0.05 Tw [([5, 7, 17)-5(, 23].)-5(Therefore, an)-5(other po)-5(ssi)-5(ble explanation)-5(for)]TJ T* 0 Tc 0.392 Tw [(the lack o)-6(f)-2( )-6(an associati)-6(o)-6(n)0(bet)-6(w)0(een)-6
(sensitization)-6(and)]TJ T* 0.023 Tw [(expo)-6(sure in o)-6(u)0(r study)-11(migh)-6(t be a protecti)-6(v)0(e effect o)-6(f)3(, e.g.,)-6( )]TJ 0 -1.148 TD 0.438 Tw [(dietary or environ)-6(mental)-6(fact)-6(ors, wh)-6(ich seem to)-6(b)-6(e)-5( )]TJ 0 -1.153 TD 0.001 Tw [(relevant in)-5(far)-8(m)5(in)-6(g environ)-6(ments, e.g.)-5(en)-6(dotoxin [24].)]TJ 0.994 -1.153 TD
0.267 Tw [(Ani)-6(mal far)-8(m)0(ers co)-6(mplai)-6(n)-6(e)1(d signi)-6(ficant)-6(ly)-6(m)11(o)0(re o)-6(f)3(ten)6( )]TJ -0.994 -1.153 TD 0.227 Tw [(about)-6(sy)-6(mpto)-6(ms o)-6(f)3(chroni)-6(c bronchiti)-6(s t)-6(h)0(an the g)-6(e)1(neral)-6( )]TJ T* 0.29 Tw [(population)-6(. A high prevalence of chron)-6(i)0(c phleg)-6(m)11(an)-6(d)]TJ T* 0.352 Tw [(other sy)-11(mpto)-
6(ms o)-6(f)3(chroni)-6(c bronchiti)-6(s)-6(among)-6(far)-8(m)5(e)-11(r)-2(s)]TJ 0 -1.148 TD 0.017 Tw [(co)-6(mpared to controls has been reported b)-6(y)0(several aut)-6(h)-6(o)0(rs)]TJ 0 -1.153 TD 0.091 Tw [([6, 19, 21].)-6(However, t)-6(h)0(e h)-6(igher preval)-6(ence co)-11(mpared)-6(to)]TJ T* 0.148 Tw [(the general p)-6(opulation fou)-6(nd in our stu)-6(dy is
remarkabl)-6(e)-5( )]TJ T* 0.017 Tw [(becau)-6(se)-6(of the)-5(low p)-6(e)1(rcenta)-5(ge o)-6(f)3( )-6(smoker)-8(s)-3(a)-5(m)5(ong)-6(far)-8(m)5(e)-5(r)-2(s.)-6( )]TJ T* (Dalphin)Tj /F9 1 Tf 3.477 0 TD 0 Tw (et al.)Tj /F7 1 Tf 2 0 TD [( )-6([2] even repor)-8(ted an)-6(especially elevat)-6(ed ri)-6(sk)-6( )]TJ -5.477 -1.153 TD 0.011 Tw [(for the develo)-6(p)-6(m)5(ent of
chro)-6(nic bronchitis)-6(in non-smok)-6(e)-5(rs.)-6( )]TJ 0 -1.148 TD 0.24 Tw [(As sho)-6(wn i)-6(n)-6(our survey, other st)-6(udies con)-6(f)3(ir)-8(med)-6(h)-6(igh)]TJ 0 -1.153 TD -0.001 Tc 0.921 Tw [(dust co)-7(ncen)-7(trations ev)-7(en inside)-6(mo)-7(dern ani)-7(m)4(al)-13( )]TJ T* 0 Tc 0.081 Tw [(confi)-6(n)0(ement building)-6(s [20])-8(. This might)-6(i)-6(m)5
(pl)-6(y changes in)6( )]TJ T* 0.148 Tw [(workers)6(co)-6(mpensation practice, e.g., in Ger)-8(m)5(any.)-6( )6(Up)-6( )6(to)-6( )]TJ T* 0.21 Tw [(now, o)-6(nly ast)-6(h)-6(m)5(a can be)-6(co)-6(mpen)-6(sat)-6(e)1(d)-6(among)-6(far)-8(m)5(e)-11(r)-2(s.)]TJ T* 0.489 Tw [(Therefore, o)-6(n)0(e has to consid)-6(er assi)-6(milating chr)-8(onic)]TJ 0 -1.148 TD 0 Tw [(bronchitis
int)-6(o the li)-6(st o)-6(f)3(work-related respiratory disease.)]TJ 0.994 -1.153 TD 0.239 Tw [(This survey also supported the presu)-6(mption that pi)-6(g)]TJ -0.994 -1.153 TD -0.001 Tc 0.035 Tw [(far)-9(m)4(er)-9(s mainl)-7(y)6(su)-7(ffer)6(fro)-12(m)4(asth)-7(ma-li)-7(k)-1(e syndro)-7(m)4(e)6(and not)]TJ T* 0 Tc 0.443 Tw [(fro)-6(m)5(allergic asth)-6(ma [19)-6(])-2
(. Asth)-6(ma-lik)-6(e syndro)-6(m)5(e)-6(i)-6(s)-3( )]TJ T* 0.074 Tw [(distingui)-6(sh)-6(ed)-6(fro)-6(m)5(asth)-6(ma)-6(as a self-li)-6(m)5(it)-6(ed in)-6(flammat)-6(o)0(ry)]TJ 0 -1.148 TD 0.386 Tw [(event th)-6(at d)-6(o)0(es n)-6(ot invo)-6(lve persi)-6(s)3(tent)-6(airway hy)-6(p)-6(e)1(r-)]TJ ET endstream endobj 37 0 obj << /ProcSet [/PDF /Text] /Font << /F5 5 0